

MSD Selection Tool User Manual

V1/2026.07

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MSD Selection Tool User Manual

MSD selection tool incorporates the product data of the MSD drive wheels and supports two selection methods:

1. Select based on naming rules.
2. Select based on application requirements.

It also has the functions of simulation calculation and drawing download:

1. During the selection process, you can conduct simulation calculations based on working conditions to verify the rationality of the selection results.
2. You can download 2D/ 3D drawings.

1. Select based on naming rules

You can input any one or more of the following parameters and click “Calculation to result”:

Quickly select the desired model. The fewer the parameters you input, the more models will be matched; the more parameters you input, the more precise the matching will be.

1.1 Input the required parameters.

Wheel O.D. (mm):	160
Gear Ratio:	Positive integer
Motor Rated Power(W):	PLEASE SELECT
Motor Rated Speed (rpm):	PLEASE SELECT
Rated Voltage(V):	PLEASE SELECT
Encoder Option:	PLEASE SELECT
Brake Option:	PLEASE SELECT

Calculation to Result

1. Select based on naming rules

1.2 After clicking "Calculation to result", select the corresponding product model as shown below.

Result		
Model	Torque Curve	Drawing
MSD160-20-075-30GSL-B		2D 3D
MSD160-16-075-30GSL-B		2D 3D
MSD160-32-075-30GSL-N		2D 3D
MSD160-10-075-20GSL-N		2D 3D
MSD160-32-075-30GSL-B		2D 3D
MSD160-16-075-30GSL-N		2D 3D

1. Select based on naming rules

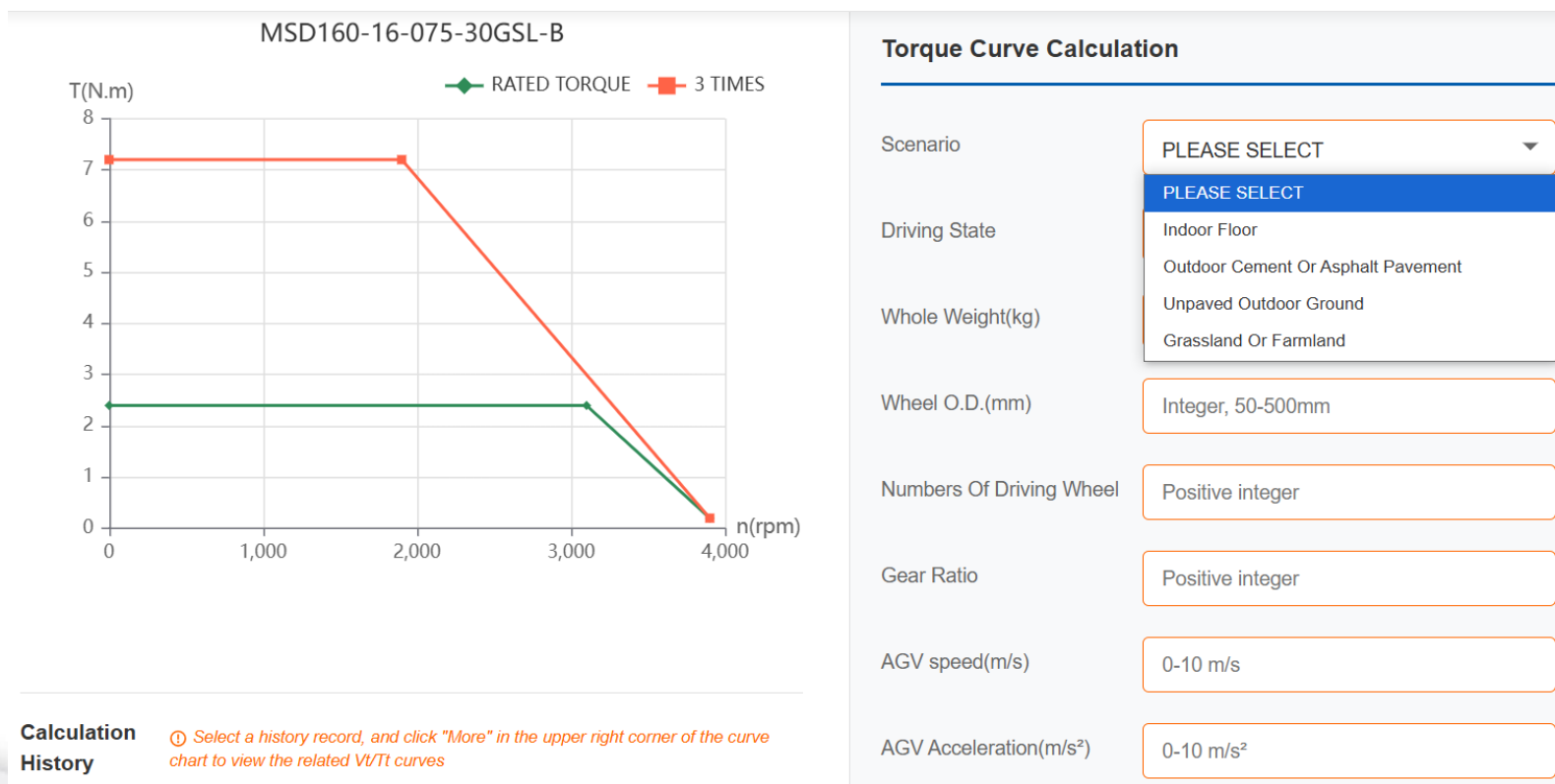
1.3 Click on "Torque Curve" to enter the simulation calculation, which can simulate the motor torque and speed according to different scenarios and driving conditions.

