SAF&GO™


***with Stripe of Light Technology***

John BEAN®

# BFH 2000

Wheel Balancer and Diagnostic Device

# BFH 2000

## Wheel balancer and diagnostic device

### Takes care of your customer SAF&GO™

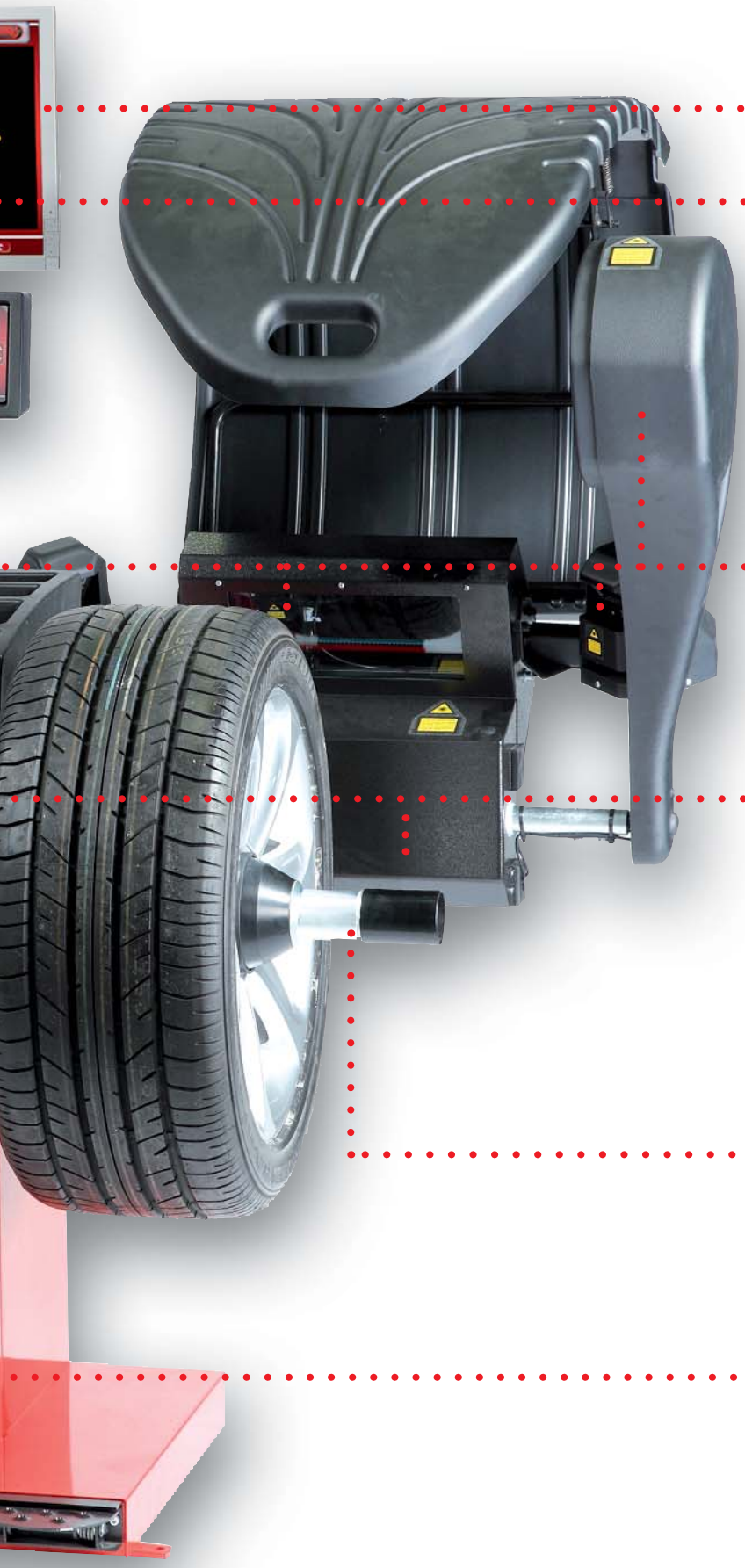
The continuous evolution in automotive technology has taken car performance to its limits. High speed and extreme road and weather conditions have a major impact on driving safety. The wheel is the most important component of the car, assuring grip, direction and SAFETY.

