



VIC 3000 (ATL 4 & ATL7)

SBA 3000 GB

SBA 3080 GB

***SUN BRAKE TESTER***

***AUTOMATIC TEST LANE (ATL)***

***SOFTWARE FOR WINDOWS***

● **OPERATOR'S MANUAL**



## Operator's Manual

VIC 3000  
SBA 3000 GB  
SBA 3080 GB

# SUN TEST SOFTWARE FOR WINDOWS

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### **TO THE READER**

Whilst every effort has been made to ensure that the information contained in this manual is correct, complete and up-to date, the right to change any part of this document at any time without prior notice is reserved.

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**Before installing, maintaining or operating this unit,  
please read this manual carefully, paying extra  
attention to the safety warnings and precautions.**

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## CHAPTER 1 INTRODUCTION

### 1.1 ABOUT THIS MANUAL

Congratulations on your decision to purchase a SUN brake tester /Test Line. SUN products are famous for permanent advancement.

This Operating Manual provides you with all information important for the routine work with your Brake Tester.

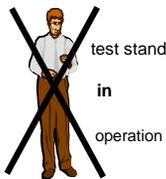
### 1.2 SHORT DESCRIPTION OF BRAKE TESTING

The brake tester /test lane allow easy and quick performance of brake tests with light commercial vehicles (class 7 & 5 light), passenger cars (Class 4) 3 wheeled vehicles (Class 3) and motorcycles with or without sidecar (class 1 & 2). It is possible to test multi axle vehicles up to 8 axles.

The PC program supplies detailed information on the condition of the brake system of the tested vehicle.

### 1.3 OPERATIONAL SAFETY AND ACCIDENT PREVENTION

Please follow the regulations in the Operating Manual in order to avoid accidents and damage to the equipment.



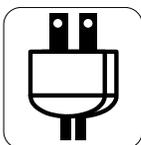
- During the brake test, please mind that **no one is staying at close range** to the turning rollers.

If necessary, secure the test stand area by means of railings and colour markings on the floor or by danger signs with warning lamps. **CAUTION! BRAKE TEST!**

Prior to the test sequence, it is important to make sure that **no one is nearby the roller set**, and that **the tester remains seated in the vehicle** during the test run.



- If the Brake Tester is installed at the traffic zone of the workshop or at an area accessible to the public, it is important to cover the test stand or protect it by railings when **not in use**.



- If the brake tester is not in use, lock the main switch in order to exclude any unauthorized use.

- **Safety regulations during the operating procedure:**

- No adjustment work with turning rollers!
  - No motor start via the test stand drive!
  - Do not park vehicles on Roller Brake Testers, in particular not with the drive axle, not with engaged gear, and not with turned-on ignition. When Diesel driven vehicles are concerned, not even with turned-off ignition, since the engine of the vehicle could start up on initiating the rollers, thus risking that the driverless vehicle gets out of control.
  - The „emergency operation mode“ (key-operated switch) should only be applied to be able to drive a vehicle off the roller set in case of any operating failure with the test stand.
  - Withdraw the key for emergency operation from the display cabinet and put it in safekeeping to prevent any unauthorized use.
  - On actuating the „automatic operation mode“ the rollers start up with driving the vehicle onto the test stand. For this reason, the IR transmitter should be kept inside the vehicle to be able to switch the test stand off from the driver's seat in case of emergency.
  - Improper handling of the IR transmitter can cause the unintended start-up of the roller set. For that reason, the IR transmitter should be put in safe-keeping to prevent from any unauthorized operation when not in use.
- The Brake Tester may only be operated within the rated power and the maximum speed stated in the Technical Data Sheet. Shift period for the rated power is 20% meaning a two minutes' operating time is followed by a rest period of 8 minutes.
  - **Slowly drive** the vehicle onto the test stand thus avoiding unnecessary strain to both the vehicle and the test stand.



- From time to time check the fastening screws of the cover plates on their tight fit in order to avoid any tyre damage when driving onto and off the test stand.

- The access to electrical control devices, such as the exchange of safety fuses not controllable from outside, is **only allowed to skilled workers**.



- Prior to opening the switch cabinet, disconnect the system from the mains supply.



- Keep dry all parts of the electric system!



- **Check** the safety devices of the Brake Tester, in particular the initiators and safety rollers **in regular intervals** on their perfect functioning. Step-in safety devices between the test rollers are obligatory.

## 1.4 TECHNICAL DATA

	<b>VIC 3000 ATL 4 SBA 3000 GB</b>	<b>VIC 3000 ATL 7 SBA 3080 GB</b>
<b>General</b>		
Measuring range	0-800KGF	0-12000KGF
Max weight	4000 KG	6000KG
Max axle weighing	4000 KG	6000KG
Test speed	5.2Km/H	2.6Km/H
Operating temperature	0 – 70 C	0 – 70 C
Roller coefficient dry -wet	0.9-0.7 / 0.7-0.5	0.9-0.7 / 0.7-0.5
<b>Power supply</b>		
Voltage	3N ~ PE ~ 400	3N ~ PE ~ 400
Frequency	50Hz	50Hz
Fuse rating	32A	32A
Mains lead diameter	5x 2,5 mm <sup>2</sup>	5x 4 mm <sup>2</sup>
Motor power	2 x 3.7Kw	2 x 3.7Kw
<b>Roller Chassis</b>		
Dimensions	2350 x 670 x 255	3100 X 700 X 326
Roller Diameter	216mm	205mm
Roller Separation	400mm	404mm
Roller length	700mm	1000mm
Distance between roller (centre plate)	800mm	860mm
Roller Displacement height	0	25mm
Weight	370KG	725Kg
<b>Control Box</b>		
Dimensions	800x600x200mm	800x600x200mm
Weight	30KG	30KG

## CHAPTER 2 DESCRIPTION OF FUNCTIONS

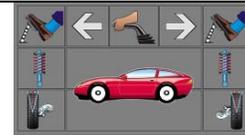
### 2.1 HOME PAGE BUTTONS

	<p>Class 4, Class 5 Light &amp; Class 7 testing mode (Manual testing &amp; optional ATL program)</p>
	<p>Class 1 &amp; 2 testing mode (optional)</p>
	<p>Exit brake tester software</p>
  	<p>Options for HGV/ PSV testing depending on brake tester chassis weight capabilities</p>

