Design Criteria for Multi-Axis Systems

The schematics below represent various axes for movement. When describing the system needs, some basic concepts will identify parameters. For the drive mechanism, the X-axis is typically the long run length. The Y-axis is the width and Z-axis is the vertical stroke. Other helpful criteria is the length (in or mm) of movement or stroke for each axis, speed (in/sec or mm/sec) of the stroke desired, and acceleration (in/sec² or mm/sec²) if any. Also identify the frequency of stroke in times per hour or per day.

Type of Application: ____________________________________________________________

<table>
<thead>
<tr>
<th>Stroke</th>
<th>X</th>
<th>in or mm</th>
<th>Y</th>
<th>in or mm</th>
<th>Z</th>
<th>in or mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
<td>X</td>
<td>in/sec or mm/sec</td>
<td>Y</td>
<td>in/sec or mm/sec</td>
<td>Z</td>
<td>in/sec or mm/sec</td>
</tr>
<tr>
<td>Acceleration</td>
<td>X</td>
<td>in/sec² or mm/sec²</td>
<td>Y</td>
<td>in/sec² or mm/sec²</td>
<td>Z</td>
<td>in/sec² or mm/sec²</td>
</tr>
<tr>
<td>Position Accuracy</td>
<td>X</td>
<td>+/- __________ in or mm</td>
<td>Y</td>
<td>+/- __________ in or mm</td>
<td>Z</td>
<td>+/- __________ in or mm</td>
</tr>
</tbody>
</table>

Motor: □ AC Motor Frequency Controlled □ Servo Load ______________ Lbs or N Cycle Rate _________ cycles/hour

Other: (Ambient Conditions, etc., that may impact function) _______________________________________________________________

Criteria for Lift Systems

1. Load Frame
2. Conveyor
3. Frame with Forks

Type 1, 2 or 3 or other (Describe) ____________________________________________________________

B = __________________ in or mm L = __________________ in or mm

Load: ________________ Load Center: ________________ Stroke: S = ________________ in or mm

Max Height of Load Frame: H = __________________ in or mm

Motor - AC Frequency Controlled or Servo __________ Top mount or Floor level __________

Lifting Speed: ______________ ft/sec or m/sec Cycle Rate: ____________ Cycles Per Hour

Fail Safe Brake: (y/n) __________ Lifting Sensors or Proximity Switches:____________________

Mechanical Locking System: __________________ Standby By Drive _______________________

Lift Mechanism Type: □ Chain □ Belt □ Rack & Pinion □ Hydraulic □ Other

Describe Operating Conditions (Surrounding Environment, Temps, Moistures, Contaminants, etc., Drawing/Sketch available? ) ________________________________

Please include a drawing/sketch if possible. Additional System concepts are available at www.winkel.de. Contact PTI for additional information. Phone: 704-588-1091 | Fax 704-588-5738 | www.ptintl.com