High performance and safety are only provided by perfect balancing fixing the vibrations due to imperfect wheel shape (run-out), and an accurate and umcompromising safety diagnostics.
Cuts, bulges, scratches, blisters and flat spots, even if minute and hence invisible to a standard check, may be the cause of fatal incidents under extreme driving conditions.

### Tyre and rim diagnostics

The challenges of the market and the requirements from customers' end were the decisive factors for the development of an automatic, non-contact BFH 2000: a car wheel balancer with diagnostic functions which combines the unique Stripe of Light technology and the most accurate balancing techniques in order to guarantee:

- **Customer safety**
  Stripe of Light technology and SAF&GO offer a set of functions avoiding any possible risk due to damage to the wheel, or wrong operation of the machine.
- **Ease of use**
  The optima technology and Smart Profile make it easy to understand and use the professional wheel balancer and diagnostic device.
- **Reduced Errors**
  Non-touch measurement and analysis of the wheel data reduces mistakes and misinterpretations.
- **Productivity**
  Features like power clamp, gauge arm, Stripe of Light and optima technology achieve high productivity for the garage.
- **Customer satisfaction**
  Driving safety improves considerably – an essential prerequesite for customer retention and customer satisfaction.



**19" LCD wide-screen monitor**

Up-to-date design and enhanced overview.

**The graphical user interface,**

in combination with the capacitive keypad, offers an easy menu guidance, a clear overview of information and quicker operation. Intuitive and user-friendly graphics lead the user through the functions.

**Stripe of Light® and optima® technologies**

Five high-resolution cameras scan tyre and rim and detect all the wheel data, a new unique technology. This unique scanning feature has never before been implemented in a wheel balancer.

**User friendly**

The machine comes standard with a gauge arm and laser pointer for accurate placement of adhesive weights and a space-saving wheel guard.