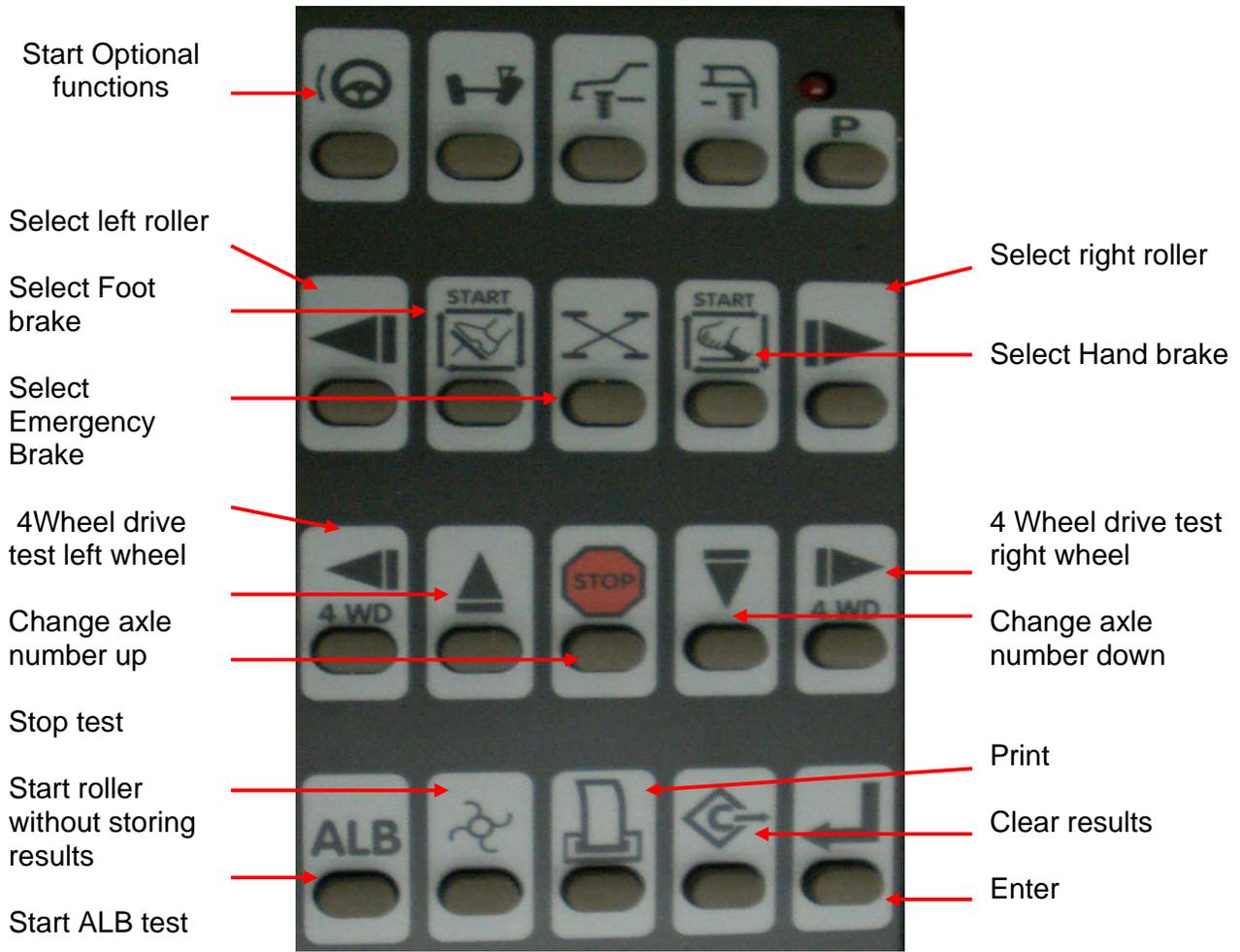
## 2.2 BRAKE TESTING TOOL BAR

Once in the brake tester mode, the following buttons are available from the tool bar.

