

# VG MOTOR CHECKER

FOR EXPERT USE ONLY

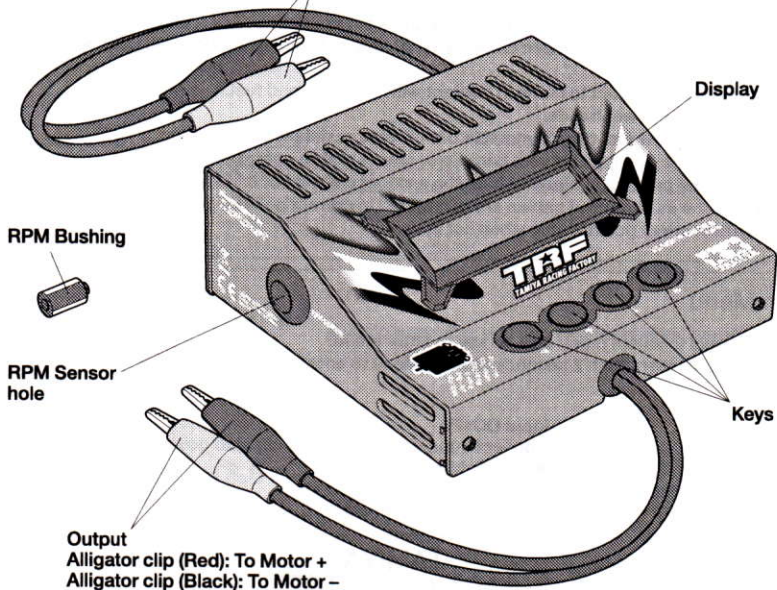
Manufactured by *Muchmore*™ TAMIYA

## Part name

Input (DC12V)

Alligator clip (Red): To Power Supply +

Alligator clip (Black): To Power Supply -



Display

RPM Bushing

RPM Sensor  
hole

Keys

Output

Alligator clip (Red): To Motor +

Alligator clip (Black): To Motor -

Thank you for purchasing the VG Motor Checker. This motor checker comes with the new black LCD and features a new system that is compatible with small motors such as TamTech-Gear motors.

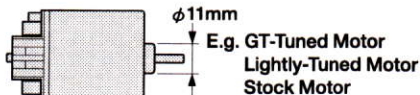
## 《Features》

- Motor Run
- Step Test
- Quick Test
- Standard Break-In
- Pulse Break-In
- 99 Step Cycles
- 20 Data Memory
- Displays RPM, Voltage, and Current
- Black LCD

## 《Specifications》

- Dimensions: 124x114x47mm
- Weight: 470g
- Input Voltage: 10.5-17.0V
- Output Voltage: 0.1-8.0V
- Max. Continuous current: 25A
- Pulse speed: 5 steps
- Motor RPM speed: 5 steps (adjustable)
- Cooling: Temperature controlled fan

## 《Compatible motors》



## Caution

Keep out of reach of small children. This product is intended for users over 14 years of age.

- The VG Motor Checker is designed to use DC12V inputs and cannot be used with 100V outlets.
- Use for the purpose of running motors only.
- Securely fix motor during operation.
- During Motor Break-In, use a fan to cool the motor.
- The VG Motor Checker is recommended for use with Item 42136 VG 24A Stable Power Supply which has adjustable voltage output.
- Do not leave the VG Motor Checker unsupervised during operation.
- Do not disassemble or modify.
- Do not drop the product and avoid strong shocks or impacts.
- Do not pull the power cable when carrying the product. Do not excessively bend, or place weights on the power cable.
- Do not allow the product to come in contact with water, oil and fuel.
- Do not handle with wet hands.
- Do not use this product near flammable or non-heat resistant objects.
- Do not cover the cooling slits with carpets or towels during operation.
- Do not use the product in places where the product will get hot such as under direct sunlight.
- Make sure the input/output cables are connected in correct polarity (Red: +, Black :-)
- Always disconnect power cable when not in use.

## Main Menu

Use   keys to select menu and  key to enter menu.

Press  key for more than 2 seconds at Main Menu to enter Setup.

Input DC12V  
Connect input cables (alligator clips) to power source.  
★ Ensure correct polarity.




Display

**TAMIYA  
RACING FACTORY**



Main Menu

-  1. Motor Run
- 2. Step - Test
- 3. Break In
- 4. Recall Data
- 5. Delete Data
- 6. Quick Test

Setup Menu  
(Page 13)



Press +2  
seconds.



Go to  
selected menu

Mode menu  
(Page 14-20)



 denotes selected mode.