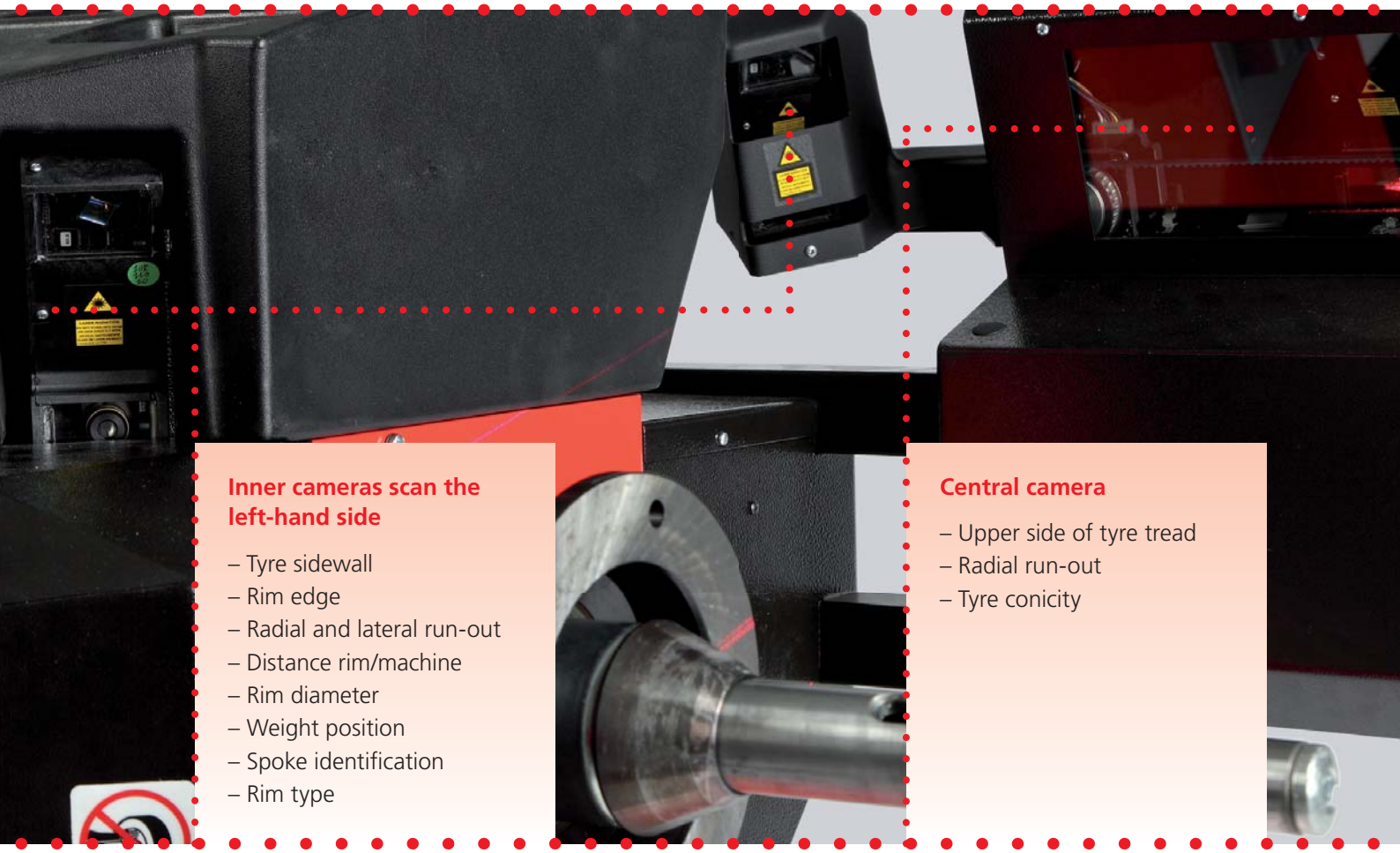
**Power clamp®**

The wheel is precisely clamped with this patented electronic clamping device – an essential prerequisite for perfect measurement results.

**VPI technique® inside**

The patented virtual plane imaging technique ensures most accurate balance results and is insensitive to ambient conditions.

# High resolution laser cameras



**Inner cameras scan the left-hand side**

– Tyre sidewall
– Rim edge
– Radial and lateral run-out
– Distance rim/machine
– Rim diameter
– Weight position
– Spoke identification
– Rim type

**Central camera**

– Upper side of tyre tread
– Radial run-out
– Tyre conicity

## Unique Stripe of Light® technology

Five high-resolution laser cameras, one of which is displaceable, scan tyre and rim in different directions with special 3D laser stripes so that all data can be detected quickly and accurately and possible defects in tyre or rim can be accurately diagnosed and documented.

**Outer cameras scan the right-hand side**

– Tyre sidewall
– Rim edge
– Radial and lateral run-out
– Rim width
– Weight position