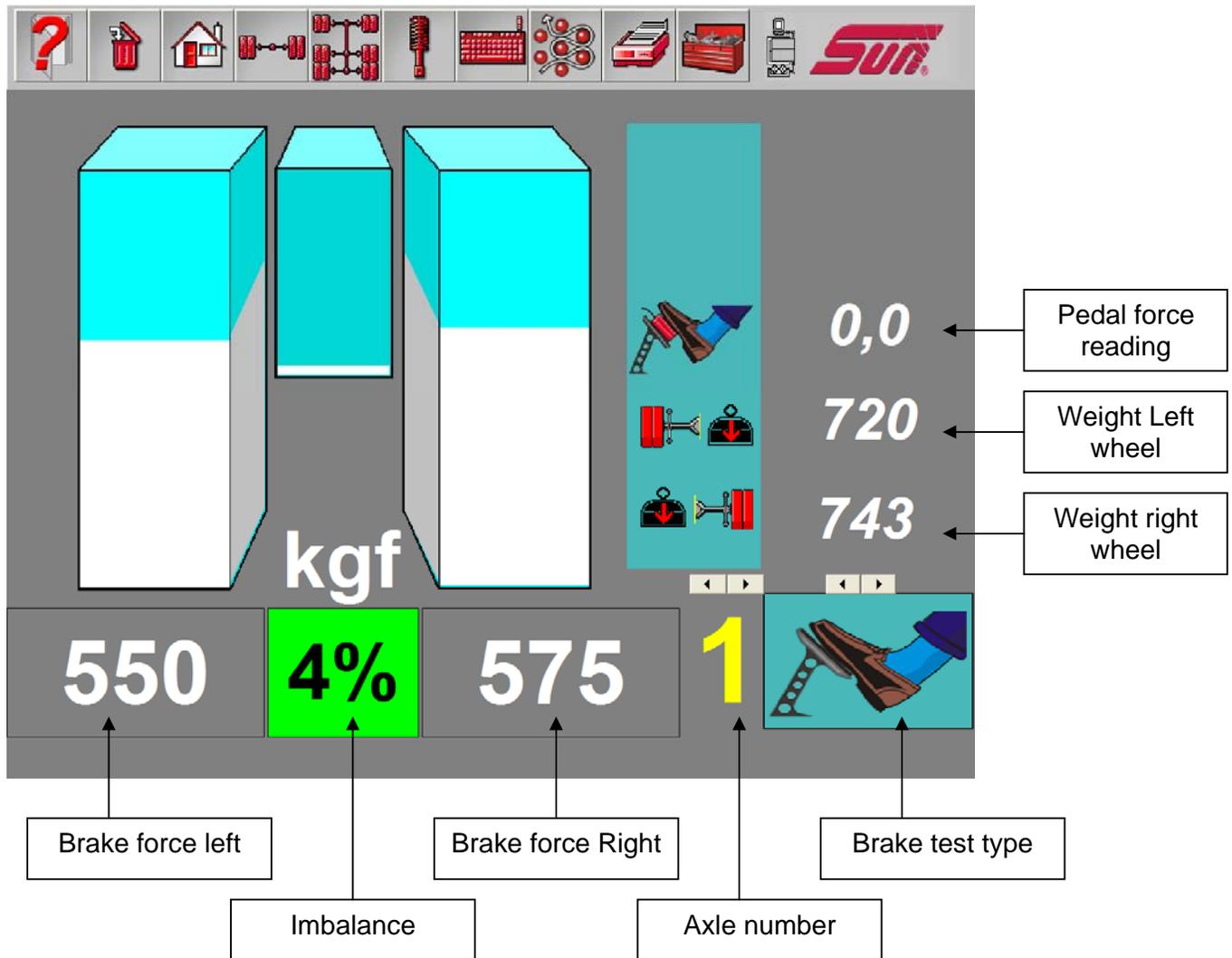
		Help menu
		Delete stored / previous test results
		Home button, takes you back to previous page
		Review test results by axle (text) Results can also be reviewed graphically by clicking on one of the brake icon in the main screen
		Review test results as a complete vehicle summary (text)
		Review suspension test results (only if option is fitted)
		Data page. From here custom information can be added, such as print header, customer name, vehicle ID and manual adding of vehicle weight.
		Start ATL test procedure (if option enabled)
		Print test results
		Setup page and set default print option.



### 2.3 IR REMOTE CONTROL



## 2.4 MONITOR DESCRIPTION



## CHAPTER 3 TEST SEQUENCE

### 3.1 BRAKE TESTING MANUAL. (CAN BE USED ON ALL CLASSES OF TEST)

#### Automatic mode is not to be used in the UK

When performing a brake test as part of the MOT procedure, always refer to the MOT operator manual for specific testing requirements, a copy of the manual can be found @ [www.motinfo.gov.uk](http://www.motinfo.gov.uk)

Drive vehicle into the roller set.

Centralise the vehicle by pressing the start button



When vehicle is correctly aligned press stop, to stop the rollers.



To perform a single wheel test, first press either the left or right arrow on the remote control depending on which wheel is to be tested.



The display will confirm which side has been selected by displaying a Red arrow head.



Now select the type of test to be performed, main brake, parking brake or emergency brake



The selected roller will start the selected test.

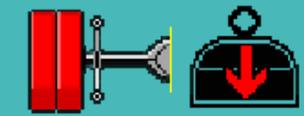
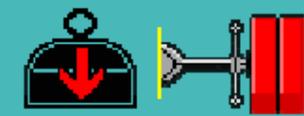
Do not start applying the brake until the Red horizontal bar has gone off indicating the brake tester is now up to speed and ready to take the reading.

Slowly apply the brake to be tested and the measured brake force will be display on the screen.

Once the maximum reading is achieved press the stop button to record the result, if the wheel has lock then the computer will automatically record this result.



During the test the display may show other data, this could be the axle number which is being tested, the type of test being performed and depending on options installed, wheel weight and force applied to the brake pedal.

	Foot brake		Pedal force reading
	Hand brake (Parking brake)		Weight left wheel
	Emergency brake		Weight right wheel

Now perform any further tests required on this axle. To perform an imbalance test simply press the type of imbalance test required (i.e. foot brake) and the computer will start both rollers together to allow an imbalance test to be completed.



#### **NOTE**

***To exit the rollers always***

***Always drive out in the normal driving direction.***

***Should the axle being tested be the driven axle then the computer will sense the rollers start to turn when the clutch is released and start the motors to assist the vehicle out of the rollers. If the motors do not start up automatically stop the wheels and then release the clutch slowly again to allow the computer to sense the drive out requirement.***

***NEVER try to leave the rollers by spinning the wheels this, this will cause premature failure of the motor & or gearbox assembly.***

### 3.2 ATL TEST (OPTION)

When performing a brake test as part of the MOT procedure, always refer to the MOT operator manual for specific testing requirements, a copy of the manual can be found @ [www.motinfo.gov.uk](http://www.motinfo.gov.uk)

Do not put vehicle into the rollers until instructed to so by the computer

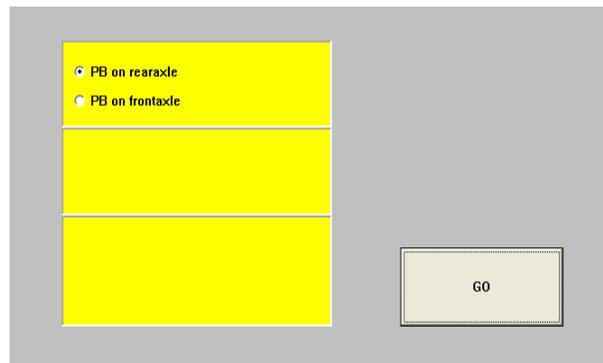
Select the type of test to be performed from the selection at the top of the screen