## Setup Menu

### Key Operation

- ◀ Setup menu change,  
+2 seconds: Return to Main Menu
- ▼ ▲ Value change, ON/OFF
- ▶ Move cursor

1. Motor Run  
2. Step - Test

Main Menu

↓ ◀ Press +2 seconds.

\* SetupMenu V3.0 \*  
Motor Spd UP : 1

Adjust the speed of motor starting speed.  
(1 is the slowest and 5 is the fastest acceleration mode.)  
If you use less than 12V 15A power supply, set value at 1.

↓ ◀

\* SetupMenu V3.0 \*  
M-RUN SAVE : ON

▼ ▲ ON / OFF  
If you choose On, you can save data after every Motor Run.

↓ ◀

\* SetupMenu V3.0 \*  
Step-T SAVE : ON

If you choose On, you can save data after every Step-Test.

↓ ◀

\* SetupMenu V3.0 \*  
Hook-up : ON

If you choose Off, the motor checker will not give "Hook up motor!" error message, and current will keep flowing even if the output cables are disconnected from the motor.

↓ ◀

\* SetupMenu V3.0 \*  
Sound Lev. : 0

You can select button sound. 1-5 are single sound, 6-9 are double sound.

↓ ◀

\* SetupMenu V3.0 \*  
Name : RACING FACT

Name can be changed.

↓ ◀ Press +2 seconds.

1. Motor Run  
2. Step - Test

Main Menu

# 1. Motor Run

## Key Operation

◀ Back

▼ ▲ Up, Down

▶ +1 seconds: Return to Main Menu

❖ 1. Motor Run  
2. Step - Test

Main Menu



0.00 0.00 0  
Set Voltage : 2.0

Top Menu

▼ ▲ Set voltage (0.1-8.0V).



0.00 0.00 0  
Set Voltage : 3.0

▶ Starts Motor Run



Voltage (V) Ampere (A) RPM

3.00 4.08 0  
00:00:03 13.80

Displayed data during Motor Run

Runtime

Input voltage

Voltage (V) Ampere (A) RPM

3.3 4.08 0  
00:00:03 13.80

▼ ▲ Voltage can be changed during Motor Run (0.1-8.0V).

Runtime

Input voltage



▶ Stops Motor Run

3.00 4.08 0  
Save : N, Data : No. \*

This will be shown if you set "Save Data: On" at Setup Menu (M-RUN SAVE: ON).

Decide Yes (Y) or No (N), then select where to save the data (No.0-9).

You can check saved data at 「4. Recall Data mode」.



0.00 0.00 0  
Set Voltage : 3.0

Top Menu



Main Menu

## Save Data

If you set "Save Data: On" at Setup Menu (M-RUN SAVE: ON, Step-T SAVE: ON), the motor checker will show below message after every Motor Run or Step-Test. This will not be shown if you set "Save Data: Off" at Setup Menu.

3.00	4.08	0
Save : N,	Data : No.	*

Select Yes(Y) or No (N) with ▼ ▲ keys.



3.00	4.08	0
Save : Y,	Data : No.	*

Select where to save the data (No.0-9).

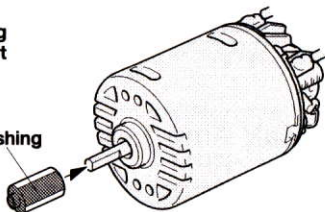
## RPM Checking

Securely put RPM bushing onto motor shaft when checking RPM. First, put your motor into RPM sensor hole, then start your motor.

★Muchmore's Motor Mate (motor stand) is required for checking Type 540 motors.

★Not compatible with TamTech-Gear motors.

RPM Bushing



Voltage (V)	Ampere (A)	RPM
3.00	4.08	0
00:00:03	13.80	

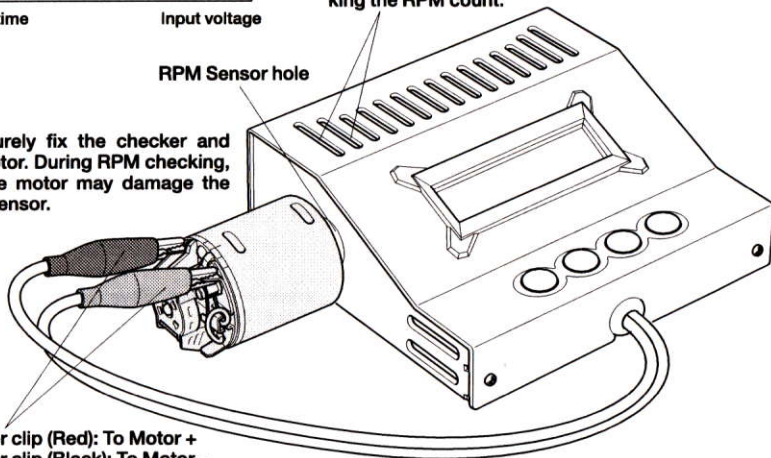
Runtime

Input voltage

★Avoid strong lights. Strong lights going into the checker via the slits may affect the precision of checking the RPM count.

