



# MICHIGAN CUSTOM MACHINES, INC.

**Product Highlight:**  
**BEARING DURABILITY**

22750 Heslip Drive  
Novi, MI 48375 • USA  
(248) 347-7900  
[www.mcm1.com](http://www.mcm1.com)

Building D, No. 81 Meiyue Road  
Shanghai 200131 • CHINA  
Ph: 011-86-21-58682809

Suite 14 Fairfax House  
Cromwell Business Park  
Chipping Norton Oxon, Ox7 5SR • UK  
Ph: +44-0-1608-695938

The MCM bearing durability machine is used to validate durability of wheel hub bearings as well as perform wheel hub fretting tests. This two-station machine loads the bearing in the axial and radial directions while spinning the bearing for an extended period of time.

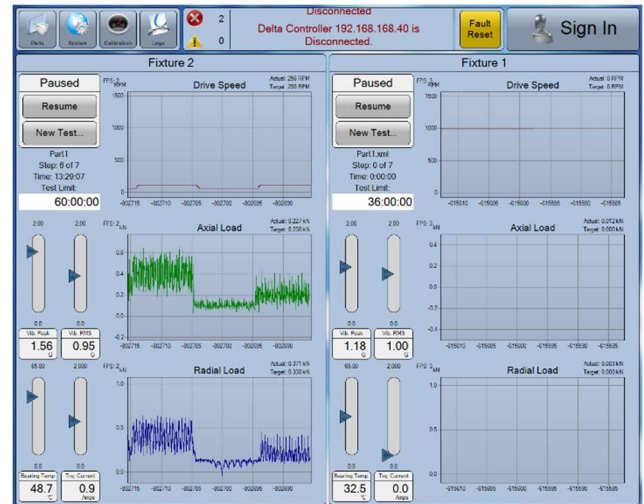


## Background

Wheel bearings see a variety of loads in the axial and radial directions. It is important for the bearing manufacturer to have a way to load their bearing for all the possible cases that it may see over its lifetime and have the ability to evaluate, or validate its proper operation. In addition to a dynamic test where the axle is rotating, this machine can perform a fretting test that simulates pulsed load on a static wheel hub to simulate a shipping scenario.

## Machine Features:

- 2 Test heads with protective cages
- Ability to pause and resume cycle for inspection
- Programmable cycles for loads, speeds, and durations
- Machine logs high speed data for later referral
- Bearing vibration is monitored and machine will suspend test based on this
- Live load graphs are displayed at all times
- Universal mounting is designed to accept many different fixtures
- Machine can send SMS messages to operator in the event of a failure



## Ease of Use

We design our touch interface to be intuitive to use. The display always shows what you need to know and if you want to know more detail, this is possible with the touch of a finger. The load is generated by hydraulic power and controlled by independent servo valves that are closed loop to load cells on the appropriate axis. A manual pendant in the test area allows manual, low force jogging of the actuators for initially setting up the test.

## Specifications

Feature	Description	Range
Axial Force	Force exerted on spindle	+/-25 KN
Radial Force	Force exerted on bearing race	0-25 KN
Drive Speed	Drive spindle rotation speed	0-5000 RPM
Phase Duration	Duration of a sub cycle	0-12 Months
Cycle Duration	Total Duration of Testing	0-5 Years
Alarms	Force Exceeded (axial/radial) Excessive Vibration Drive speed out of range Excessive torque Motion Travel (axial/radial) Hydraulic temperature Hydraulic Level Hydraulic Filter Perimeter Breach	Programmable Software Limit Programmable Software Limit Programmable Software Limit Programmable Software Limit Actuator end of travel Fixed Programmable Fixed 2 stage warning/alarm Gate switch
Sampling Rate		500 Hz

Please contact us at [sales@mcm1.com](mailto:sales@mcm1.com) for more information.