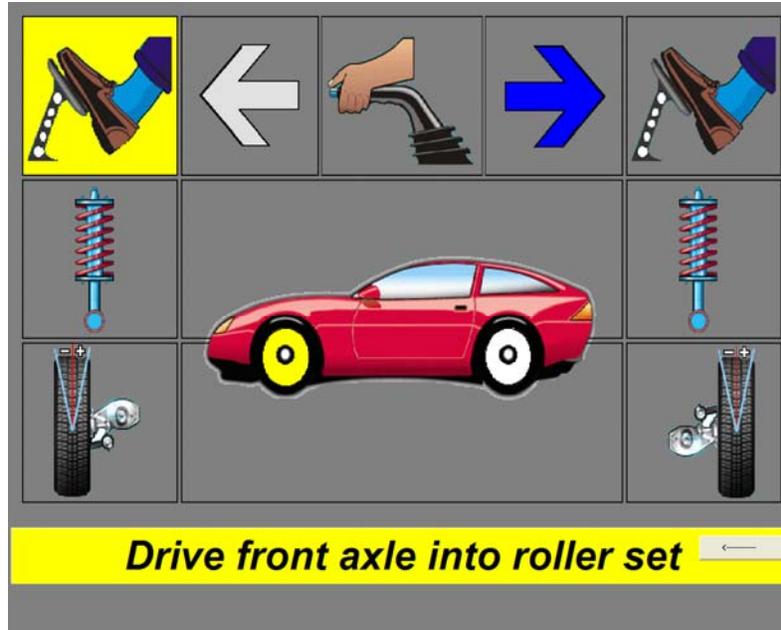
Once the type of test has been selected start the ATL procedure by pressing the ATL button



The computer will then ask specific questions on the test to be performed such as location of the hand brake on the vehicle (PB)



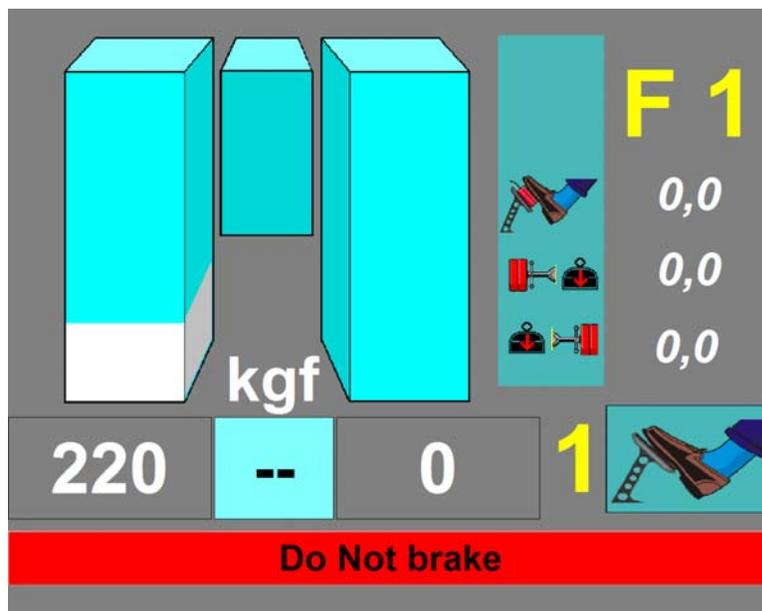
Once all questions have been answered the software will give instruction on the next step



Follow screen instruction **only** (during the ATL test the remove control is not required as the computer will be controlling the test being performed and the sequence of the tests)

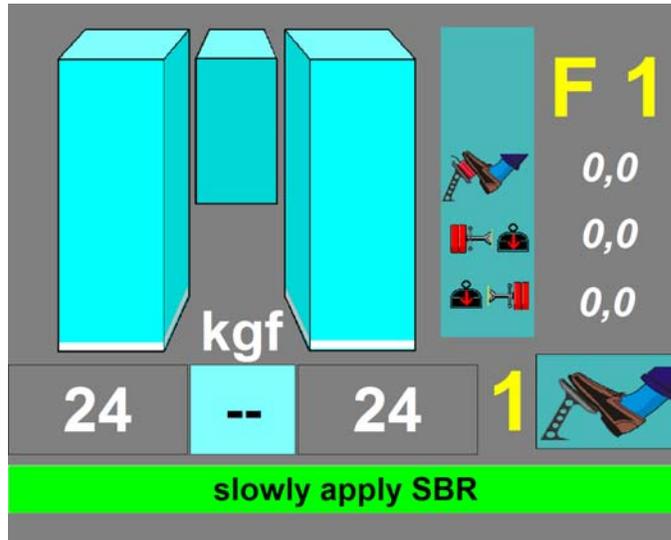
Once the computer senses the vehicle has entered the rollers it will take the weight of the axle being tested (class 4 tests only), Class 7 brake efficiency calculations must be done using the published vehicle weight (see section DATA chapter 5) on how to manually add the weight so the brake tester can perform the efficiency calculations) .

The computer will start the rollers and allow the vehicle to be centralised.



Apply the park brake if the park brake is on the rear axle to help secure the vehicle in the rollers.

The ATL software will be performing Axle tests (apposed to wheel tests performed in the manual mode)



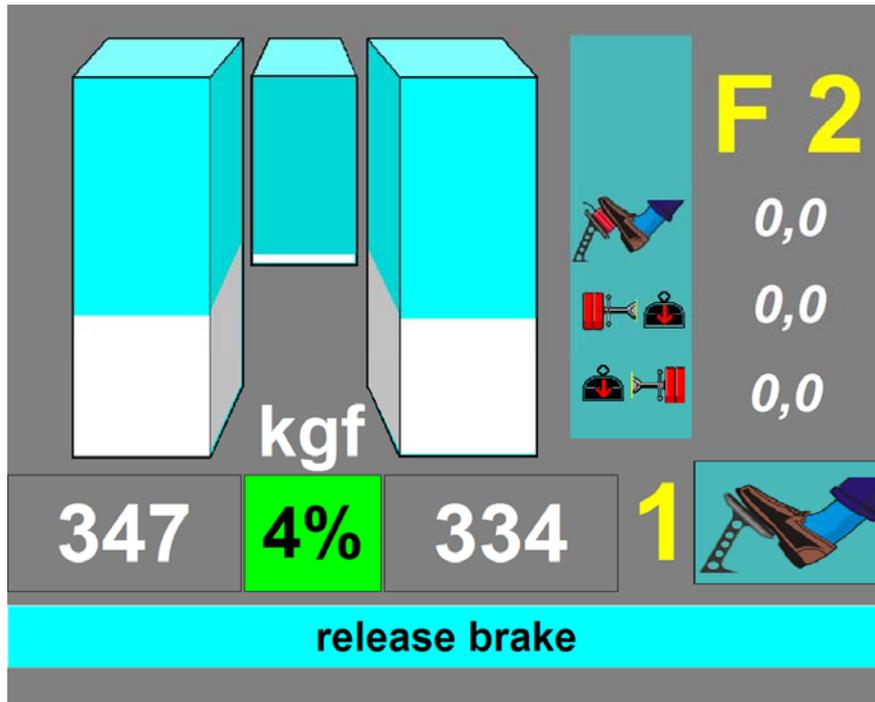
The type of test being performed will be display on the right hand side of the display with any instruction along the bottom of the display.