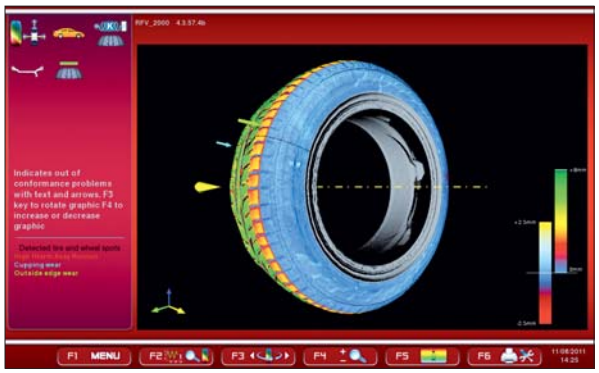
## SAF&GO™

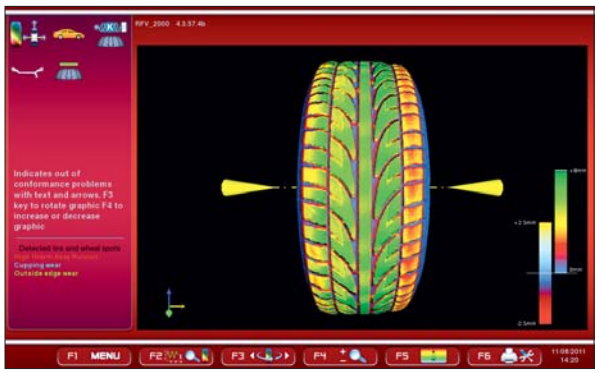
The type, size and position of a defect in the tyre are identified, measured and visualised by Stripe of Light technology.

The BFH 2000 with 3D technology not only detects radial and lateral run-out of the wheel, but also flat spots on the tyre tread surface, externally visible scratches on the rim or in the tyre sidewall – every single one having the potential of being a major safety hazard to the car.

SAF&GO includes

- Tyre pull index (TPI)
- Tread depth analysis (TDA)
- Sidewall and tread analysis (STA)
- Alignment pre-checking (APC)
- Tyre wear-out prediction (TWOP)



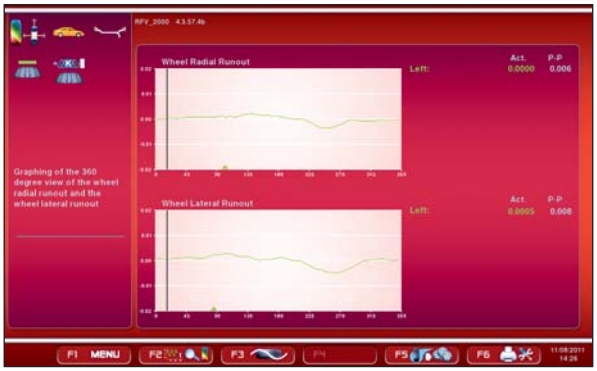


# SAF&GO™ takes care of your customer

## optima technology

The non-contact laser imaging technology automatically detects all data such as wheel dimensions, amount and position of the balance weights, lateral and radial run-out, number and position of spokes and wheel imbalance – quickly and easily.

The Stripe of Light and optima technologies are unique features that never before have been implemented in a wheel balancer.

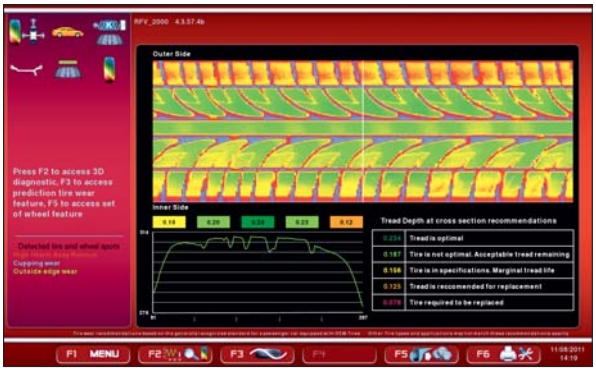




## Sidewall and tread analysis (STA)®

The entire wheel is scanned with high precision. Scratches, cuts, bulges, blisters, flat spots, and uneven wear-out of tyre are detected on sidewall and tread.

The result of this analysis is shown using 3D colour scales that highlight the hazard level so that action can be taken.


