



SPRING  
2005

# Revolution

The magazine for BTN Turbo customers and suppliers  
including news, views and technical updates



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**GARRETT**

Leaders in turbo technology

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**NEW NO QUIBBLE WARRANTY**  
for all commercial vehicle turbos

**PLUS CD ENCLOSED**

information and presentations on CD

NO QUIBBLE  
**12**  
month  
WARRANTY

## BTN is Holset's European Distributor of the Year 2004

Mid-January 2005 saw a gathering of 58 Holset distributors from all over Europe and North Africa, in the spectacular setting of Clontarf Castle, Dublin. After two days of discussion about turbo technology and the best ways to serve the aftermarket, everyone relaxed at an awards dinner, which included a charity auction featuring items from the home countries of the entire distributor network.



BTN Turbo was honoured with the top award - European Distributor of the Year 2004 - in recognition of our efforts and service levels.

The auction raised over 7,500, which was shared between the Asian Tsunami Relief Appeal and a Dublin children's hospital.



Here's where it all began 30 years ago



John Brice explains workshop techniques



The match at Chalfont Cricket Club was a big hit



Tim Winterburn from Holset helps Nico Van Duijn of MHI prepare for his first match

# BTN celebrates 30 years in turbos

**September 2004 saw the 30th anniversary of the founding of BTN Turbo. We felt that such a momentous birthday couldn't go by without a celebration, so we threw open our doors to our customers and suppliers to say 'thank you' for their support.**

We opened the event at our Uxbridge plant, where guests had the opportunity to meet the staff. It was a chance to catch up with old friends and the latest news; put names to faces for those who usually deal with us by telephone; and to see what actually happens in the workshops, where remanufacturing continued as visitors watched and asked questions.

Garrett, Holset, Mitsubishi and Borg Warner also attended with displays and technical support staff, along with Thames

Valley Training, who provide our modern apprentice and NVQ training schemes. Peter Clarke, one of the UK's leading tractor pullers, also brought along 'Red Alert' - a monstrous triple-turbo driven tractor capable of delivering 3500 bhp!

After light refreshments at the factory we set off for a game of cricket at Chalfont Cricket Club between customers and a team comprising suppliers and BTN staff. It was clear that several players hadn't been on a cricket pitch for many years - if ever - and there were some idiosyncratic batting and bowling styles that proved to be surprisingly effective on occasion, and entertaining throughout, before the customers emerged victorious.

The evening continued with a live band, food and drink, and Managing Director John Brice got a pleasant birthday

surprise when BorgWarner used the occasion to present BTN with an 'Outstanding Achievement' award.

At the end of the evening, guests were ferried home or to their hotel in a fleet of classic turbo driven cars including a Subaru Impreza P1 Rally Spec, a Lotus Esprit V8 GT, a Lotus Elise Race Spec, a Bentley Turbo R and a Rolls-Royce Silver Shadow.

Judging from the response we had over the next few days a good time was had by all. We were delighted to be able to say thank you to our partners in business in such a pleasurable way.

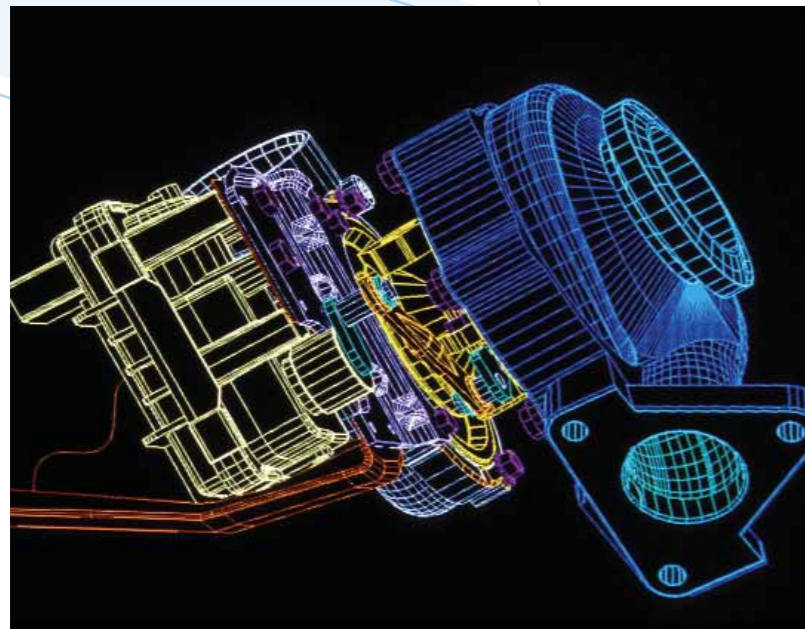
## Peace of mind now comes as standard with all commercial vehicle turbos

We are pleased to announce that all replacement turbos for diesel commercial vehicles (from the blue section of our catalogue) can now be supplied with a one year no quibble warranty: if it fails for any reason we will repair or replace it free of charge. What's more, we'll investigate

why it failed and provide a report, which may help prevent future failures.