### ATL Test types

	<b>F 1</b>	Foot brake on axle 1, used to obtain maximum brake force
	<b>F 2</b>	Foot brake on axle 1 to assess for: <ul style="list-style-type: none"> <li>• Bind</li> <li>• Judder</li> <li>• Rate of increase and rate of decrease.</li> </ul>
	<b>R 1</b>	Parking brake (Hand brake) test  (in this case Park was on the rear axle, should the park brake be on the front axle then it would show F1)
	<b>R 1</b>	Foot brake on axle 2,used to obtain maximum brake force
	<b>R 2</b>	Foot brake on axle 2 to assess for: <ul style="list-style-type: none"> <li>• Bind</li> <li>• Judder</li> <li>• Rate of increase and rate of decrease.</li> </ul>

## NOTE

On foot brake type 2 you must wait for the computer to instruct you to release the brake or the software will not continue forward. If you should lock the wheels during test 2 the computer will restart the test 2 sequence.

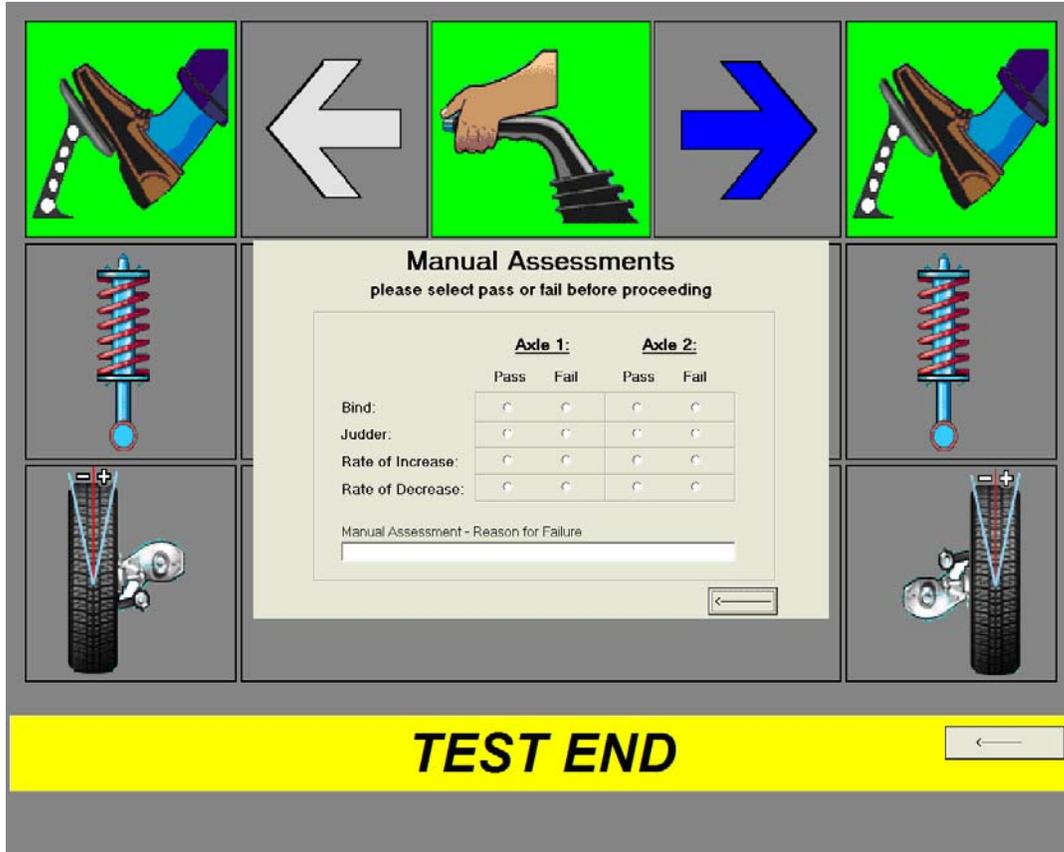


When instructed to, exit the rollers. Always exit the rollers in the normal driving direction forward.

***Should the axle being tested be the driven axle then the software will sense the rollers start to turn when the vehicle clutch is slowly released and start the motors to assist the vehicle out of the rollers. If the motors do not start up automatically stop the wheels and then release the clutch slowly again to allow the software to sense the drive out requirement.***

***NEVER try to leave the rollers by spinning the wheels, this will cause premature failure of the motor & or gearbox assembly.***

After exiting the rollers the operator must complete the manual assessment as per the VOSA specification.



The ATL software will not allow you to exit to the results until you have selected either a pass or fail for every option on each axle tested.

You also have the option to add further data on reason for failure in the free text field

To review / print the result refer to the section of the manual on option to review the results

### 3.3 CLASS 1 & 2 (MOTORCYCLE)



When performing a brake test as part of the MOT procedure, always refer to the MOT operator manual for specific testing requirements, a copy of the manual can be found @ [www.motinfo.gov.uk](http://www.motinfo.gov.uk)

Close the roller covers over the rollers not being used for the test.

Fit the motorcycle adaptor plate to the rollers set being used for the test. The test can be performed on either side of the chassis.

