

Selection Criteria for General Linear Motion Systems

POSTLUDES

Precision

aka: accuracy, repeatability

- What is more important, accuracy or repeatability?
- What is the accuracy/repeatability requirement?
- Are these values realistic, based upon the desired motion profile?

Orientation

- How will the system be mounted ("normal", on its side, inverted, vertical, etc.)?
- How will this affect the load requirements?

Speed

aka: velocity,
acceleration, motion profile

- What is the maximum speed and acceleration required?
- What is the maximum jerk allowable?
- What motion profile (shape) is desired?

Travel

aka: stroke,
over-travel, envelope

- What is the required travel (stroke)?
- What is the overall envelope allowed?
- How much over travel (safety zone) is required?

Load

- What is **End of Arm Tooling (EOAT)** and where is it located?
- What additional forces are seen by the system during use (e.g., cutting or pushing forces)?
- What do the static and dynamic free body diagrams look like? Are all loads considered?
- What is expected of the system after an impact?

Unknowns

- What could possibly go wrong?
- How will someone misuse this system?
- What else could go wrong (Repeat this question to further explore)?

Duty/Life Cycle

- What is the actual duty cycle for the system?
- What is the expected lifetime?

Environment

- What environment will the system be installed?
- Are there hazards in the environment?
- Will the system disburse contaminants?
- What's the maintenance schedule?
- Is the system accessible for maintenance/lubrication?

Safety

- Are there any safety standards to which the system needs to conform?
- What could happen if the system fails?
- Are there safeguards that need to be installed for a system failure?
- Could people be injured by this system? Are there installed safety features?