Result

Model	Torque Curve	Drawing	
MSD160-20-075-30GSL-B		2D	3D
MSD160-16-075-30GSL-B		2D	3D
MSD160-32-075-30GSL-N		2D	3D
MSD160-10-075-20GSL-N		2D	3D
MSD160-32-075-30GSL-B		2D	3D
MSD160-16-075-30GSL-N		2D	3D

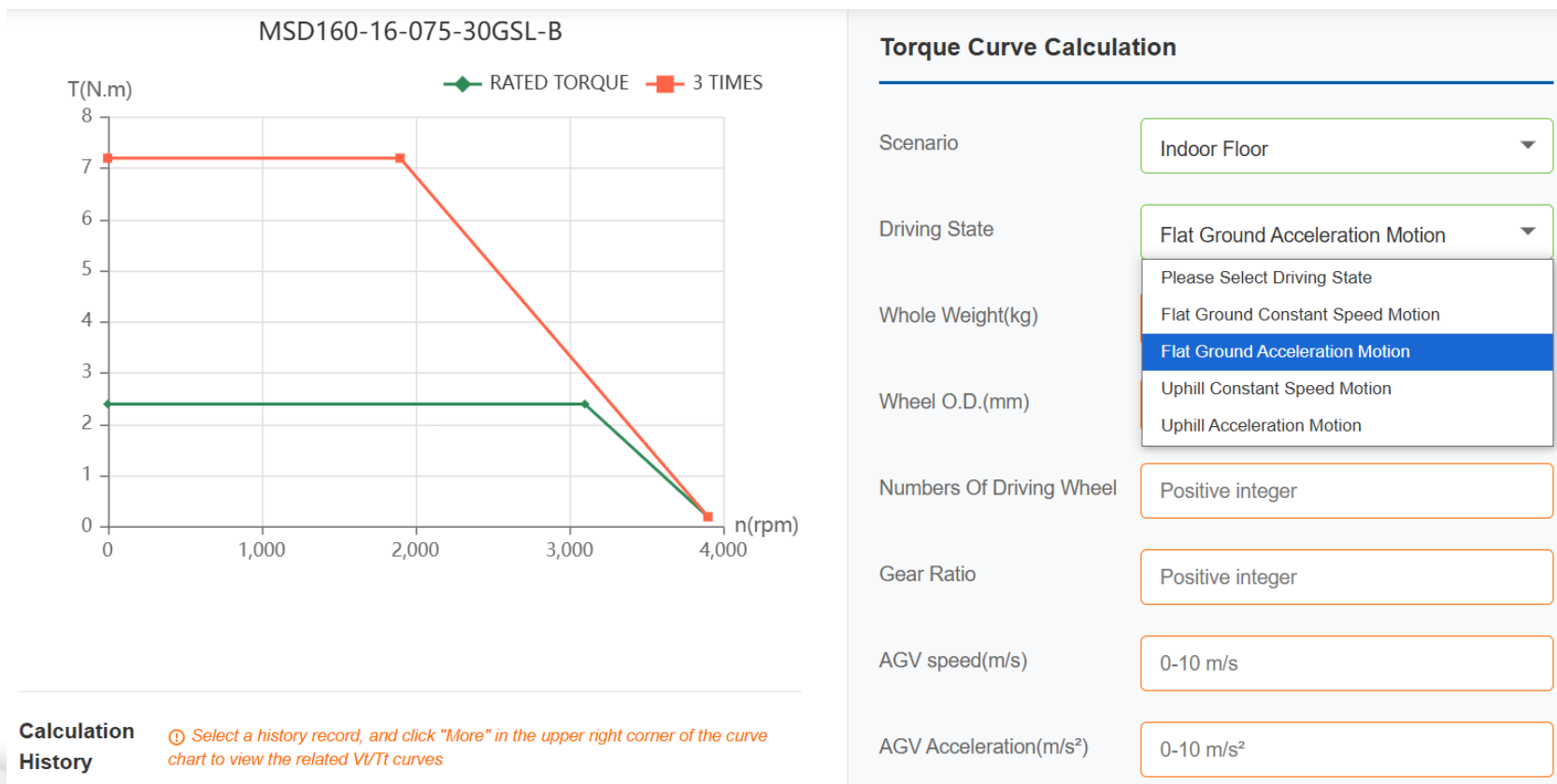
1. Select based on naming rules

1.3.1 Select the scenario based on the actual working conditions. (four scenarios are available.)



