

# SEMI TRUCK TRAILER UNCOUPLING ASSIST DEVICE



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## NEED

Production of Mint Oil requires that the Semi Truck used to transport the specialized mint hauling trailers, couple or uncouple from the trailers up to 24 times during a working shift. During this process the driver is required to crank the trailer landing gear (parking rests) up or down each time the trailer is moved and then disconnected. This was causing complaints and reduced production from drivers. Improper body posture, high grip strength requirements, and large awkward arm and shoulder forces resulted in ergonomic hazards. The need for a new device design stemmed from the requirements that the device be attached to the truck and be easily and quickly converted for use on any trailer. Further restrictions required that the trailer be able to be hand cranked in the conventional method when necessary. The devices also had to be capable of operating as a system and be installed on all trucks used for mint hauling.

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## SOLUTION

The solution is a portable, heavy-duty, air drive motor with a custom built coupler designed to operate the original trailer landing gear drive shaft. The air motor is connected to an added auxiliary air tank powered by the trucks air system. There is a safety valve installed that ensures that the auxiliary system will not compromise the safety of the truck air brake system. The motor is connected with a quick coupler but can be left connected and mounts in a holster during the working shift. The motor torque can be easily adjusted with a pressure regulator and can be reversed with a valve on the motor. The motor has a "T" handle with a finger operated control valve that makes the eight pound motor easy to handle and control.

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## BENEFIT

The ergonomic analysis using NIOSH work practices determined an estimated 15% potential reduction in risk of employee injury with four employees reporting no discomfort whatsoever using the new device. This is a direct result of elimination of awkward body postures and a reduction in arm and shoulder forces. Further stress reduction is gained by reducing the length of time that the operator is exposed to the operation by two thirds. This reduced operating time also has resulted in increased operational efficiency.

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## CONTACTS

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