**This warranty provides one replacement turbo (or free repair) and does not cover claims for consequential losses. Please see the terms and conditions in the catalogue or on our website.**

NO QUIBBLE  
12  
month  
WARRANTY



### Commitment to Quality

Turbocharger technology has enjoyed a rapid technical development curve since Garrett® first launched its first high volume passenger car turbo some 25 years ago. The product range is now dominated by VNT™ variable nozzle turbochargers, fitted on a wide range of diesel cars in the market today. The development of VNT™ turbochargers has raised the bar on the technical specification and tolerance of turbocharger components, which in turn has reduced the viability of remanufactured units. Garrett® is committed to supplying only new, genuine quality units through all its authorised aftermarket partners such as BTN Turbo.

All Garrett® turbochargers are produced to the same exacting quality standards, whether for Original Equipment or aftermarket customers. Through the use of Six Sigma tools, the company is constantly striving to offer the highest quality product and service levels to the aftermarket. Customers buying Garrett® branded turbochargers are assured of genuine O.E. quality product in every box.

### New for old units

We are now supplying an increasing number of brand new turbochargers instead of remanufactured units, which means that you will receive exactly the same unit as originally fitted to the vehicle – and the same turbo that you would receive from an original equipment supplier.

There are two reasons for this. First, the complexity of variable geometry turbines, such as Garrett's VNT™ (Variable Nozzle Turbine) and Holset's VGT™ (Variable Geometry Turbocharger), means that, in order to ensure absolute quality control, the equipment to set these turbochargers has not been made available to the aftermarket. Additionally, we at BTN have investigated the cost of parts and labour for every unit that we remanufacture and, in some cases, we have identified that we can offer better value to our customers by supplying new units rather than reconditioned ones.

The latest edition of our catalogue shows clearly which units are now supplied as 'new for old'. All units still carry a surcharge that is refundable on receipt of the old turbo and, for simplicity, this has been standardised at £100 per unit.

**BTN Turbo continues to be your 'one stop shop'** for all types of turbocharger to fit all marques, supplying remanufactured units where appropriate and an extensive range of brand new turbos. And, as the technology continues to develop, we're continually working with all the major manufacturers to ensure that we are the distributor who is best placed to give you all the technical support that you may require.

# BTN Turbo is pleased to be associated with Garrett® the leaders in turbo technology

## MANUFACTURER PROFILE

### Innovation and success

The Garrett® turbocharger product range, developed by Honeywell Turbo Technologies, is synonymous with innovation and advanced engineering. Its commitment to the turbocharger aftermarket is to deliver world-class standards of quality, service and value throughout the lifecycle of the millions of vehicles fitted with our turbochargers.

The turbochargers that deliver improved performance, better fuel efficiency and lower emissions in the 21st Century have their roots in the 1930s, when Garrett® supplied a charge-air cooler for the B17 Flying Fortress turbocharged engine.

Out of this heritage has grown a culture of innovation that, over the years, has led to significant advances in aerodynamics, the use of high-temperature materials, thermo-analysis, balancing technologies and oil-less bearing systems. The pace of technical improvement has been staggering with advances in every element of the turbocharger, from the re-engineering of the turbine wheel and turbine housing using high stress materials to the development of advanced electronic controls.

The performance of Garrett® turbochargers is borne out by success in a wide variety of motor sports: Garrett® boosted cars won the 2004 World Rally Manufacturers' Championship; took the top ten positions in the 2004 American Le Mans Series; and have claimed every podium position for the last five years at the Le Mans 24 hour race in France.