## Alignment pre-checking (APC)

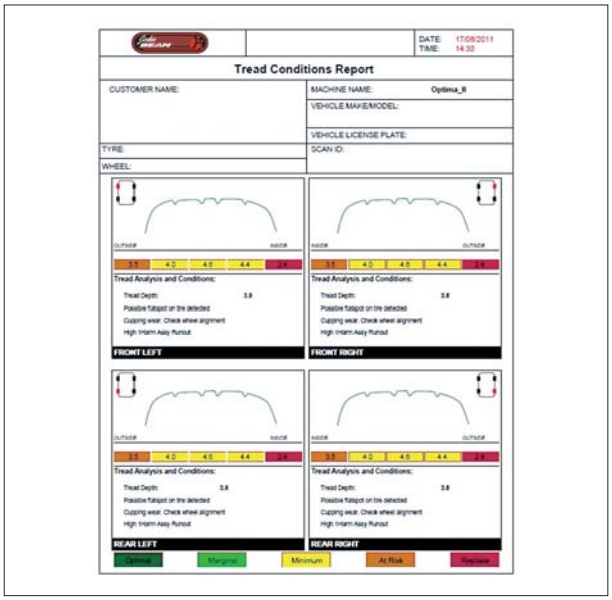
Tread wear identification opens unprecedented dimensions to tyre diagnostics: wheel alignment is suggested if need arises, average tyre pressure and suspension warnings are given as well as a residual tyre mileage forecast – essential factors for customer satisfaction and customer / car safety.

## Tyre pull index (TPI) and OptiLine®

If the wheels have been balanced, but the car tends to pull to the side, conicity measurement can reveal the cause and visualise the defect so that remedial action can be discussed with the customer.
The image on the screen will show to the expert how to position the wheels on the car in the best possible way to eliminate the tyre pull effect.

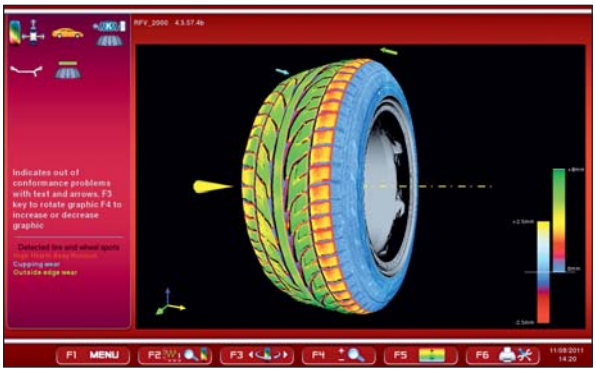

## Tread depth analysis

This analysis is another important aspect for driving safety. The patented **TreadView** tread depth measurement technique measures the tread pattern. The overall tread pattern image shows the tread depth of the entire tyre and one-sided wear.
With this visual aid it is possible to show to the customer if maintenance is enough, or if the tyre needs to be replaced to maintain his safety.



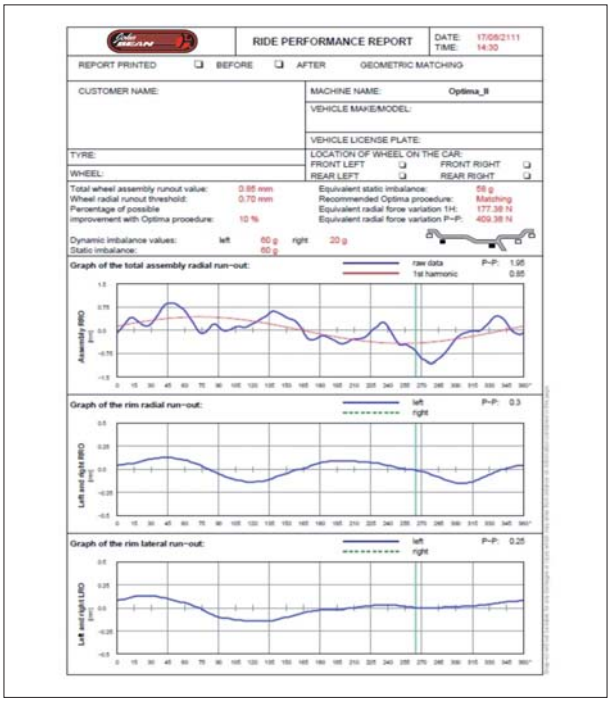

## Visualisation

But there is even more than that in the special 3D laser technology: the defects diagnosed are viewed in form of easy-to-read 3D colour maps on a conspicuous screen, and tables and colour codes clearly indicate the type and importance of the defect. This diagnostic result can be presented to the customer to define and discuss the action required to remedy the defect.