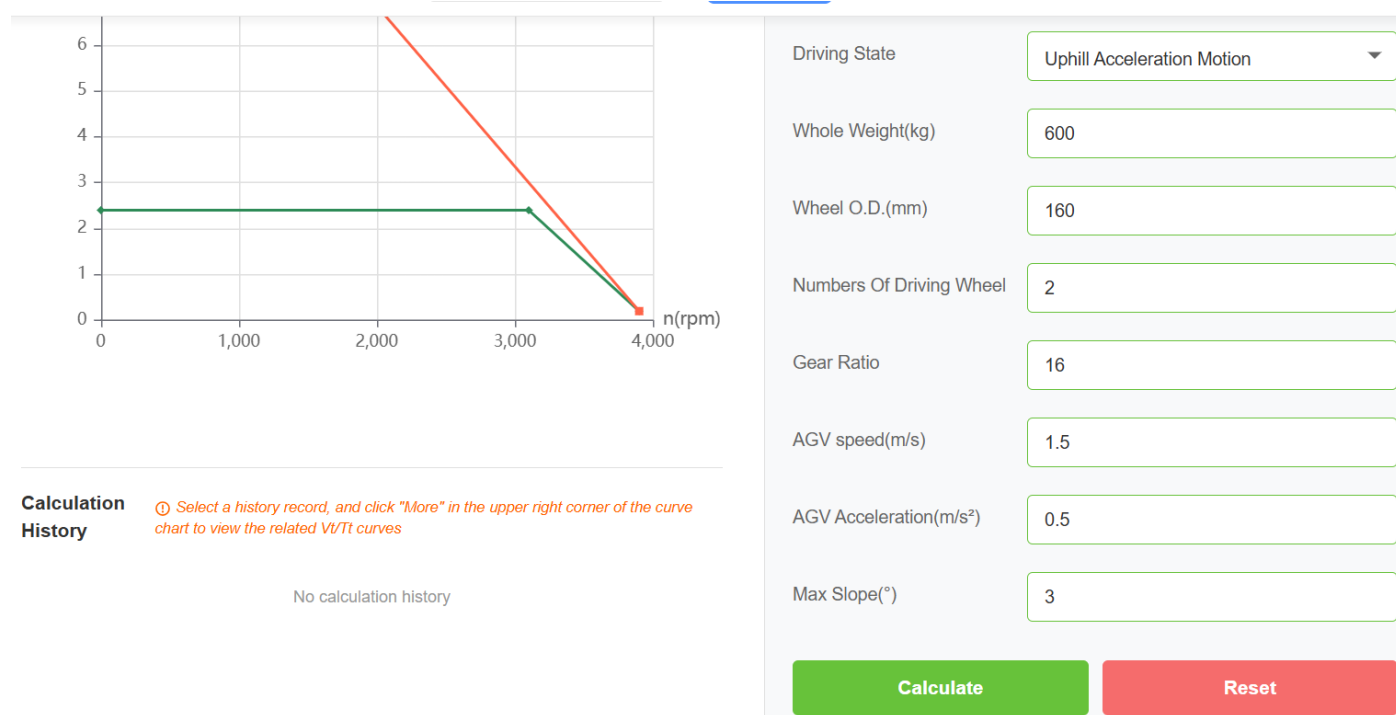
1. Select based on naming rules

1.3.2 Select driving state. (There are four driving states when AGV moves.)



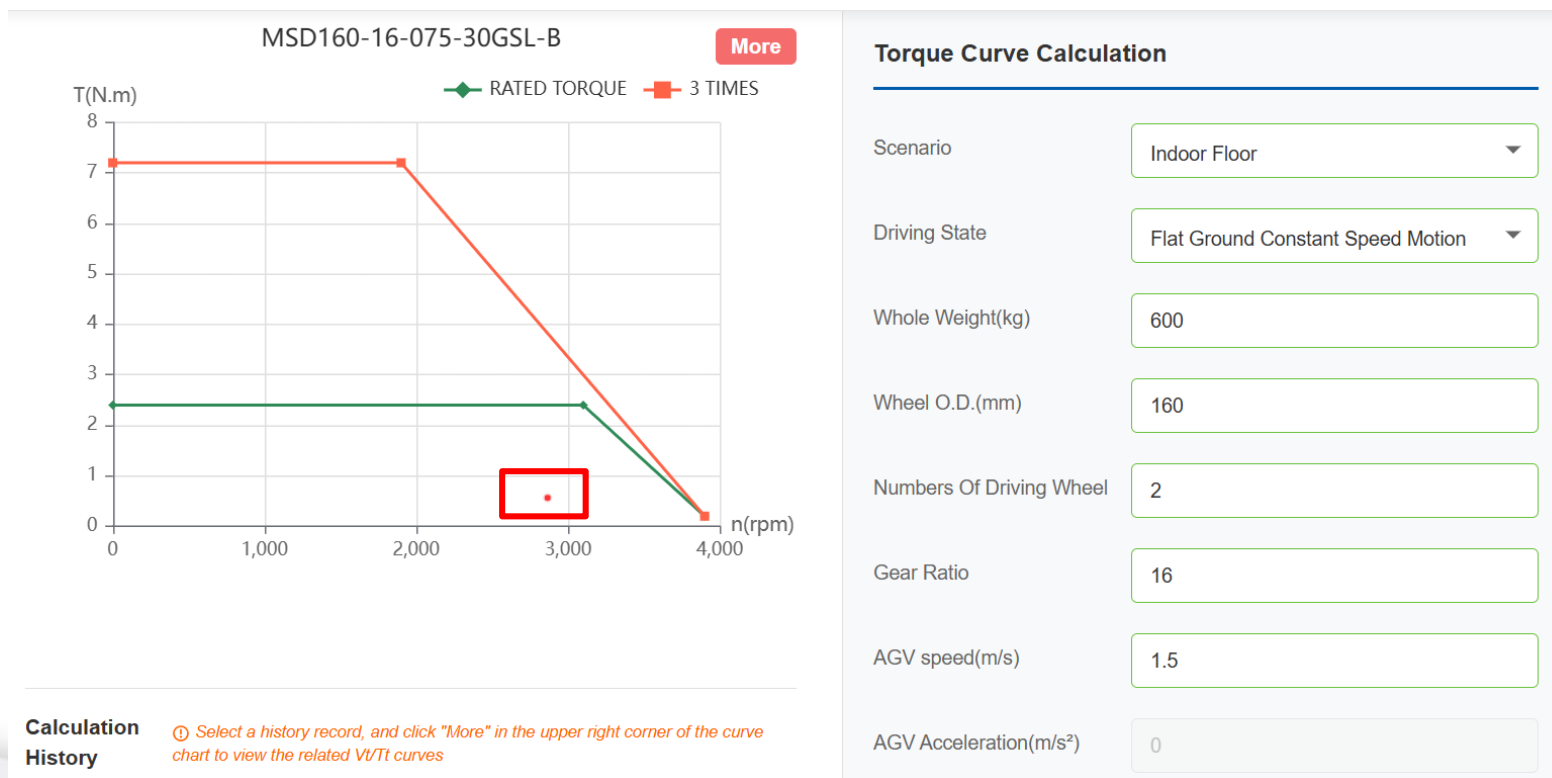
1. Select based on naming rules

1.3.3 Input the corresponding parameters, click "Calculate" to conduct the simulation calculation, then you will obtain the required motor torque and speed under this driving state.



