YASKAWA
PARTNER SUPPORT
Shared Integration Experience

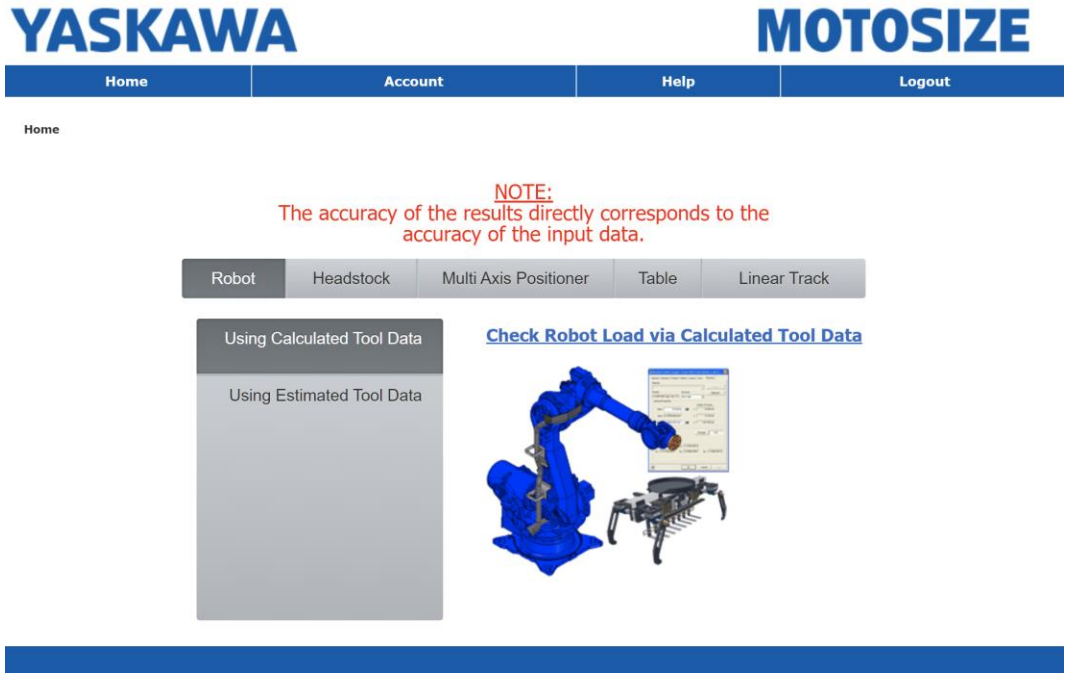
This document captures ideas, experiences, and informal recommendations from the Yaskawa Partner Support team. It is meant to augment – not supersede manuals or documentation from motoman.com. Please contact the Partner Support team at partnersupport@motoman.com for updates or clarification.

Motosize: Customer Data Needed

Introduction

Motosize is an excellent tool to verify which robot or positioner will work with a tool, part, or fixture. However, it can feel intimidating for most people when trying to determine what data is needed to get the results needed. The following examples define which data the customer will need to provide to complete the analysis.

Always remember…the quality of the results will always depend on the quality of the customer data.



Evaluate a Robot: Customer Data Needed

Preferred Customer Data:

The best Data are native 3D CAD models. The original models contain the correct mass properties.

But to make sure, the following needs to be completed by the customer:

1. All components (at least the major components) need to be present and need to be solid bodies (no surfaces).
2. All components need to have their mass defined (either by material type or overriding the default mass).
3. If the robot is picking and moving a part, the heaviest part model needs to be included.
4. REMEMBER: The CAD model of the tool should represent the actual tool as closely as possible.

Once the data is ready to send, use the CAD software's "Pack and Go" feature to collect and zip up all the relevant files.

For more information on sending CAD models, see the Whitepaper "How to Use Pack and Go".

Fallback Customer Data:

If the native CAD models are not available, use a neutral CAD format of the tool/part.

It is important to know that there will be no mass data included, just geometry.

The customer will need to complete the following:

1. Supply a STEP or Parasolid model of the tool/part.
2. Markup screenshots visually showing each component's material or what each component weighs.
3. If the robot is picking and moving a part, the heaviest part model needs to be included.
4. REMEMBER: The CAD model of the tool should represent the actual tool as closely as possible.

Please note that this method is less accurate and more time consuming.

Better than Nothing Customer Data:

If there is no 3D model, then the only other option is to rely on 2D drawings or manual measurements.

Note: These results are only useful in the early concept stage of design.

Data Needed:

1. Estimated mass of the tool
2. Estimated mass of the heaviest part
3. Basic tool dimensions (Length, Width, and Height or Diameter and Height)
4. Basic part dimensions (Length, Width, and Height or Diameter and Height)
5. Estimated Center of Gravity (Cg) of the tool in X, Y, Z
6. Estimated Center of Gravity (Cg) of the part in X, Y, Z

Note:

1. All Cg dimensions start from the robot flange.
2. Results are estimated and will report only on the B and T axis (5^{th} & 6^{th} axis)
3. Results can be skewed if the tool has a lot of open gaps vs the estimated tool's filled volume.

Evaluate Headstock / Multi-Axis Positioners / Tables: Customer Data Needed

Preferred Customer Data:

The best Data are native 3D CAD models. The original models contain the correct mass properties.

But to make sure, the following needs to be completed by the customer:

1. All components (the fixture and the part) need to be present and need to be solid bodies (no surfaces).
2. All components need to have their mass defined (either by material type or overriding the default mass).
3. REMEMBER: The CAD model of the fixture and part should represent the actual tool as closely as possible.

Once the data is ready to send, use the CAD software's "Pack and Go" feature to collect and zip up all the relevant files.

For more information on sending CAD models, see the Whitepaper "How to Use Pack and Go."

Fallback Customer Data:

If the native CAD models are not available, use a neutral CAD format of the part/fixture.

It is important to know that there will be no mass data included, just geometry.

The customer will need to complete the following:

5. Supply a STEP or Parasolid model of the part/fixture.
6. Markup screenshots visually showing each component's material or what each component weighs.
7. REMEMBER: The CAD model of the fixture and part should represent the actual tool as closely as possible.

Please note that this method is less accurate and more time consuming.