The Superior Chalmers 700 rubber spring tandem trailer suspension

The premium advantage now offers even lighter weight - less maintenance greater stability - more economy

The 700 series continues the premium advantages of Chalmers suspensions - 10 years tested and proven to be safer, smoother and more profitable in all heavy duty applications. Virtually indestructible rubber springs and upgraded walking beams ensure full equalization of axle weights at all times under the most extreme degrees of articulation. Maintenance is reduced to an absolute minimum - only one rubber bushing in all wear joints could require replacement service. And this can be completed within 2 hours in any shop - no special equipment needed.

Chalmers Suspensions are ideal when stability for full loads, and soft-rides for empty loads are important features.

Check into Chalmers advantages and find for yourself why many major tank and trailer fleets are specifying Chalmers rubber spring tandem trailer suspensions.

Chalmers Suspensions International Inc. 5400 NORTHAM DRIVE, MISSISSAUGA, ONTARIO L4V 1J1 - TEL: (905) 362-6400 - FAX: (905) 362-6401
Original Principle:
Chalmers have taken a completely fresh approach to the conflicting problems associated with the design of tandem suspensions. They have separated the responsibilities of supporting and cushioning the load from those of locating and guiding the axles. This separation has permitted each part to be specifically designed for its own function. This Chalmers design approach has resulted in one of the lightest, if not the lightest, trailer tandems available to the industry for any given capacity. Running maintenance is virtually eliminated as the suspension requires no lubrication, and the easily replaced rubber torque rod end bushings are essentially the only wearing parts; consequently operating costs are extremely low.

The suspension is equally at home on or off-highway due to its excellent and uninhibited articulation. The wheels stay on the ground.

Variable rate rubber springs in restrictor cans, placed on wide spring centres, couple a soft, easy ride with superior stability when loaded.

The separation of the load-carrying function from the braking, and steering functions ensure equalization of load between the two axles and eliminates axle wind-up. The axles are always loaded 50/50, even during severe braking.

Support and Cushioning

1. Rubber Springs:
Rubber is lighter than steel and possesses excellent qualities as a spring. The Chalmers "Loadguard" variable rate 100% rubber springs - one per side - are directly loaded in compression and self-adjust to the load on impact. The result is that the springs are very soft when the load is light, but become very stiff under full load. There is thus a near constant frequency and quality of ride. This variable rate of deflection also minimizes the roll or side-sway so that anti-roll bars or systems are not required. When a vehicle rolls, the rate of deflection of the outer spring increases considerably while that of the inner spring decreases. The net result is a very stable vehicle with excellent cornering.

The springs are unbounded and their hollow centres are open to the air for ventilation.
Metal caps fit over them to prevent excessive deformation. The springs are thus literally maintenance free.

Axle Guidance

3. Four-Rod Axle Location:
There now remains the responsibility of guiding the axles. Each axle is positively located longitudinally, transversely, and torsionally by four rubber-bushed torque rods. There are two longitudinal rods attached below the axe centre which take most of the longitudinal forces, holding the axles parallel to each other at all times.
The twin upper rods complete the parallelogram to absorb the torque at all times. Their angled mounting in plan view locates the axles sideways. This unique arrangement maintains accurate axle alignment and resists all side-scuttling. The use of twin diagonal rods keeps the suspension symmetrical.
The roll-centre of the suspension is at the tower above the axle where the upper rods pivot. Its high location minimizes side-sway.

4. Spigot Joints:
The torque rods pivot on rubber bushings, which provide transverse cushioning. Unbound all-rubber "cartilages" are used in the sixteen identical joints, each held together by a high tensile bolt and nut. The fasteners hold a removable cap on to a spigot which is frame or axle mounted. This pre-loads the rubber and retains the torque rod end.

The long-life bushings can be replaced in minutes by common tools without disturbing the axles or jacking up wheels. These bushings do not support any load. There is one size of bushing to stock for each suspension. Different sizes are used in the range of capacities.

Chalmers Advantages

1. No leaf springs or air bags to replace – the Chalmers "Loadguard" hollow rubber spring is literally indestructible.
2. Guaranteed no-hop on braking for safety.
3. Increased tire mileage due to true-tracking and no-hop.
4. Minimum maintenance on suspension – no grease or oil ever.
5. Reduced maintenance to vehicle due to flat tire – no fifth wheel surge.
6. Full freedom of articulation - both parallel and diagonal.
7. Each set of tires takes its full weight at all times – this saves stub ends and wheel bearings.
8. Ease and simplicity of repairs if in an accident.
9. Greatly increased stability - combats side-sway for faster runs.
10. Increased cornering ability.
11. Driver comfort greatly improved for increased productivity and safety.

<table>
<thead>
<tr>
<th>AXLE SPACING</th>
<th>CAPACITY</th>
<th>WEIGHT (LBS.)</th>
<th>AVAILABLE OPTIONS</th>
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<tbody>
<tr>
<td>54&quot;, 63&quot; &amp; 72&quot;</td>
<td>46,000 LB.</td>
<td>54&quot; – 755</td>
<td>High, low and extra low mount</td>
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<td>63&quot; – 850</td>
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<td>72&quot; – 900</td>
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<tr>
<td>54&quot;, 63&quot; &amp; 72&quot;</td>
<td>60,000 LB.</td>
<td>54&quot; – 900</td>
<td>Fits all axle types</td>
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<tr>
<td></td>
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<td>63&quot; – 950</td>
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<td>72&quot; – 1,000</td>
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<tr>
<td>96&quot;, 108&quot;</td>
<td>46,000 LB.</td>
<td>96&quot; – 850</td>
<td>Available for all axle tracks</td>
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<td>108&quot; – 879</td>
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<td>55,000 LB.</td>
<td>96&quot; – 1060</td>
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<td>108&quot; – 1089</td>
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<td>500 Single Axle</td>
<td>23,000 LB.</td>
<td>280</td>
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<tr>
<td>Model Available</td>
<td>30,000 LB.</td>
<td>390</td>
<td>High stability model for high center of gravity applications</td>
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