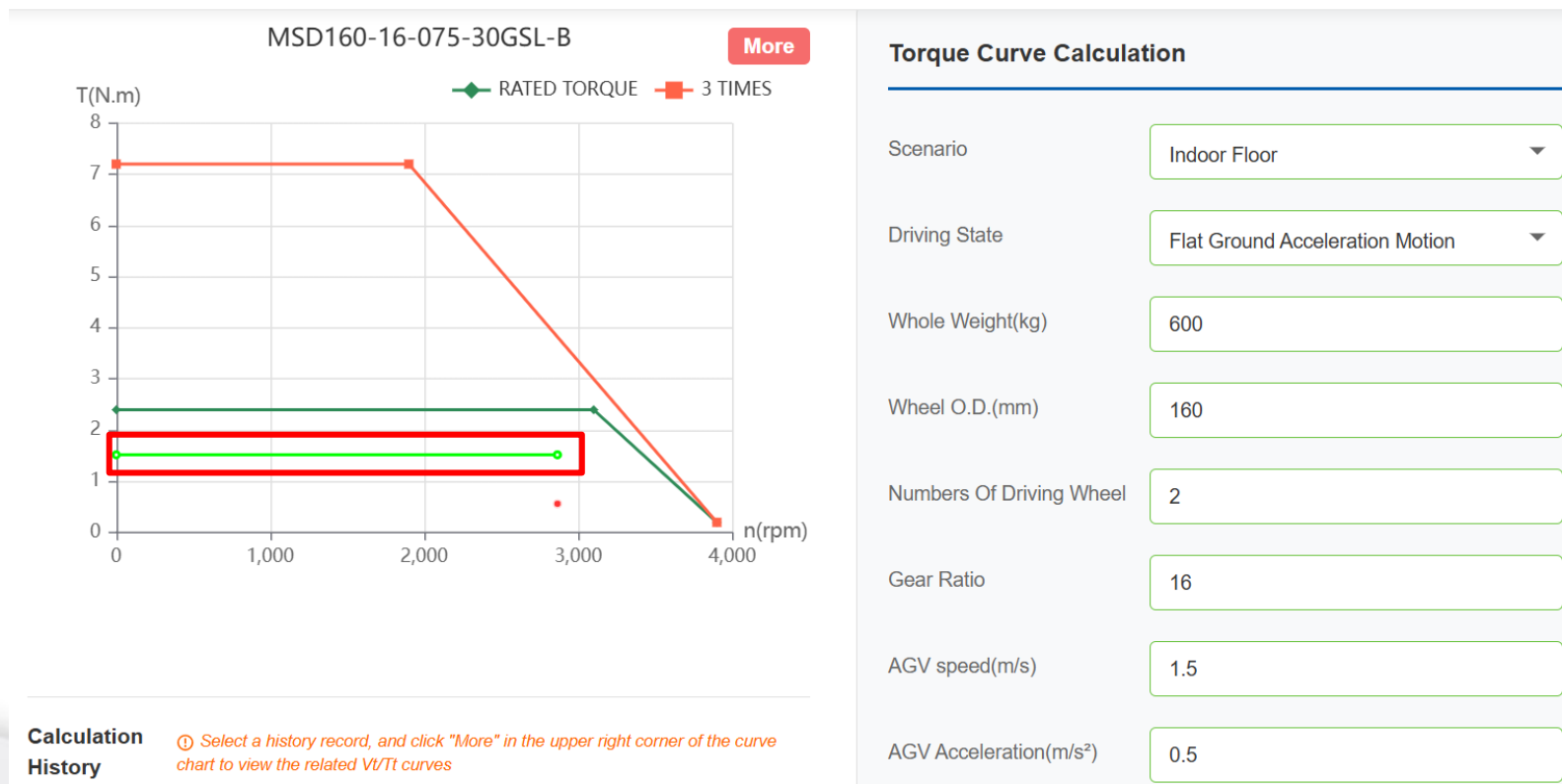
1. Select based on naming rules

Eg. (a) Condition: Indoor floor, flat ground constant speed motion. The simulated motor torque and speed parameters are shown as the red point in the box.