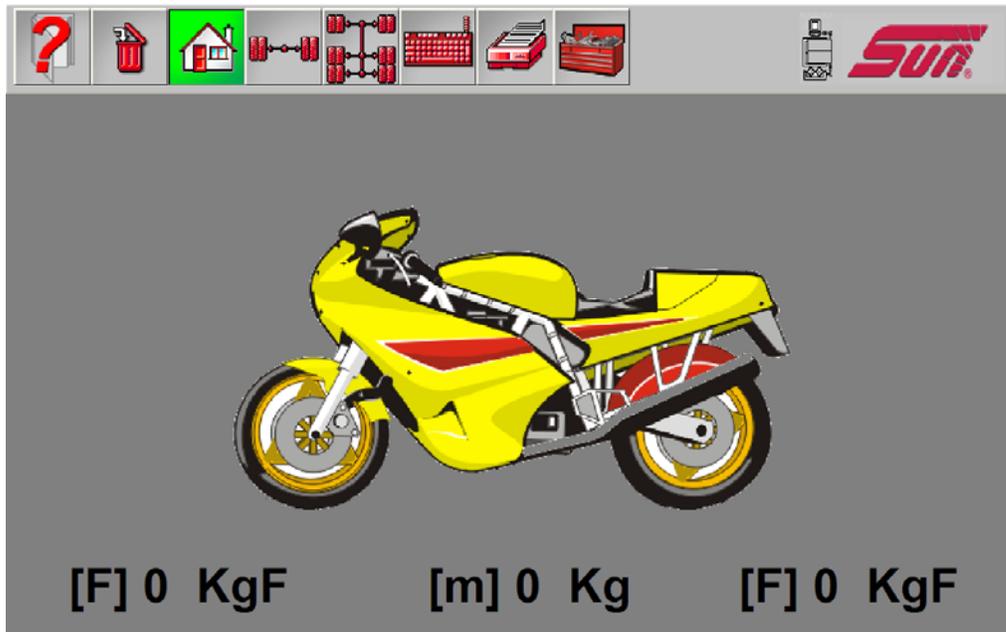
**Note**

The software will automatically disable the none used rollers.



From the home page, selecting the Class 1 & 2 option from the main menu

The following page is displayed.



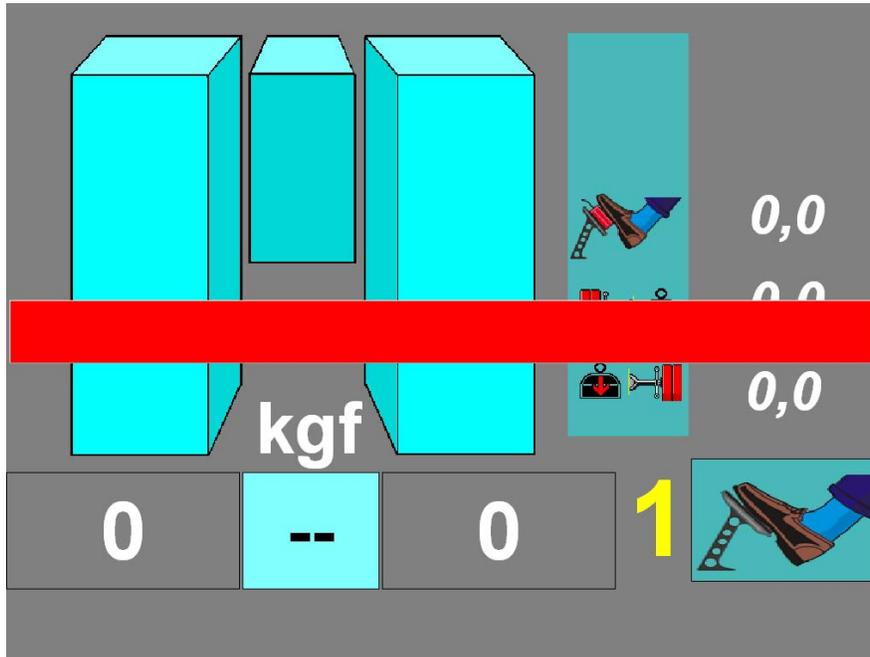
The brake test will need to be started within 10 seconds of entering the rollers otherwise the system will report a fault condition.

#### Testing the front wheel

Ride the front wheel into the chassis, to start the test, press the start key on the remote control.



Do not apply the brake until the red bar has gone off the screen



Gently apply the brake until maximum brake force is achieved, press the stop button to record the result. Should the wheel lock then the maximum result will automatically be stored.

Display will now show the result.



With auto weighing



without auto weighing

With auto weighing option the software will automatically calculate the wheel efficiency. If using a separate weighing system the calculation will need to be done manually.

Exit the rollers with the front wheel and put the rear wheel into the rollers.

Start the test by pressing the start button, the software will have automatically Switched over to rear axle test.



Perform the rear wheel test the same as the front wheel test.

Once test complete the software will display the results



With auto weighing



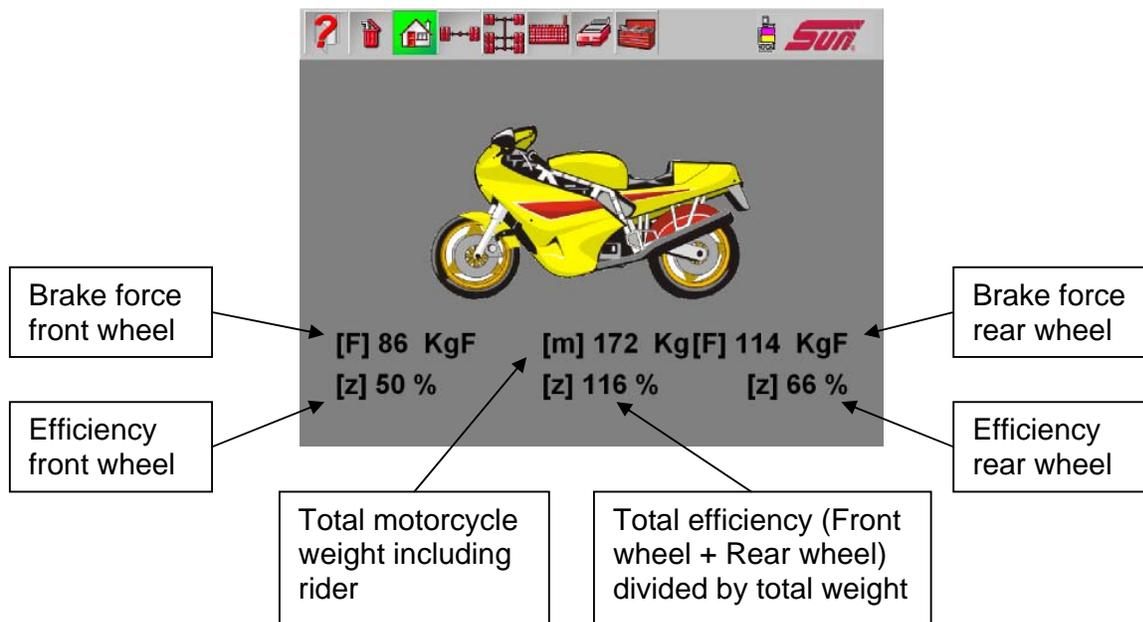
without auto weighing

With auto weighing efficiency's are calculated automatically

The brake efficiency for each system is the total of the brake forces achieved by operating the brake control divided by the total weight of the motorcycle, rider and sidecar if fitted.

