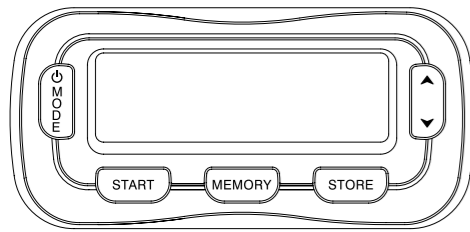


MATRIX

Owner's Manual



INTRODUCTION

Thank you for purchasing the MATRIX developed by KAT Inc. MATRIX is specially designed to be a simple-to-use addition to any vehicle with battery operation and a highly sophisticated processing system.

We are pleased to have you as a valued customer and hope you will be delighted with your MATRIX.

This manual provides all the information you need for putting the MATRIX to work for you.

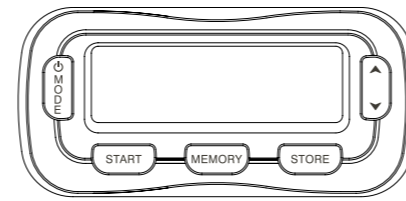
WARNING: Always obey all local and federal laws when using this device. This device is not intended for use on the street or highway. Use only in designated areas with care and do not take your eyes off the road. MATRIX records the results after the run. We are not responsible for any accident or injuries that occur while using this device. Drive safely.

MATRIX is designed as a test device to measure performance of the vehicle. Please use it for that purpose only.

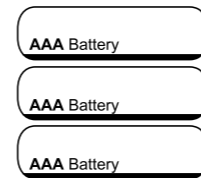
1

MATRIX

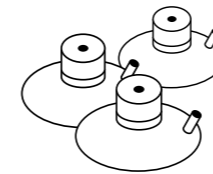
WHAT'S IN THE PACKAGE



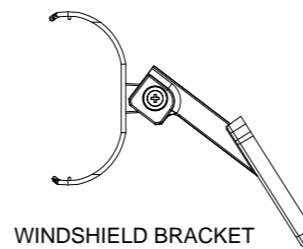
MATRIX DEVICE



3 AAA BATTERIES



3 SUCTION CUPS



WINDSHIELD BRACKET

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MATRIX

INSTALLATION

Mount MATRIX on the windshield centered between driver and passenger. MATRIX must be positioned straight across the vehicle. **Do not angle the device toward the driver.** The front of the device does not have to be perfectly level. This device automatically compensates for mounting angles up to 30 degrees from level.

Adjust the device on its windshield bracket until it is approximately level. It is important that the device stays in position during use. If the device moves too easily, tighten the screw in the bracket or attach suction cups firmly.

INSERT THE BATTERIES

The device is operated from three AAA batteries with a capacity of approximately 1,000mA hours. Battery life is approximately 40 hours with backlight.

Open the battery door on the back of the MATRIX and insert three AAA batteries.

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MATRIX

HOW DOES IT WORK?

The MATRIX measures the performance of your vehicle by sensing acceleration forces. It uses a three-axis accelerometer to measure acceleration. This digital three-axis accelerometer sensor tracks your vehicle's acceleration and concerning forces. This device analyzes data and calculates corrected G-Forces for the G Meter operation, speed and distance data.

The result is the most accurate and it is the first device with battery operation.

WHAT CAN IT MEASURE?

MATRIX can measure the followings:

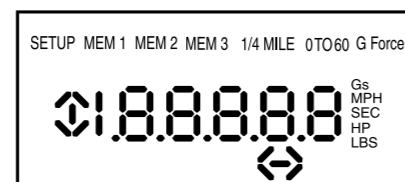
1. Time to go from 0 to 60MPH
2. Speed at the end of 1/4 mile
3. G-Force
4. Peak and Average Horsepower

4

MATRIX

OPERATION

DISPLAY WITH EVERYTHING ILLUMINATED



POWER ON/OFF

Press the MODE button to turn the Matrix ON. It displays each mode and G-Force mode when ready to start.

Press MODE button for two (2) seconds to turn the Matrix OFF.

SET-UP

If this is the first time the unit is powered since installation or if the orientation has changed, please move the vehicle to a level place and press START button to calibrate the three-axis accelerometer.