RPM Sensor hole

★Securely fix the checker and the motor. During RPM checking, a loose motor may damage the RPM sensor.



Output

Alligator clip (Red): To Motor +  
Alligator clip (Black): To Motor -

★Disconnect output cables to stop RPM checking.

## 2. Step-Test

2. Step - Test  
3. Break In

Main Menu

### Key Operation

- ◀ Return to Main Menu, Back
- ▼ ▲ 6-cell mode or 4-cell mode
- ▶ Motor start, Forward

Ready to test!  
6cell mode

Top Menu

- ▼ ▲ Select 6-cell or 4-cell test mode.

★Put RPM Bushing onto motor shaft and put your motor into RPM sensor hole.

▶ Start motor

Testing   
Remain Time : 19

Displayed data during test

Ampere (A)

Peak Amp : 12.63  
Max RPM : 51120

Maximum consumed current at motor starting

Maximum RPM at 7.2V (6-cell mode)/4.8V (4-cell mode)

RPM

1.2v	2.4v	3.6v
4.8v	6.0v	7.2v

Voltages at each step (6-cell/4-cell)

4.8	5.2	5.3
5.5	5.6	6.0

Consumed current at each step (6-cell/4-cell)

6Step AVE Amp  
5.40 A

Average current

6Step AVE Amp  
Save : N, Data : No. \*

This will be shown if you set "Save Data: On" at Setup Menu (Step-T SAVE: ON).  
Decide Yes (Y) or No (N), then select where to save the data (No.0-9).  
You can check saved data at 「4. Recall Data mode」.

Ready to test!  
6cell mode

Top Menu

### 3. Break-In

3. Break In  
4. Recall Data

Main Menu

#### Key Operation

- ◀ Return to Main Menu, Back
- ▼ ▲ Voltage setting
- ▶ Motor start/stop, Move cursor



#### Standard Break-In

This mode runs motor at constant voltage.

★Voltage can be adjusted during Standard Break-In mode.

Set the lowest voltage.

Set the highest voltage equal to the lowest voltage.

This mark will appear if the lowest and the highest voltages are set equally.

L:3.0 H:3.0 PL:\*  
T:1m D:1m C:1

Set the running time (1-99 min.).

Set the delay time (1-99 min.).

Set the cycle time (1-99 times).

#### Pulse Break-In

This mode runs the motor between the set lowest and highest voltages.

★Pulse speed can be adjusted.

Set the lowest voltage.

Set the highest voltage. The highest voltage must be at least 1V higher than the lowest.

Set pulse speed (1 is the slowest, 5 is the fastest).

L:3.0 H:4.0 PL:1  
T:2m D:1m C:2

Set the running time (1-99 min.).

Set the delay time (1-99 min.).

Set the cycle time (1-99 times).

#### Break-In example

If you set values as shown below, the motor will run from 3.0-4.0V with pulse speed 1 in the following pattern. 2 minutes run - 1 minute delay - 2 minutes run, then finish.

L:3.0 H:4.0 PL:1  
T:2m D:1m C:2

0.00 0.00 0  
D:00:58 Cycle:02

Delay time



RPM will be shown on the display.

Break-In starts

3.01 4.25 17100  
T:01:52 Cycle:01

Runtime



Remaining cycles

Voltage    Ampere    RPM

3.01 4.25 17100  
T:01:52 Cycle:02

Runtime

Remaining cycles

0.00 4.25 17100  
End Break In

End of Break-In

## 4. Recall Data

4. Recall Data  
5. Delete Data

Main Menu



- Select Data -  
M-Run Save data.

