Ergonomically reduces injury risk operating trailer landing gear
Each shoulder surgery is an estimated $42,000 expense loss.
Elimination of 1 shoulder surgery provides the savings to equip over 1,200 trailers with the SIXTH WHEEL® ratchet.
A cost effective solution for rising workers compensation expense.
The SIXTH WHEEL® ratchet is a proven solution – preferred by 80% of drivers in actual use tests.

Ratcheting crank handle fits all trailers and all standard landing gear

Self-Locking Security Cap made of hardened steel
This pin can only be removed by using heavy duty shop equipment.

Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>34902R08BLK</td>
<td>1 x 8&quot; Round Hole</td>
</tr>
<tr>
<td>34902S08BLK</td>
<td>1 x 8&quot; Square Hole</td>
</tr>
<tr>
<td>34902R13BLK</td>
<td>1 x 13&quot; Round Hole</td>
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<td>34902S13BLK</td>
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</tr>
<tr>
<td>34902R18BLK</td>
<td>1 x 18&quot; Round Hole</td>
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<tr>
<td>34902S18BLK</td>
<td>1 x 18&quot; Square Hole</td>
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<tr>
<td>070445</td>
<td>Security Cap</td>
</tr>
<tr>
<td>070446</td>
<td>Security Pin</td>
</tr>
</tbody>
</table>

Available in three lengths: 8", 13", 18". Specify round or square hole for all 1" diameter landing gear drive shafts.
Ergonomic Analysis of the SIXTH WHEEL® Ratchet

Mark A. Heidebrecht, MSE, ACSM, CEA
Board Certified Ergonomist
Board Certified American College of Sports Medicine

According to the Bureau of Labor Statistics, the trucking industry continues to be among the leading industries for the most lost work days per injury.\textsuperscript{1,2}

**Raising and lowering the dolly legs of tractor trailers is one of the most hazardous tasks performed by drivers.** When using high gear, forces required to perform this task may exceed 100 lbs with an unloaded trailer and increase significantly as weight is added to the trailer. This force requirement is at the upper limit of average strength capabilities.\textsuperscript{3,4,5} When individuals are performing tasks at or above their safe strength capabilities, injury risk increases significantly.

The standard crank operates by rotating in a complete circle. This requires the individual to exert extremely high forces in postures that are biomechanically inefficient, **significantly increasing injury risk.**

The Dixie Industries’ SIXTH WHEEL\textsuperscript{®} utilizes a ratcheting mechanism that allows the individual to position the crank to allow for greater force generation, at all times. Muscles have a range, or an angle, in which they perform most efficiently. By changing the orientation of the crank, you are able to increase muscular force production and dramatically decrease awkward postures associated with the task. The Dixie Industries’ SIXTH WHEEL\textsuperscript{®} eliminates the awkward horizontal positions, as seen in Image A, where it is difficult generate force in the direction needed to initiate movement. Also, the ratcheting mechanism enables the use of body weight to exert force on the crank handle, reducing the amount of muscular exertion required.

The standard crank system for raising and lowering the dolly legs presents several ergonomic risks. Using the SIXTH WHEEL\textsuperscript{®} reduces ergonomic risk factors associated with raising and lowering the dolly legs of tractor trailers.

\textsuperscript{1} Bureau of Labor statistics, Workplace Injuries and Illnesses, 2002
\textsuperscript{2} Bureau of Labor statistics, Workplace Injuries and Illnesses, 2003
\textsuperscript{5} Snook, S.H. and Ciriello, Y.M., 1991. The design of manual handling tasks: revised tables of maximum acceptable weights and forces. Ergonomics, 34(9), 1197-1213

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