Multiple Synchro Drive System
For Powered and Mechanical Assist Carriages

Spacesaver’s exclusive Multiple Synchro Drive System provides a state-of-the-art method of equalizing carriage wheel rotation and driving both sides of the carriage to deliver smooth, easy and parallel carriage movement and long system life.

**BENEFITS**
1. Push and pull racking movement common with traditional mobile systems is eliminated by providing smooth, easy carriage operation.
2. Normal cyclic load stress (see page 2) is minimized and carriage racking is eliminated decreasing the strain and wear on carriage(s), guidance system and rails for longer system life.
3. Media loads can be shifted and reorganized as needed without sacrificing system performance.
4. Fragile media is protected from damage caused by rough, jerky carriage movement in other drives.
5. Multiple synchronized wheels provide balanced drive transmission on carriage length and width, which further enhances the system’s operation and life expectancy.

**DESIGN AND CAPABILITIES**
Multiple Synchro Drive System’s patented chain and sprocket design ensures that the leading and trailing carriage edges of each carriage move together by connecting the two wheels riding on the designated rail(s) to each other in a synchronized wheel assembly for balanced, simultaneous wheel movement. The unit welded construction of Spacesaver carriages works with synchro system drives to further assure long term carriage squareness and parallel movement.

Powered and mechanical assist systems with carriages six feet (1800 mm) and longer feature synchronized wheel assemblies at two or more rail locations and a continuous drive shaft that links all synchronized wheel assemblies together. Working together, the synchronized wheel movement and connecting drive shaft allows the entire carriage to move precisely and consistently parallel to the other system carriages regardless of media load irregularities.
MULTIPLE SYNCHRO DRIVE SYSTEM:
Dual synchronized drive wheels on both sides of designated wheel housing(s), as indicated on the drawings, to be 5” (127 mm) diameter and connected with a #40 roller chain to ensure even wheel movement. Multiple Synchro Drive System assemblies shall be interconnected with a continuous drive shaft for simultaneous wheel rotation and even, parallel and forth and as it rests. The force of movement combined with the weight of the stored materials transferred to the storage housing and down the storage housing’s vertical members to the carriage, represents the cyclic load stress on the carriage. From the carriage, the load is transferred to the bearing/axle/wheel assembly where it becomes a point load that is then transferred to the system’s rails, and finally to the grout and floor.

APPLICATION
Spacesaver’s patented Multiple Synchro Drive System is available for powered and mechanical assist systems with carriages 18” (456 mm) wide or wider. Roller guide, center flange or dual flange guidance systems may be used with appropriate low profile, standard or structural rails.

Cyclic load stresses are the weight and forces placed on all parts of a mobile system as it cycles back and forth and as it rests. The force of movement combined with the weight of the stored materials transferred to the storage housing and down the storage housing’s vertical members to the carriage, represents the cyclic load stress on the carriage. From the carriage, the load is transferred to the bearing/axle/wheel assembly where it becomes a point load that is then transferred to the system’s rails, and finally to the grout and floor.

MULTIPLE SYNCHRO DRIVE SYSTEM LOCATION FOR POWERED AND MECHANICAL ASSIST CARRIAGES

<table>
<thead>
<tr>
<th>Carriage Length</th>
<th>No. of Rails</th>
<th>Synchro System Location</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>3’ – 4’</td>
<td>2</td>
<td>RAIL 1</td>
<td></td>
</tr>
<tr>
<td>6’ – 9’</td>
<td>2</td>
<td>RAILS 1 &amp; 2</td>
<td></td>
</tr>
<tr>
<td>10.5’ – 16’</td>
<td>3</td>
<td>RAILS 1 &amp; 3</td>
<td></td>
</tr>
<tr>
<td>18’ – 21’</td>
<td>4</td>
<td>RAILS 2 &amp; 3</td>
<td></td>
</tr>
<tr>
<td>24’ – 30’</td>
<td>5</td>
<td>RAILS 2 &amp; 4</td>
<td></td>
</tr>
<tr>
<td>33’ – 36’</td>
<td>6</td>
<td>RAILS 2 &amp; 5</td>
<td></td>
</tr>
<tr>
<td>39’ – 45’</td>
<td>7</td>
<td>RAILS 2, 4 &amp; 6</td>
<td></td>
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<tr>
<td>48’ – 81’</td>
<td></td>
<td>Consult Factory</td>
<td></td>
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</tbody>
</table>

NOTES:
Synchro locations shown above are typical and can vary by job. Contact factory to verify actual number and location of synchro wheel assemblies.

TECHNICAL SPECIFICATIONS

MULTIPLE SYNCHRO DRIVE SYSTEM:
Dual synchronized drive wheels on both sides of designated wheel housing(s), as indicated on the drawings, to be 5” (127 mm) diameter and connected with a #40 roller chain to ensure even wheel movement. Multiple Synchro Drive System assemblies shall be interconnected with a continuous drive shaft for simultaneous wheel rotation and even, parallel carriage movement. Load wheels shall be 3” (76 mm) diameter [5” (127 mm) optional]. All wheels to be machined from solid 1045 steel and equipped with two (2) permanently shielded bearing assemblies. Spacers to be provided on both sides of wheel bearings to eliminate friction between wheels and carriage.

* Specifications subject to change.