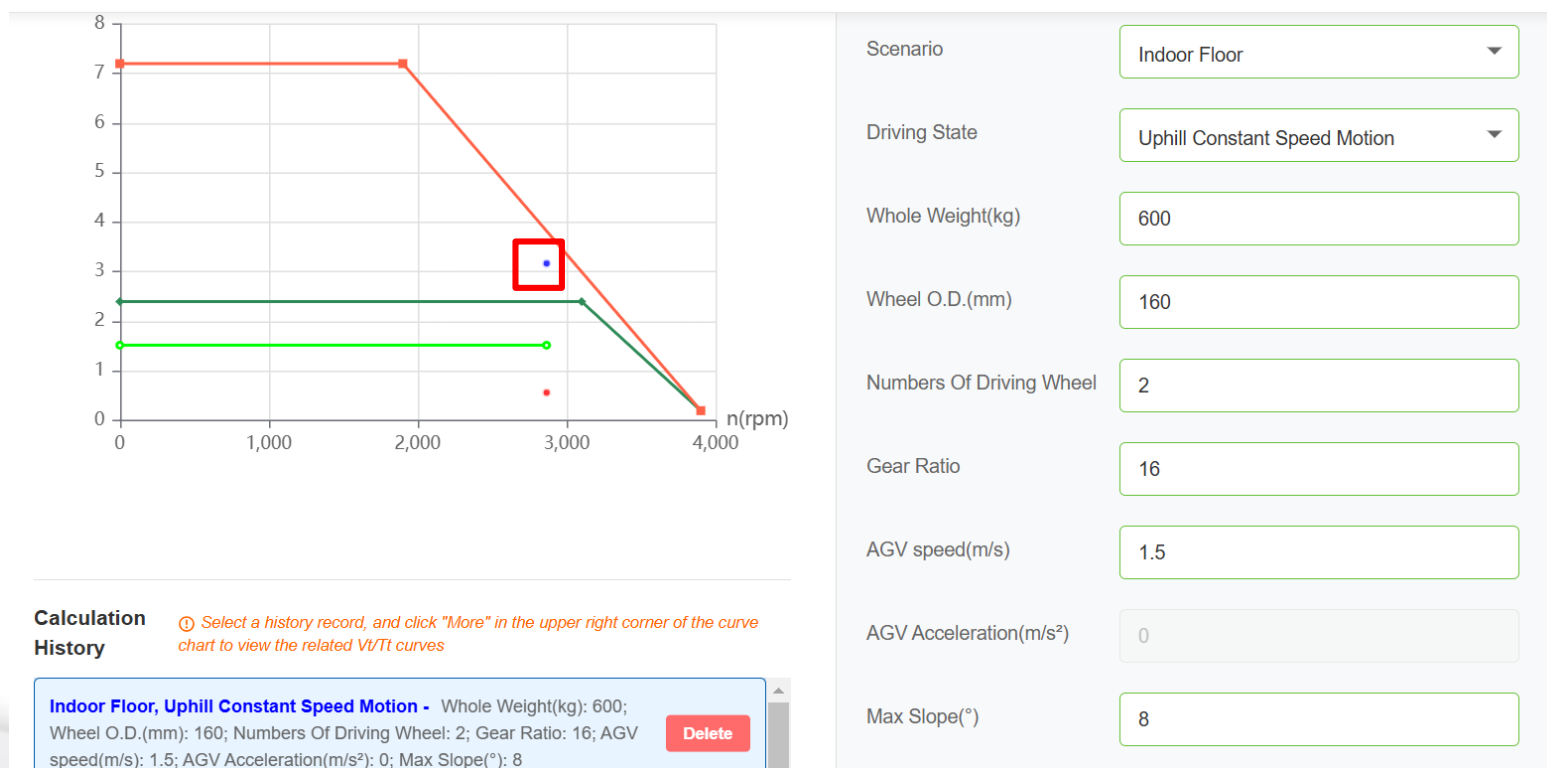
1. Select based on naming rules

(b) Condition: Indoor floor, flat ground acceleration motion. The simulated motor torque and speed parameters are shown as the green curve in the box.



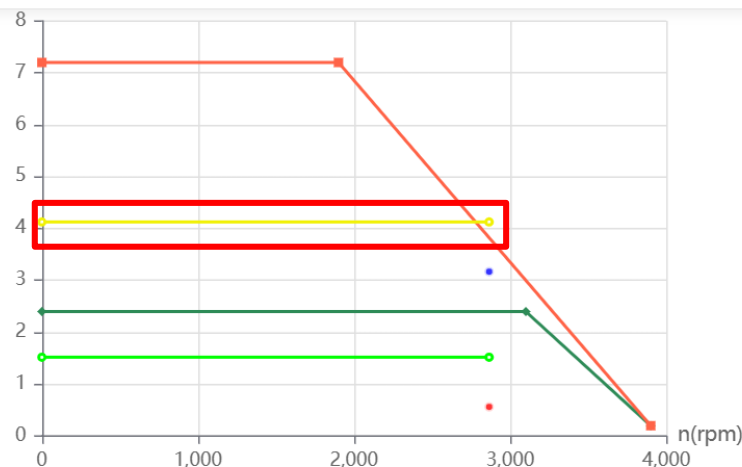
1. Select based on naming rules

(c) Condition: Indoor floor, uphill constant speed motion. The simulated motor torque and speed parameters are shown as the blue point in the box.



1. Select based on naming rules

