High accuracy and high reliability
MEIDEN Chassis Dynamometer System

Chassis dynamometer optimized for light to medium duty vehicle supports testing and R&D achievement.

**Features**

- Emission test, environment test are possible with excellent dynamometer control. High speed and high accuracy dyno control make possible fine front & rear wheel speed synchronizing control and precise inertia simulation.

- Japan, U.S., and EURO, each style of electric inertia simulation verification function is supported. To keep accuracy and reliability of road load simulation when emission mode test.

- Various vehicles are target. From compact car like electric vehicle to medium size vehicle like pick-up truck can be tested.

- Fuel economy & emission test
  - Fully compliant with Japanese, U.S. EPA, and EURO 5, 6 mode.

- General performance test
  - Power performance test is possible with large capacity dynamometer.

- Durability test
  - Catalyst performance loss evaluation after 100,000 miles running is the typical one.

- Line-off investigation
  - Sampling check before shipping at the end of vehicle assembling line.

**Typical applications**

- Emission test
- Environment test
- General performance test
- Durability test
- Line-off investigation
Main components

- **Roll and Dynamometer**
  Dynamometer is located between left and right roll and it saves installation space. Small mechanical loss of rotary bearing can be measured and managed because of the frame floating mechanism. Installation and final checking term at site will be very short because components around roll are equipped on the dynamometer base and be shipped after shop test.

- **Operation desk with bench computer system**
  All unit and component is equipped in the operation desk. All operation, measuring and monitorin work will be carried out through the monitor on the desk.

- **Roll cover**
  Small rollers located front and rear of roll, push out toward center of vehicle tire, and put tire on the right above the roll. The small rollers can lift it up completely until tire does not touch the roll.

- **Vehicle restraint system**
  - Torque box type
  Can be applied to a vehicle which has torque box. It is an easy setting and space saving device.

- **Moving device**
  It can move rear side rolls and dynamometer to the rear tire position for each different wheel base vehicle.

- **Touch panel unit for local operation**
  Moving-device, centering-device, etc. are operated by this touch panel unit. Some measuring value can be displayed on it.

- **Vehicle cooling fan**
  A constant wind speed type or a variable wind speed type can be used. The variable one maintains the speed as a test vehicle speed, and follows it.

- **AC Drive for dynamometer**
  High response and high performance AC drive using high speed and large capacity switching element IGBT.

Vehicle centering device
Small rollers located front and rear of roll raising up from under the pit cover toward center of test vehicle tire and adjust tire position on the right center of roll. It can lift up the tire until tire does not touch the roll completely.

- **Vehicle restraint system**
  - 4poles & chain type
  4WD vehicle is tied up by chains to 4 poles located front and rear of the vehicle. Rear side poles and chains will be used for 2WD vehicle as a safety device against rush outing the vehicle.

- **Tire restraint device**
  It restrains un-driven tire of 2WD vehicle. The tire is tied down by belt to the tire stoppers at front and rear of it.

- **Roll cover**
  Small rollers at front and rear of roll, push out toward center of vehicle tire, and put tire on the right above the roll. The small rollers can lift it up completely until tire does not touch the roll.

- **Vehicle cooling fan**
  A constant wind speed type or a variable wind speed type can be used. The variable one maintains the speed as a test vehicle speed, and follows it.

- **AC Drive for dynamometer**
  High response and high performance AC drive using high speed and large capacity switching element IGBT.
### Target vehicle and ratings

**Human like driving.** It’s durable cable for button type ignition, star-matich, and padle shift. for long time durability test. Applicable type

<table>
<thead>
<tr>
<th>PSG. Car*</th>
<th>Passenger Car</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. speed</td>
<td>250km/h</td>
</tr>
<tr>
<td>Weight</td>
<td>450 ~ 3,200kg</td>
</tr>
<tr>
<td>Tread</td>
<td>1,850 ~ 1,700mm</td>
</tr>
<tr>
<td>Tire width</td>
<td>130 ~ 205mm</td>
</tr>
<tr>
<td>Wheelbase</td>
<td>470 ~ 400mm</td>
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</tbody>
</table>

### Roll and dynamometer

<table>
<thead>
<tr>
<th>Model</th>
<th>Model II</th>
<th>Model M</th>
<th>Model Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamometer capacity (1 min. short time rating)</td>
<td>150 / 110kW</td>
<td>150 / 110kW</td>
<td>150 / 110kW</td>
</tr>
<tr>
<td>Speed</td>
<td>100km/h</td>
<td>100km/h</td>
<td>100km/h</td>
</tr>
<tr>
<td>Tractive force at roll surface</td>
<td>5,400 / 3,906N</td>
<td>5,400 / 3,906N</td>
<td>5,400 / 3,906N</td>
</tr>
<tr>
<td>Roll dimension</td>
<td>ø1,219.2mm</td>
<td>ø1,219.2mm</td>
<td>ø1,219.2mm</td>
</tr>
</tbody>
</table>

### Vehicle assist function

- **US06 load reduction function**
  - On 2WD chassis dynamometer, dynamometer reduces load to assist power feed back braking of EV when it is decelerating.

### Optional item

- **Driving Robot, seat mount type** Setting up on a seat in 3 minutes. Human like driving. It’s durable for long time durability test. Applicable for button type ignition, star-matching, and paddle shift.

### Tire cooling fan

- **Cool down tire to prevent over heat or bursting.** One speed type or variable speed type is possible.

### Slate PC for remote operation

- **Full operation is possible from anywhere in the covering area.**