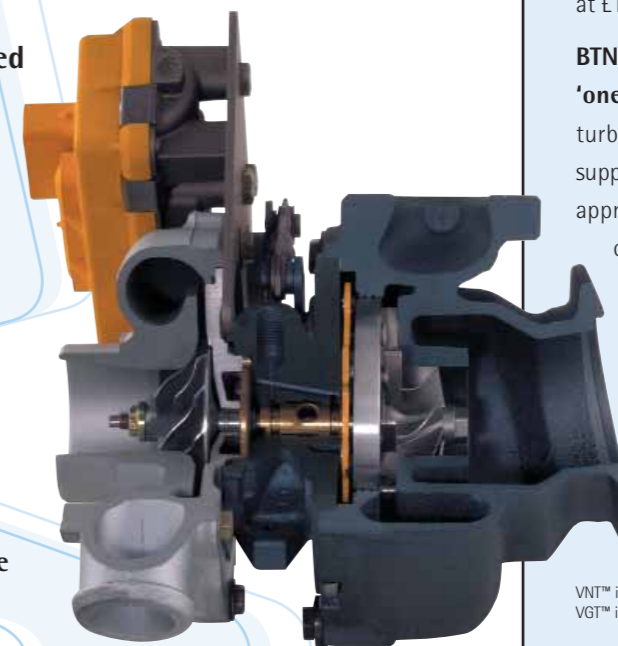
But motor sport is only one aspect of Garrett's business. Garrett® produces turbochargers for a wide range of applications, including passenger cars; light commercial vehicles; on-highway trucks; off-highway equipment (construction, agriculture and industrial); marine; and performance upgrades.

### Delivering Growth

The growth of diesel car sales in the UK has been spectacular. In the last few years diesel share has doubled and, by 2004, one in three cars registered in the UK had an oil-burning engine. At current growth levels it is not unreasonable to forecast that new diesel car sales could reach 1,000,000 in 2005. Turbocharging has been a fundamental part of the success of selling diesel engine technology to the passenger car market.

### The Future Looks Turbocharged

**As car buyers demand ever more fuel efficient and environmentally neutral vehicles, turbocharging is the dominant technology to deliver their requirements for performance, economy and lower emissions. Garrett® and BTN Turbo are committed to ensuring that we both have the service capacity to meet the surging demand that the aftermarket is now experiencing.**



VNT™ is a registered trademark of Honeywell International  
VGT™ is a registered trademark of Holset Engineering Co Ltd

## Spiralling material costs affect turbo prices

At the beginning of each year we issue a catalogue that contains our prices, which we hope to hold for the year. (The 2005 catalogue arrived on buyers' desks at the start of the year – if you haven't received your copy yet, please ask us and we'll get one straight to you.) All the main manufacturers also endeavour to keep the price consistent throughout the year.

However, you will have seen that recent orders for new turbochargers have attracted a price increase. It's unfortunate, but there is nothing that we can do about it: the manufacturers have no option but to increase their prices, due to the spiralling costs of raw materials. The price of steel has risen by more than 120% in the past twelve months and Holset reports a rise of 149% in the cost of alloys between January and October 2004.

There are a number of reasons for these rises: metal production is very energy-intensive and the cost of energy generation has risen dramatically; transportation is becoming increasingly expensive; and, as new markets are emerging, the demand for steel in particular has risen and stocks have shrunk. One of the fastest-growing users is China. Its economy is expanding rapidly, as can be illustrated by the fact that 90% of all the world's concrete is poured in China; half the tower cranes in the world are working in one city (Beijing); and VW Audi has announced that 60% of the total production of the A6 is destined for China! With its mix of heavy industry and consumer goods manufacture, China is going to use a lot of steel and alloy in the years to come and, unfortunately for all of us, that will have a long-term effect on the price.

**However, you can rest assured that BTN will continue to offer competitive prices across the range, with comprehensive technical support. We may not be able to control the factors that influence the price, but we can ensure that you'll always receive excellent value!**

# Triple-turbo tractors with *champion pulling power*

**Tractor pulling is a massive sport in the USA and it is rapidly acquiring a list of devotees in Europe and the UK. One of the leading contenders in this country is the Clarke Pulling Team, comprising Buckinghamshire dairy farmer Peter Clarke, driver Geoff Ashcroft and a mechanic and general factotum known only as 'Jeeves'. The team runs not one, but two, alcohol-fuelled Case tractors.**

For the 2004 season, the team designed and built the UK's first component super stock tractor in just eight months. "The new tractor, called Red Fever, shares engine technology with its long-standing stablemate Red Alert, which is a very successful alcohol-powered machine," explains Peter, a former European Champion and Eurocup runner-up in 2003 and 2004.

Each tractor is powered by a six-cylinder, 10-litre engine, originally diesel fuelled but converted by Peter into spark-ignition engines with heavily modified Holset HX82 turbos.

Both take turbocharging technology to extremes, as each is equipped with a triple-turbo set-up: two low-pressure units deliver air to the third turbo, which acts as a high pressure pump delivering up to 90psi through the intake manifold.