▼ ▲ Select Motor Run or Step-Test data



Enter

### Key Operation

- ◀ Return to Main Menu, Back
- ▼ ▲ Motor Run/Step-Test Select data number
- ▶ Forward, Enter

### Motor Run data

Voltage at Motor Run stopped	Current at Motor Run stopped	RPM at Motor Run stopped
------------------------------	------------------------------	--------------------------

3.00	4.25	17100
MXRPM : 17250 No. 0		

▼ ▲ Select data number

Maximum RPM

Data number

### Step-Test data

Data number	Tested step (6-cell mode/4-cell mode)
-------------	---------------------------------------

No. 0	6 step
AVE Amp :	5.40

▼ ▲ Select data number

Average current



Peak Amp :	12.63
Max RPM :	51120

Maximum consumed current at motor starting

Maximum RPM at 7.2V (6-cell mode) / 4.8V (4-cell mode)



1.2v	2.4v	3.6v
4.8v	6.0v	7.2v

Voltages at each step (6-cell/4-cell)



4.8	5.2	5.3
5.5	5.6	6.0

Consumed current at each step (6-cell/4-cell)



## 5. Delete Data

✳ 5. Delete Data  
6. Quick Test

Main Menu

### Key Operation

- ◀ Return to Main Menu
- ▼ ▲ Select Motor Run or Step-Test data.
- ▶ Delete data

- Select Data -  
M-Run Save data.

▼ ▲ Select data to delete.

▶ Press the button to delete all data.

M-Run data.  
all delted !!

After deleting, display flashes twice then returns to Main Menu.

Main Menu

## Error Message

Display

Hook up Motor!

Amps too high!

Temps too hot!

Supply is poor!

Input volt high!

Out of order  
Call for service

INPUT VOLT ERROR  
VOLT: 10.04

★ If any of error messages are shown, immediately stop using the motor checker and confirm message contents.

Check alligator clips, motor brushes, and brush springs.

Motor consumes more than 25 Amperes.

The motor checker is too hot to operate.

The stable power supply is inadequate.

Input voltage is too high. Decrease output voltage of power supply down to 17.0V.

There is a malfunction. Contact your local Tamiya dealer.

Input voltage error: Adjust output voltage of power supply to 11.0-15.0V.

## 保証規定

● 正常な使用状態(取扱説明書などの注意書にしたがった使用状態)で故障した場合には、無料で修理をいたします。

● この保証書はタミヤVGモーターチェッカーについてのみ保証するものです。

● お買上げ日から120日以内に正しい使用状態で発生した故障は、無料修理いたします。

★ 次のような場合は、保証期間内でも修理は有料となります。

① 使用上の誤りや操作の間違いによる故障(水ぬれ、衝撃などによる故障や損傷)。② 電氣的、機械的な変更や改造、分解をした場合。③ 指定以外の電源を使用した場合。④ タミヤ以外で修理、改造された場合。⑤ お買上げ後の輸送や移動、落下などによる故障や損傷。⑥ 保管上の不備(高温多湿の所、ナフタリンその他薬品等、製品に損傷を与える場所での保管)や手入れの不備による故障や損傷。⑦ 火災やその他の災害による場合。⑧ 修理ご依頼の際に保証書がそえられていない場合。⑨ 保証書にお買上げ店名、お買上げ店日、お買上げ日の記入がない場合およびそれらの字句を書き換えた場合。

● 修理を依頼される場合は、この保証書と共に製品をタミヤカスタマーサービスにお送りください。

● 修理依頼の際の送料は、お客様にご負担をお願いいたします。

● この保証書は日本国内でのみ有効です。また保証書の再発行は致しません。

## 6. Quick Test

### 6. Quick Test 1. Motor Run



Ready to test!  
Time: 02 Vol: 4.8

Set time

Set voltage



Voltage

Ampere

RPM

4.8 8.62 34000  
Time: 03 12.60

Runtime

Input voltage



Set: 4.8 R: 34060  
M: 11.91 A: 9.25



Ready to test!  
Time: 02 Vol: 4.8



Main Menu

Main Menu

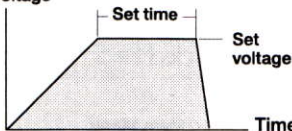
### Key Operation

- ◀ Return to Main Menu, Back
- ▼ ▲ Time/Voltage setting
- ▶ Confirm/Stop, Forward

Set time (seconds) and voltage.

Display during test

Voltage



Set: Set voltage  
 R: Maximum RPM  
 M: Maximum current  
 A: Average current

Set time and voltage are saved to memory. Press ▶ key for more than 2 seconds to start Quick Test.

Send the product with detailed description of the malfunction to Tamiya Customer Service for repair request (Effective in Japan only).



## 保証書

製品名 **タミヤ VGモーターチェッカー**

お買上日/平成 年 月 日

保証期間●お買上時から120日間

お名前

※ご販売の際、必ずお買上げ日を記入し捺印してください。

ご住所

販売店印

電話番号

※販売店印とお買上年月日の記入が無いものは無効