Tailgate Sander Plate Hinge Comparison

Purpose

The intent of this document is to show the design variations and beneficial aspects of 2 different hinge systems that were created and implemented by field maintenance personnel and their mechanics.

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Findings

The 2 different designs are stationed in the Paynesville and Morris Truck Stations. Although there are slight differences in the 2 designs, they both function in the same manner and achieve benefits beyond what we are currently using. The purpose of this modification is to improve our trucks ability to dump salt at the end of your shift. As we all know, salt tends to get lumpy and sometimes even freezes inside the box of a truck. When this happens, it is a very labor intensive process to remove it after an already long day of plowing. Since the salt tends to clump/freeze near the tailgate of the box, it will restrict the flow of any salt at the time of dumping. This design allows that sander plate to be mounted onto the tail-gate of the truck which then increases the space to the rear of the truck to allow the material to flow freely or at least in one large clump if your material is in that poor of condition. One other aspect that is shown with these designs is the locking lever that is used to keep the sander plate from dropping down when in the upright position during Post-Storm cleanup (truck washing). This feature will greatly reduce the amount of severe injuries sustained during this operation.

Conclusion

With the information that has been gathered from these 2 locations and the assigned operators of the trucks that these are installed on, the feedback has been overwhelmingly positive. Operators strongly feel that this modification should be on all trucks.

Thank you to all who participated in this project!

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Detailed Illustrations

Paynesville

Morris

Notice with the box in the full upright position; there is plenty of clearance between the sander plate and the ground. As long as the operator does not park directly over a pile of salt when dumping, the plate would not make contact with the ground or get bent up.

The Paynesville truck has a bracket welded onto the tailgate with bolts to disconnect the hinge plate.

The Paynesville and Morris hinges have a quick-pin feature for mounting the sander plate to the truck. You will notice that both designs have a bolt or a pin that is used as the main connection and also doubles as the swivel for the hinge. A hair-pin keeper is then used to hold it in place.

When cleaning the truck after your shift, flipping the sander plate upward to lay against the tailgate allows you easy access to the sander. A locking lever has been installed onto these trucks. The only suggestions about the locking lever on the Paynesville truck is that the operators would prefer the pocket to be larger and mounted on the inside (or opposite) of the sander plate.

Morris's design uses 2 hinges on the outer parts of the tailgate mounted to the chain pockets. Note that with these designs, the truck must be outfitted with tailgate prop wings. The use of a chain to adjust the tailgates maximum open position will not work with this modification.

Both designs accomplish the same task. The main differences between these designs are whether the hinge brackets are welded into place or bolted on. Morris is bolted onto the chain pocket and is completely removable.

One thing to keep in mind when installing this hinge modification is that you must make sure that the tailgate prop wings are adjusted and securely mounted so that after your load has been dumped, the wings line up properly and reset themselves into the tailgate latch correctly. If this is not done properly, you (the operator) will have to fight with the tailgate to get the wings to line up and that could be a potential safety hazard.