Red Fever is designed with separate components in a tubular space-frame chassis, to get power onto the track and optimise the grip. "Torque causes massive twisting forces which our rigid chassis tractor cannot absorb," says Peter. "Because the tractor won't flex, the torque eventually lifts the right-hand rear wheel. Red Fever's tubular chassis allows this torque to be absorbed, keeping both rear wheels firmly planted onto the track. Improved handling also means improved safety."

Both of the team's flame red machines retain their farm-tractor looks. Red Alert sports an older style Magnum 7250 appearance, while the new Red Fever machine takes on the MX285 styling of Case's latest Magnum tractor range.



## Putting a face to the name

**Whenever you call BTN Turbo you're likely to speak to someone in the Sales or Marketing team. However, you rarely, if ever, get to meet them face to face so we thought we'd take the opportunity to introduce the people and put a face to the name.**

**Mark Dickinson** is the Sales and Marketing Director. He has his finger on the pulse of the industry and, having spent more than half his life in automotive, has a phenomenal list of contacts. He started out at Lucas CAV



24 years ago and became fascinated by turbo technology – a passion that led him to BTN. After all, he points out, "If you're going to work in the turbo industry you might as well work for the biggest and best distributor in the business!" He lists his other interests as good food, wine, golf and cars, but we think he just copied someone else's entry from Who's Who. His favourite enquiry came from the customer who wanted to turbocharge a lawnmower!

Mark has been ably assisted by **Rachel Birch** for the last 4 years.



She enjoyed studying Marketing and loves putting it into practice with BTN; she is so committed that, when asked 'What makes BTN Turbo special', she produced several pages of glowing copy that would fill this magazine. We also asked her how she spent her spare time and she replied, "I enjoy socialising... I don't wish to incriminate myself any further." Look out, Uxbridge! Rachel once had to deal with an enquiry for "A turbo for a blue van, maybe a DAF, probably five years old and, if it helps, one of the doors is black".

Meet the people from the Sales Office  
in the next issue.

# The three golden rules to avoid turbo tragedy

The Fault Finding section of our web site helps you to diagnose problems relating to (or apparently associated with) your turbo. However, you can take steps to avoid problems by avoiding three common problems.

- 1. Keep it lubricated:** change the oil according to the manufacturer's instructions and ensure that the oil filter and pressure control are correctly maintained.
- 2. Keep the oil clean:** contaminated oil can wreak havoc with a turbo that is spinning at up to 200,000 rpm!
- 3. Keep foreign bodies at bay:** take particular care when fitting a turbo, and ensure that the air filter is in good condition. The ingress of even a small object can have the same effect as jamming a stick in the spokes of a moving bicycle wheel.

Turbochargers are made to withstand extreme operating conditions and should last the lifetime of your engine. Faults arise when they are not properly used or maintained: the three issues above account for around 90% of turbo failures.



BTN Turbo's latest web site

[www.btnturbo.com](http://www.btnturbo.com)

- there to help you

We are continuing to develop our web site to make life easier for our customers and have recently added a massive amount of technical support that can make it easier for you to obtain your replacement turbo – or even solve your engine problems without a replacement!

In addition to news and information about BTN Turbo it has the following useful features:

### Fault finding

From excessive noise to lack of power, from stalling to leaks, there are a number of checks that you can make before you remove the turbo and send it away for replacement. This useful section permits you to diagnose a host of faults and potentially save time and money.

### Turbo ID

If your turbocharger has failed, you need to replace it quickly. We offer a next day delivery service or you can collect your new turbo on the same day as the order: this page on the web site shows how to make sure that you get the right replacement first time, thus minimising your vehicle's downtime.

### Build Sheets

Manufacturers are issuing new applications every day and this part of the web site helps to keep you up to date with build sheets as they are released. It is searchable by manufacturer, part number and model for rapid access.

### Catalogue

The latest BTN Turbo catalogue, with the complete range for 2005, is easily accessed in pdf format so, if you can't lay your hands on the paper copy, you can always look at the online version to find the turbo you need.

### Contact

If you require technical advice, have a query about the turbo you need, or want to speak to us about anything to do with turbo technology, you'll find all the contacts in this section, complete with telephone numbers and email addresses.

**The web site is there to help you and we welcome your input. If there is anything else you would like us to cover, or if you have any comments about the site, please let us know.**

#### BTN Turbo Limited

BTN House, Arundel Road, Uxbridge Trading Estate, Uxbridge Middlesex, UB8 2RP, United Kingdom.  
T: 01895 466666 F: 01895 466667 E: sales@btnturbo.com W: www.btnturbo.com