(d) Condition: Indoor floor, uphill acceleration motion. The simulated motor torque and speed parameters are shown as the yellow curve in the box.



Calculation History

① Select a history record, and click "More" in the upper right corner of the curve chart to view the related Vt/Tt curves

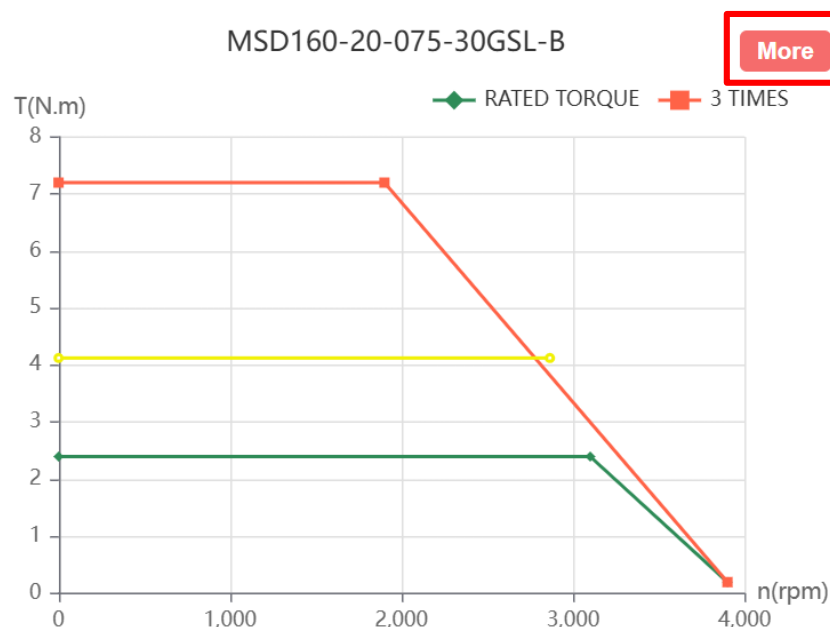
Indoor Floor, Uphill Acceleration Motion - Whole Weight(kg): 600; Wheel O.D.(mm): 160; Numbers Of Driving Wheel: 2; Gear Ratio: 16; AGV speed(m/s): 1.5; AGV Acceleration(m/s²): 0.5; Max Slope(°): 8

