## 7.2 Dynamic load capacity of Standard Axis Systems

The dynamic load capacity of axis systems is limited mainly by the deformation of the Y axis, which is caused by the dynamics of the Z axis. The diagram in Figure 7.2 shows the load limits of the standard axis systems as a function of the stroke lengths of the Y and Z axis and the permissible dynamic load capacity. Applications with high accelerations above 5 m / s² are only sensible for the Standard Axis System B with short strokes of the Z axis. When determining the dynamic load capacity, the permanent weight of the moving axis need not be taken into account.

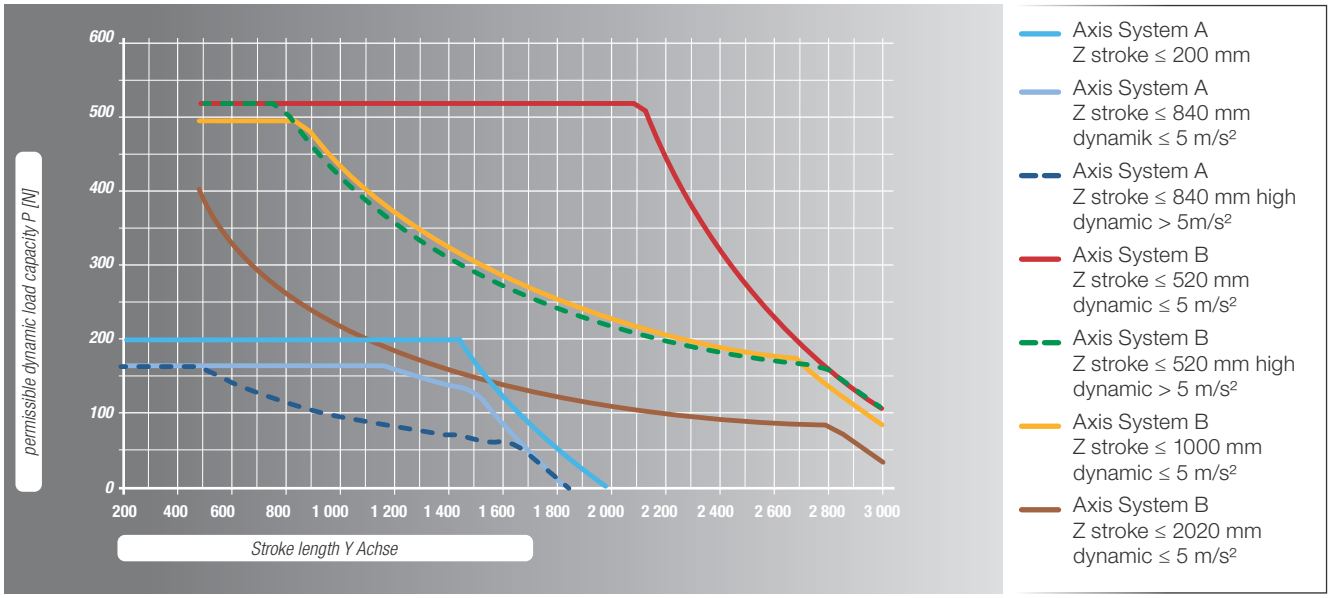


Figure 7.2 ___ Dynamic load capacities of Standard Axis Stems

### Example:

| | | | |
|---|---|---|---|
| • Load m: | 10 kg | Dynamic load capacity: | $P = m \times a$ |
| • Y stroke: | 1500 mm | | $P = 10kg \times 25\ m/s^2$ |
| • Z stroke: | 300 mm | | $P = 250\ N$ |
| • Acceleration a of the Z axis: | 25 m/s | | |

In the diagram in Figure 7.3, which was reduced to the high dynamic curves, the intersection of 1500 mm Y axis stroke and 250 N dynamic load capacity is just below the curve for an axis system B with a Z stroke of ≤ 520 mm. Thus, this application with an axis system B can be realized.

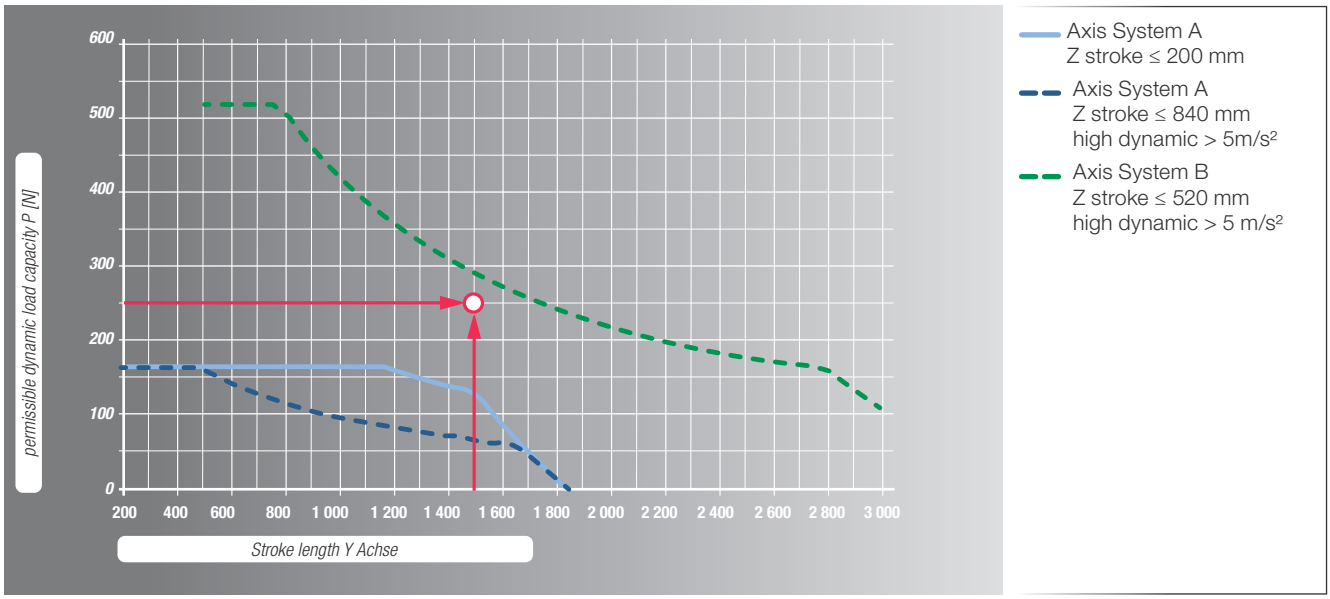


Figure 7.3 ___ Dynamic load capacities of Standard Axis Stems with high dynamic