When testing a motorcycle with linked brakes or a sidecar with brakes, the overall brake efficiency should be calculated by the operator.

**Monitor description**



## CHAPTER 4 REVIEWING RESULTS

To review the test results you have 4 options.

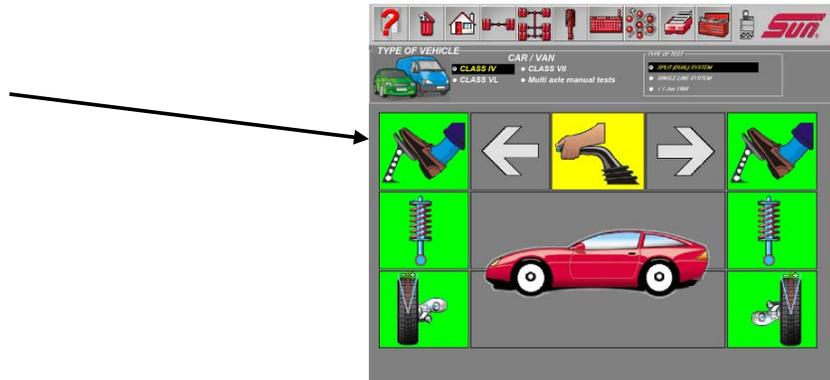
- Graphically on display
- By axle on display
- By complete vehicle on display
- Printed

### OPTION 1 GRAPHICALY

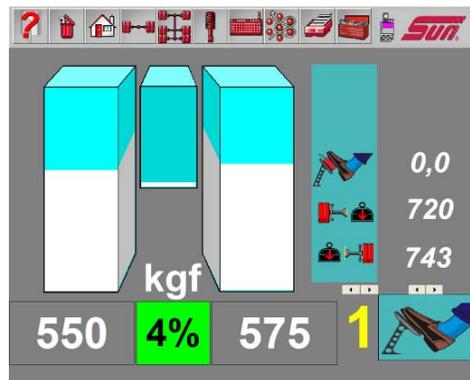
After completing the test, the brake tester home page will become coloured (green) to indicate that there are stored results.

To retrieve these results simply click the graphic to see the stored results

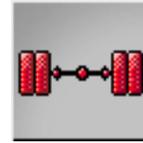
Stored results



Graphic review



You can switch between axles and brake types by using the forward and reverse arrows above the axle number / brake type



## OPTION 2 BY AXEL

By selection on the axel results from the tool bar you will be presented with a table of the results

The results table shows results by wheel and by axle

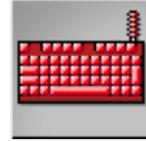
Any fail results will be displayed as a red background

		Service brake			Parking brake			Secondary brake		
AXLE/BRAKE-TYPE...		1,1	2,1	2,2						
max. brakeforce Le	kgf	551	391	261						
max. brakeforce Ri	kgf	575	387	245						
wheel bind Le	kgf	25	20	-						
wheel bind Ri	kgf	29	20	-						
max. pedal force	N	-	-	-						
lock difference	%	4	1	6						
max. difference	%	98	96	40						
ovality left	%	6	6	-						
ovality right	%	7	7	-						
		Man +	Man +	Man *						
wheel weight Le	Kg	720	683	683						
wheel weight Ri	Kg	743	645	645						
wheel weight Le+Ri	Kg	1463	1328	1328						
input weight	kg	0	0	0						
axle efficiency	%	-	-	-						
track	mm/r	0,5	0,8	0,8						

Remarks: '+'-manual stop / '-'-vehicle was lifted out of the rolls / '<'-locking left / '>'-locking right



## CHAPTER 5 DATA PAGE



After selecting the data page, you will see the following page

Here you can enter customer and vehicle information which is to be printed or used as part of the database option. You also have to line of free text for adding comments.

If you leave the check box at the top of the screen checked, when test result are cleared the customer information is also cleared, if you wish to do repeated tests using the same customer data remove this check box and the system will retain this information until it is rechecked.

### VEHICLE WEIGHTS (BOTTOM LEFT CORNER)

Enter the vehicle weight here to allow the computer to calculate the brake & vehicle efficiency.

Note in ATL Class 4 mode vehicle weight is automatically done from the presented weight measured by the roller chassis.

Entering a manual weight in ATL 4 mode will override measured weight.

**PRINT HEADER INFORMATION (OPTION)**

By selecting the following icon you have the option to enter up to 4 lines of data such as

Garage Name  
Street  
Town  
Telephone number

**ADVERTISING TEXT (OPTION)**

By selecting the following icon you have the option to enter up to 4 lines of advertising data such as

*This month special  
Brake disks & shoes 20% off  
When changed as part of a  
Full service*



This will then be printed at the end of the printout,

## CHAPTER 6 DATABASE



By selecting the disk symbol from the data page you can either save test data or recall previously saved data.

### DATA BASE ICONS

	Save data to database
	Recall / search data in database
	Exit database
	Confirm data
	Delete selected record

### SAVING TESTS

When saving data all information entered into the data page will be saved and can be used to recall tests back at a later time

### RECALLING SAVED TESTS FROM THE DATABASE

To recall all tests simply double click the recall icon and all saved data will be displayed.

To recall specific tests (search database) click the recall icon once and then enter the data in one or more of the search fields. Then click the recall button and only tests with the specific search criteria is displayed

## CHAPTER 7 SELECT PRINT OPTIONS

After selecting the setup page you will be offered various options depending on options purchased.