To accurately measure horsepower, the correct vehicle weight and the correction factor for the vehicle must also be entered to allow a horsepower calculation. To enter set-up mode, press MEMORY button for three (3) seconds until SETUP shows in the display.

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MATRIX

Operation

• Vehicle Weight

You must enter the weight of your vehicle. This information is available in your vehicle's manual. You should add the weight of the driver, passengers and cargo plus any additional equipment added to the vehicle.

Press the UP or DOWN button until the correct weight is shown. Holding either button for 1 second causes the weight to change rapidly. Press STORE to store the setting.



• Horsepower Factor

This is a correction factor you can set for an approximate conversion from wheel horsepower to engine horsepower. Factory default is 1.00.

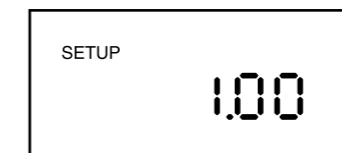
The Matrix is affected by drive train losses, rolling resistance and aerodynamic drag which determine the vehicle's performance. Manufacturers' ratings list a higher engine horsepower which is not reduced by these other real-world factor so you may need to increase the wheel horsepower readings to approximately correlate to higher engine horsepower.

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MATRIX

Operation

Display flashes previously set value. Press the up and down buttons until the vehicle correction shows in the display. Press STORE to store the setting.



• Horsepower Speed Range

You must select the speed range for horsepower calculations. The Matrix will calculate the average horsepower over this range and the peak horsepower within this range.

The setup item HP MIN SPEED sets the speed that the Matrix starts measuring horsepower.

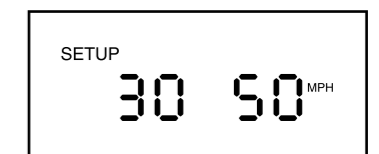
The setup item HP MAX SPEED sets the speed that the Matrix stops measuring horsepower.

Display flashes previously set value. Set the minimum speed for the average horsepower measurement by pressing the UP or DOWN buttons. Press STORE button to store the result. Set the maximum speed for the average horsepower measurement by pressing the UP or DOWN buttons. Press STORE button to store the result

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MATRIX

Operation

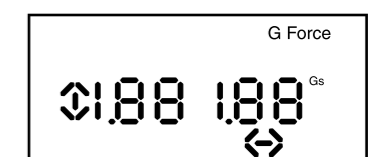


The maximum of the HP MIN Speed cannot exceed the minimum of the HP MAX speed.

SET-UP ITEMS

	MIN	MAX	DEFAULT	STEP
WEIGHT	25	16000	2000	25
HP FACTOR	1.00	2.00	1.00	0.01
HP MIN SPEED	10	60	30	1
HP MAX SPEED	30	100	50	1

Unit enters G-Force mode after setup and the display shows the current G-Force reading. G-Force can be zeroed at any time by pressing START button.



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MATRIX



SERVICE

If you wish to return the Matrix, please contact KAT Inc.
Phone: (915) 533-1335 Fax: (915) 533-1344

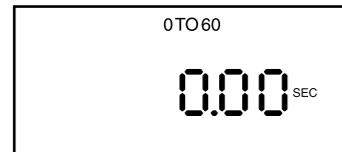
OPERATION

Six push buttons control operation. The MODE button cycles through the operational modes, 1/4 MILE, 0 TO 60, and G-Force. The MEMORY button selects memory locations containing results of tests. STORE button causes the current test results to overwrite the location of a selected memory location. The UP and DOWN buttons scroll data from memory or test results and change setup data. The START button zeros the three-axis accelerometer readings.

Your car must be stopped before you perform a test.

0 to 60

Pressing the MODE key until the display shows:



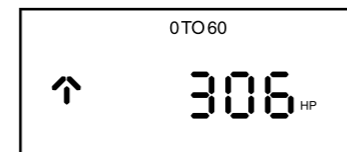
The test begins as soon as the vehicle starts moving and the display shows the elapsed time until 60 MPH is reached. Then it shows the time to reach 60 MPH



Pressing the UP or DOWN button once causes the display to show average horsepower between the two speeds chosen in setup.

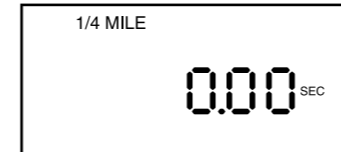


Pressing the UP or DOWN button again shows the peak horsepower reached during the test.

