

## Tire Chain Tool Rack

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### STATEMENT OF NEED:

Operating a motor grader for a government agency is a challenging job, often considered a mobile one man roadway improvement operation, adhering to the legal requirements for traffic control. The operator not only needs to be proficient with the operation of the machine, but must also maintain a working knowledge of the local conditions and exercise a level of awareness as it relates to the application of preventative methods associated with erosion control. He is the eyes and ears for his patrol, and it is not uncommon for an operator to stop the machine and perform manual tasks. Shoveling ditches, removing tree limbs and debris from ditch lines and culvert openings, cutting down tree limbs that impede the safe operation of the machine and the travelling public, and raking up debris from the roadway surface, are all mitigation tasks that may be performed daily by a motor grader operator. The condition of the roadway surface is primary, and many conditions may interrupt smooth travel on the roads. To that end a motor grader operator needs to be equipped with the appropriate tools to augment his abilities. Challenging weather conditions may give cause for the application of tire chains on the machine wheels to offer additional traction. Shovels, rakes, pole saws, tow chains, tire chains, signs, portable sign stands, and more all need to be aboard.

### PROBLEM:

For many years, the County purchased motor graders and then by drilling holes for bolts or by welding hooks in place, safely mounted accessory tools onto the machine. A few scratches or scrapes on the machine meant little, provided that the operators were properly equipped. However, with new arrangements made for leased motor graders replacing the previously County owned machines, a new challenge presented itself. The equipment manufacturer made a lease stipulation stating that their equipment could not be welded upon, or drilled with holes for hanging tools or other apparatus. The County needed to come up with a new method for equipping operators with the necessary tools without utilizing the tactics from years gone by.

### SOLUTION:

The manufacturer agreed to allow the County to utilize two heavy brackets on the back of the ripper bar at the rear of the motor grader as a means of affixing a rack to hang tire chains and tools. This would allow for minimal contact between the tool rack contents and the machine in question. A rack was developed by County Operations staff in the fleet fabrication shop, and can be removed or installed by two staff members. Two operators can

easily swap racks and all contents between two machines inside 30 minutes. It provides for ease of access, and is operator friendly without causing damage to the machine, much to the satisfaction of the lease company and the County.

**COST, LABOR, MATERIALS:**

The cost of the materials and time required to manufacture the rack is minimal, about \$600.00.

**BENEFITS:**

The tire chain/tool rack allows the operator to carry six tire chains, three shovels, a rake, a pole saw, four roll up signs, four portable sign stands, dozens of bungee straps, and two tow chains. By raising and lowering the ripper bar, the tools and chains are well up out of the way during operations, while they can be lowered for easy access to the operator. This rack allows for the motor grader to continue functioning safely as a mobile one man operation, with quick access to all the necessary tools in place. It complements the lease agreement by providing for the lease stipulation and all parties are in concurrence, while the functionality of the machine is undeterred.