Delete

Scenario	Indoor Floor
Driving State	Uphill Acceleration Motion
Whole Weight(kg)	600
Wheel O.D.(mm)	160
Numbers Of Driving Wheel	2
Gear Ratio	16
AGV speed(m/s)	1.5
AGV Acceleration(m/s ²)	0.5
Max Slope(°)	8

1. Select based on naming rules

1.3.4 Click "More" to view the V-t and T-t curves.



Torque Curve Calculation

Scenario	Indoor Floor
Driving State	Uphill Acceleration Motion
Whole Weight(kg)	600
Wheel O.D.(mm)	160
Numbers Of Driving Wheel	2
Gear Ratio	16
AGV speed(m/s)	1.5

1. Select based on naming rules

1.3.4 Click "More" to view the V-t and T-t curves.

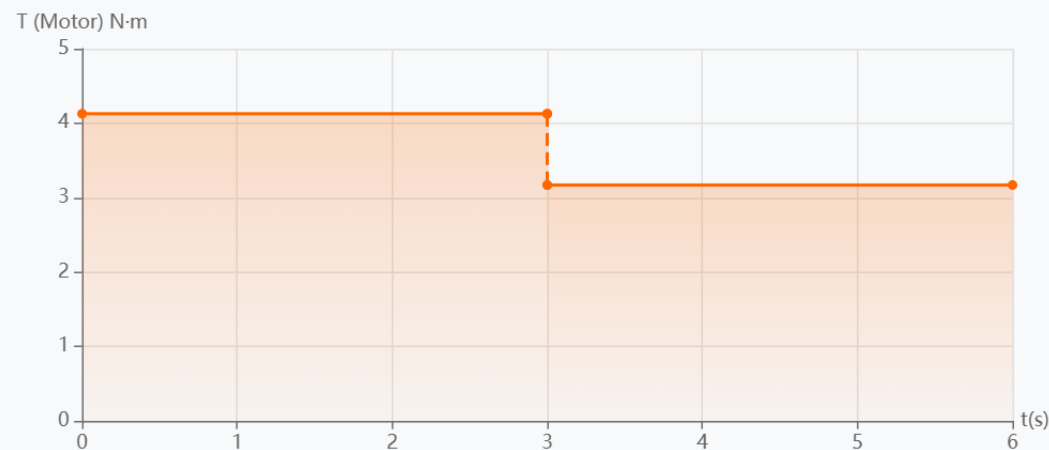
Vt Curve (Slope)

Vt Curve



Tt Curve (Slope)

Tt Curve



1. Select based on naming rules

1.4 Click "Drawings" and download the 2D/3D drawings.

Result

Model	Torque Curve	Drawing	
MSD160-20-075-30GSL-B		2D	3D
MSD160-16-075-30GSL-B		2D	3D
MSD160-32-075-30GSL-N		2D	3D
MSD160-10-075-20GSL-N		2D	3D
MSD160-32-075-30GSL-B		2D	3D
MSD160-16-075-30GSL-N		2D	3D

2. Select based on application requirements

Input the parameters according to the whole weight, rated speed, acceleration, wheel O.D., slope, scenario, and quantity of drive wheel. Click "Calculation to result", and you can quickly select the corresponding model.

2.1 Input the required parameters.

- a) The whole weight is the sum of the load and the AGV's weight, which should be an integer multiple of 10.
- b) The larger load, recommended the smaller acceleration. The acceleration should be selected within the range of 0.2 - 1 m/s².

2. Select based on application requirements

c) The slope of the indoor industrial factory building is generally 3°.

d) The quantity of driving wheel are usually 2. If it is impossible to match the corresponding model, you can increase the quantity of driving wheel and calculate again.