The default option is to select the type of print out which is produced, you have the following options

### PRINT OPTIONS

	<p>ATL printout</p> <p>Basic printout showing only brake data needed for MOT test results.</p>	<p><b>Brake test:</b></p> <table border="1"> <thead> <tr> <th rowspan="2"></th> <th rowspan="2"></th> <th colspan="3">Front axle <i>ATL</i>&lt;&gt;</th> <th colspan="3">Rear axle <i>ATL</i>&gt;</th> <th colspan="3">Hand brake <i>ATL</i>*</th> </tr> <tr> <th>left</th> <th>imbalance</th> <th>right</th> <th>left</th> <th>imbalance</th> <th>right</th> <th>left</th> <th>imbalance</th> <th>right</th> </tr> </thead> <tbody> <tr> <td>Wheel drag</td> <td>kgf</td> <td>20</td> <td></td> <td>12</td> <td>16</td> <td></td> <td>20</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Brake force</td> <td>kgf</td> <td>375</td> <td></td> <td>338</td> <td>257</td> <td></td> <td>281</td> <td></td> <td>192</td> <td>212</td> </tr> <tr> <td>Max. imbalance</td> <td>%</td> <td></td> <td>14</td> <td></td> <td></td> <td>21</td> <td></td> <td></td> <td>29</td> <td></td> </tr> <tr> <td>Axle weight</td> <td>kg</td> <td></td> <td>0</td> <td></td> <td></td> <td>0</td> <td></td> <td></td> <td>0</td> <td></td> </tr> <tr> <td>Presented weight</td> <td>kg</td> <td>1500</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p><b>Information brake system:</b></p> <table border="1"> <tr> <td>Main brake</td> <td>&gt;=50 %</td> <td>83 %</td> <td>Efficiency in %</td> <td>Hand brake</td> <td>&gt;=16 %</td> <td>27 %</td> </tr> <tr> <td>Main brake</td> <td></td> <td>PASS</td> <td></td> <td>Hand brake</td> <td></td> <td>PASS</td> </tr> </table> <p>Remarks: / =manual stop / * =vehicle was lifted out of the rolls / &lt; =locking left / &gt; =locking right</p> <p><b>RESULTS OF MANUAL ASSESSMENT</b></p> <table border="1"> <thead> <tr> <th></th> <th>Front axle</th> <th>Rear axle</th> </tr> </thead> <tbody> <tr> <td>Bind</td> <td>FAIL</td> <td>PASS</td> </tr> <tr> <td>Judder</td> <td>FAIL</td> <td>PASS</td> </tr> <tr> <td>Rate of increase</td> <td>FAIL</td> <td>PASS</td> </tr> <tr> <td>Rate of decrease</td> <td>FAIL</td> <td>PASS</td> </tr> </tbody> </table> <p>Reason for failure:</p> <p><b>Overall test result: FAIL</b></p>			Front axle <i>ATL</i> <>			Rear axle <i>ATL</i> >			Hand brake <i>ATL</i> *			left	imbalance	right	left	imbalance	right	left	imbalance	right	Wheel drag	kgf	20		12	16		20				Brake force	kgf	375		338	257		281		192	212	Max. imbalance	%		14			21			29		Axle weight	kg		0			0			0		Presented weight	kg	1500									Main brake	>=50 %	83 %	Efficiency in %	Hand brake	>=16 %	27 %	Main brake		PASS		Hand brake		PASS		Front axle	Rear axle	Bind	FAIL	PASS	Judder	FAIL	PASS	Rate of increase	FAIL	PASS	Rate of decrease	FAIL	PASS																																																						
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## EC-DECLARATION OF CONFORMITY

We,

**CARTEC GmbH**  
Konrad-Zuse-Straße 1  
D-84579 Unterneukirchen  
GERMANY

Declare under our sole responsibility for design and manufacture that the following product, specially made for

### **SUN ELECTRIC EUROPE**

To which this declaration relates, is in conformity with the following European Directives:

**Product:** **Sun Test Line for Windows**

**Model:** **VIC 3000 (ATL 4&7)**

Corresponding EC standards:

EC Standards MACHINES: 98/37/EC

EMC directive: 89/336/EEC addendum 92/31/EEC

Low voltage directive: 73/23/EEC addendum 93/68/EEC

Especially applied

harmonised standards: EN 60204 - 1

EN 50081 - 1

EN 50082 - 1

Unterneukirchen, \_\_\_\_\_  
Date Director of Manufacturing



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We,

**CARTEC GmbH**  
Konrad-Zuse-Straße 1  
D-84579 Unterneukirchen  
GERMANY

Declare under our sole responsibility for design and manufacture that the following product, specially made for

### **SUN ELECTRIC EUROPE**

To which this declaration relates, is in conformity with the following European Directives:

**Product:** **Sun Test Line for Windows**

**Model:** **SBA 3000 GB**

Corresponding EC standards:

EC Standards MACHINES: 98/37/EC

EMC directive: 89/336/EEC addendum 92/31/EEC

Low voltage directive: 73/23/EEC addendum 93/68/EEC

Especially applied

harmonised standards: EN 60204 - 1

EN 50081 - 1

EN 50082 - 1

Unterneukirchen, \_\_\_\_\_  
Date Director of Manufacturing



## EC-DECLARATION OF CONFORMITY

We,

**CARTEC GmbH**  
Konrad-Zuse-Straße 1  
D-84579 Unterneukirchen  
GERMANY

declare under our sole responsibility for design and manufacture that the following product, specially made for

### **SUN ELECTRIC EUROPE**

to which this declaration relates, is in conformity with the following European Directives:

**Product: Sun Test Line for Windows**

**Model: SBA 3080 GB**

Corresponding EC standards:

EC Standards MACHINES: 98/37/EC

EMC directive: 89/336/EEC addendum 92/31/EEC

Low voltage directive: 73/23/EEC addendum 93/68/EEC

Especially applied

harmonised standards: EN 60204 - 1

EN 50081 - 1

EN 50082 - 1

Unterneukirchen, \_\_\_\_\_

Date

\_\_\_\_\_  
Director of Manufacturing