## Report

A report including all details of the condition of the tyre/wheel assembly can be printed on the printer. This report is an essential part of the quality documentation.



## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Data entry – distance rim/machine | Automatic, non-contact |
| Data entry – wheel diameter | Automatic, non-contact |
| Data entry – wheel width | Automatic, non-contact |
| Balancing program selection | Automatic, non-contact profiling of the rim |
| Spoke position detection | Automatic, non-contact profiling of the rim |
| Wheel clamping | Automatic, with power clamp |
| Wheel braking after measurement | Automatic |
| Main shaft lock | Pedal, electromechanical |
| Balancing position search | Automatic |
| ALU modes | 5 ALU + 2 ALUP |
| Split weight mode | Automatic, non-touch spoke detection |
| Radial / lateral run-out detection | Automatic, Stripe of Light or optima mode |
| Run-out matching programm | • |
| Imbalance optimisation program | • |
| Rim diagnostics & balancing | Bead seat run-out |
| Side-wall & tread diagnostics | Automatic, Stripe of Light mode |
| Tyre pull measurement | Automatic, non-contact |
| Tread depth measurement | Automatic, non-contact |
| OptiLine | Optional |
| asanetwork | Needs optional network kit |
| Self calibration | • |
| On-line help | • |

## TECHNICAL DATA

| | |
|---|---|
| Max. wheel width | 20" (508 mm) |
| Max. wheel diameter | 44" (1118 mm) |
| Max. wheel weight | 70 kg |
| Power supply (V) | 230 Volts, single phase, 50/60 Hz |
| Dimensions W x D x H | 1540 mm x 1220 mm x 1630 mm |
| Machine weight | 190 kg |
| Rim diameter (auto./man.) | 15"–30"/8"–30" |
| Rim width (dynamic balancing) | 3"–20" |
| Diameter of shaft | 1.57" (40 mm) |
| Measuring speed | 200 rpm |
| Balancing accuracy | 0.035 oz (1 g) |
| Scanner accuracy | 0.039" (0,1 mm) |

Snap-on Equipment

**France:** Snap-on Equipment France · ZA du Vert Galant · 15, rue de la Guivernone BP 97175
Saint-Ouen-l'Aumône · 95056 Cergy-Pontoise CEDEX
Phone: +33 134 48 58-78 · Fax: +33 134 48 58-70 · www.snapon-equipment.fr

**Germany:** Snap-on Equipment GmbH · Konrad-Zuse-Straße 1 · 84579 Unterneukirchen
Phone: +49 8634 622-0 · Fax: +49 8634 5501 · www.snapon-equipment.de

**Italy:** Snap-on Equipment s.r.l. · Via Prov. Carpi, 33 · 42015 Correggio (RE)
Phone: +39 0522 733-411 · Fax: +39 0522 733-410 · www.snapon-equipment.eu

**United Kingdom:** Snap-on Equipment Ltd. · 48 Sutton Park Avenue · Reading RG6 1AZ
Phone: +44 118 929-6811 · Fax: +44 118 966-4369 · www.snapon-equipment.co.uk

**EMEA-JA:** Snap-on Equipment s.r.l. · Via Prov. Carpi, 33 · 42015 Correggio (RE)
Phone: +39 0522 733-411 · Fax: +39 0522 733-479 · www.snapon-equipment.eu

Cod.: 9702 361 · 09/2011