Following Name System

Following Application

Whole Weight (kg):

1000

AGV Rated Speed (m/s):

1

Wheel O.D. (mm):

200

AGV Acceleration (m/s²):

0.5

Max Slope (°):

3

Scenario:

Indoor Floor

Numbers Of Driving Wheel:

2

Calculation to Result

2. Select based on application requirements

2.2 After clicking "Calculation to result", select the corresponding product model as shown below.

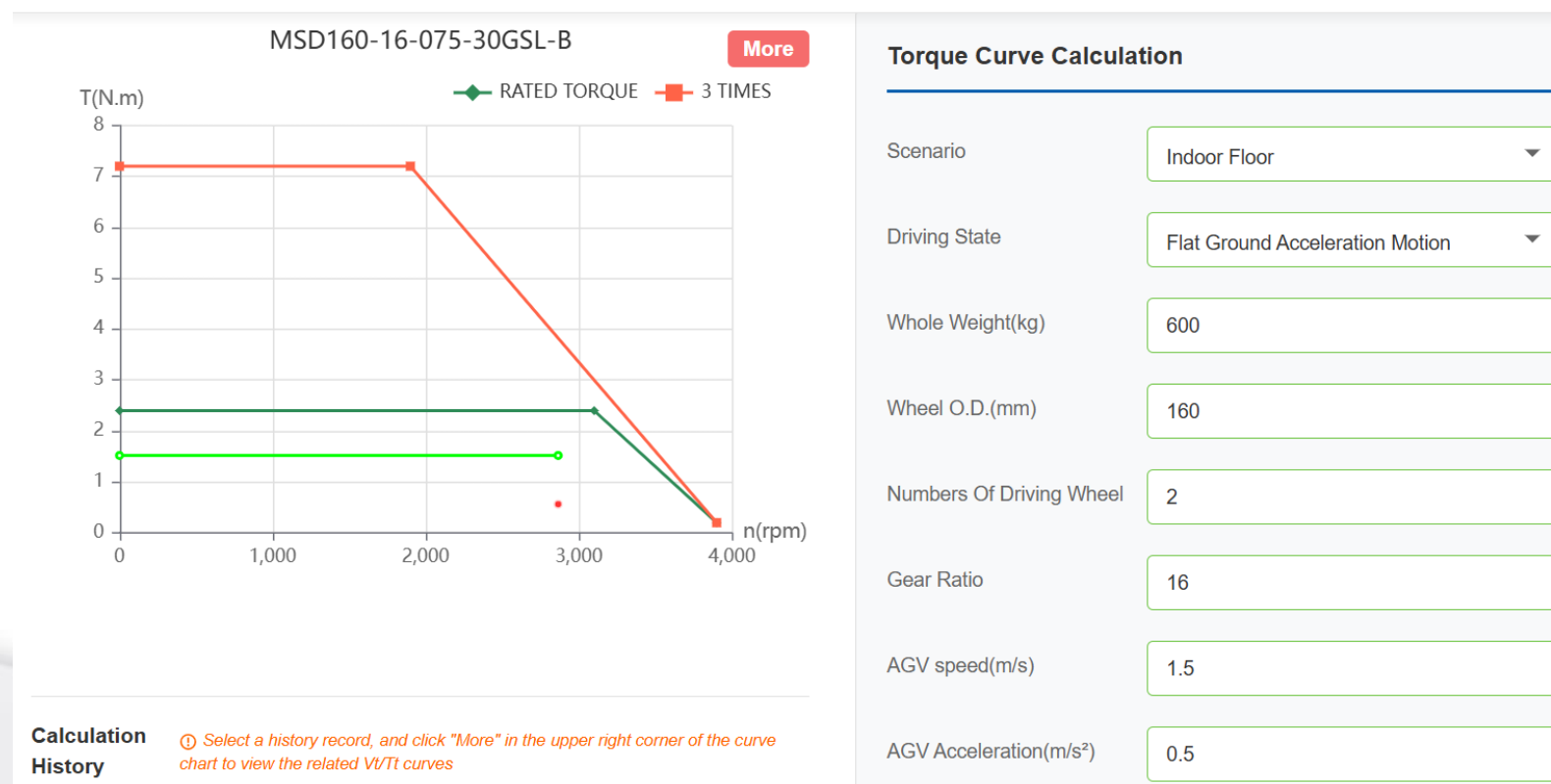
Result

Model	Torque Curve	Drawing	
MSD200-20-150-30GSL-N		2D	3D
MSD200-20-100-30GSL-N		2D	3D
MSD200-20-100-20GSL-B		2D	3D
MSD200-20-100-20GSL-N		2D	3D
MSD200-20-100-30GSL-B		2D	3D
MSD200-32-100-30GSL-N		2D	3D

2. Select based on application requirements

2.3 Click on "Torque Curve" to enter the simulation calculation, which can simulate the motor torque and speed according to different scenarios and driving conditions.

(The method is the same as the simulation calculation steps 3 for Selecting based on naming rules.)



2. Select based on application requirements

2.4 Click "Drawings" and download the 2D/3D drawings.

Result

Model	Torque Curve	Drawing	
MSD200-20-150-30GSL-N		2D	3D
MSD200-20-100-30GSL-N		2D	3D
MSD200-20-100-20GSL-B		2D	3D
MSD200-20-100-20GSL-N		2D	3D
MSD200-20-100-30GSL-B		2D	3D
MSD200-32-100-30GSL-N		2D	3D