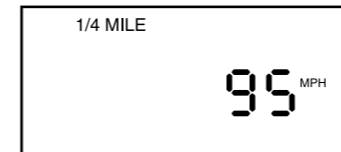


1/4 MILE

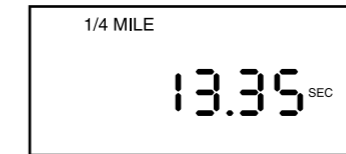
Press the MODE button until the display shows:



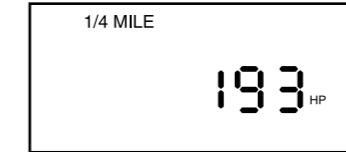
The test begins as soon as the vehicle starts moving and the display shows current elapsed time. At the end of 1/4 mile, the speed reached is displayed.



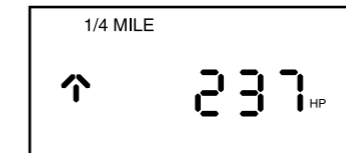
Pressing the UP or DOWN button causes the display to show the time for 1/4 mile.



Pressing the UP or DOWN button causes the display to show average horsepower between the two speeds chosen in setup.



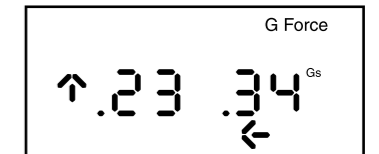
Pressing the UP or DOWN button shows the peak horsepower reached during the test.



G-FORCE

Pressing the MODE button until the display shows G Force.

The display shows the number of horizontal and forward Gs. The right indicator is sideways acceleration with the arrow indicating direction. The left is forward acceleration. The arrow points up when speed is increasing and down when speed is decreasing.



MODE BUTTON

- Press MODE button to power the unit on. Press two (2) seconds to power the unit off.

- You can choose the mode you want by pressing this MODE button when that mode is displayed: 1/4Mile, 0-60Mile, G-Force.

START BUTTON

Press START button at each mode to perform testing. Start when the display is ready.

MEMORY BUTTON

Press the MEMORY button any time a test is not running until the desired memory location is shown in the display. Press the UP and DOWN keys to scroll through the test results. Press START or MODE buttons to exit the MEMORY mode.

Press MEMORY button for three (3) seconds to enter set-up mode.

STORE BUTTON

At the end of any test, press the MEMORY button until the desired memory location, MEM 1, MEM 2 or MEM 3 shows in the display. Then press STORE button to overwrite the display with the new information. The results of the test are stored in memory.

UP AND DOWN BUTTONS

Press UP or DOWN buttons to review data from last tests.

Press DOWN button for five (5) seconds to enter Factory Reset Mode.

FACTORY RESET

Press DOWN button for five (5) seconds to enter Factory Reset mode and press STORE button to reset all data to factory default.

- Clear all memories
- Set-up items
- Calibration data

Press MEMORY button to cancel the factory reset.

CALIBRATION

Calibration is performed automatically when you press START button

MEMORY

Setup and test results are stored in memory so data is retained when power is OFF or batteries changed.

DISPLAY BACKLIGHT

The backlight is turned on when any button is pushed and remains on for 1 minute unless a test is being run, then it stays on until 1 minute after the test is completed. Each button push resets the 1 minute timer.

AUTO POWER OFF

The Matrix will automatically shut off the power after one hour if no buttons are pressed.

The Matrix will give warning beep before power off. Press any buttons to cancel auto power off.

Low Battery Warning

The Matrix will give low battery warning from the moment when there is about two hours of remaining battery life.

ERROR MESSAGES

- ERROR 1: Speed decrease during testing
- ERROR 2: Tilted more than 30 degrees during calibration
- ERROR 3: Vibration during calibration

LIMITED WARRANTY

The manufacturer warrants your Matrix against all defects in materials and workmanship for a period of one (1) year from the date of the original purchase, subject to the following terms and conditions: The sole responsibility of the manufacturer under this Warranty is limited to either repair or, at the option of the manufacturer, replacement of the Matrix. There are no expressed or implied warranties, including those of fitness for a particular purpose of merchantability, which extend beyond the face hereof. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.