FANTECH

TECH TALK

Fantech Newsletter Number 61

April 2008

New catalogue revealed at ARBS 2008

Fantech will officially unwrap its latest version of the highly informative Fans By Fantech catalogue at Melbourne's 2008 ARBS exhibition. This catalogue will supersede the 2004 version, and marks 15 years since the first version was launched in 1993.

Consultants, contractors, wholesalers, agents and students will have the chance to see some of the new and helpful information featured in the 400 plus page reference catalogue.

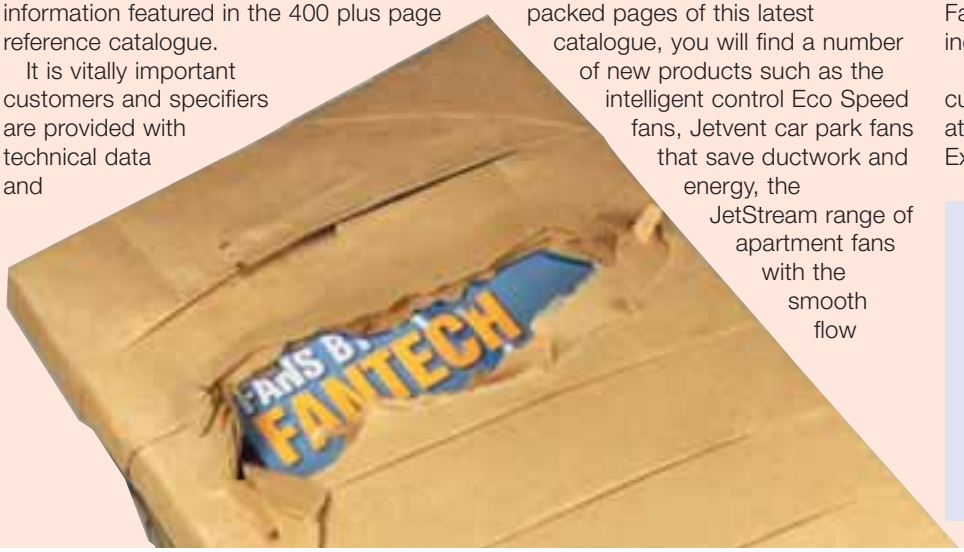
It is vitally important customers and specifiers are provided with technical data and specifications on the product range that is accurate, up-to-date, and can be easily referred to at any time. Research has shown that, in addition to the highly informative interactive product suite CD and our website www.fantech.com.au, there is a need for a hardback, comprehensive catalogue that can be referred to at anytime.

Among more than 400 information-packed pages of this latest catalogue, you will find a number of new products such as the intelligent control Eco Speed fans, Jetvent car park fans that save ductwork and energy, the JetStream range of apartment fans with the smooth flow damper and the expanded Ezyfit range.

There is also a new range of roof units that comply with the bushfire code and a number of new plug-in run-on timers. Even the "Dos and Don'ts" and wiring diagram sections have been updated. This has become an important guide for appropriate and efficient fan installation.

For the very latest in ventilation and acoustic solutions the 2008 Fans By Fantech catalogue is the must-have industry reference-guide!

A copy will be delivered to all our customers or you can order a catalogue at Fantech Stand No. 88, Melbourne Exhibition Centre, from April 21-23!



Fantech on show

Come and see Fantech's innovative new products on stand 88 at ARBS 2008 Melbourne Exhibition Centre from April 21 – 23.

Making a splash for a great cause!

Two of Australia's most famous yachts joined a fleet of the finest Australian sea craft to make a splash for a great cause!

The inaugural Variety Splash, organised by Variety Victoria, attracted some of Australia's most impressive sea-going vessels, including legendary yachts Skandia Wild Thing, winner of the 2003 Sydney to Hobart Yacht Race, and Kookaburra, of America's Cup fame.

Held from February 28th to March 1st, the 2008 Variety Splash was all about having fun around Port Phillip Bay while raising funds to make a positive difference to the quality of life of special needs children.

Laafin is an impressive 30 foot Currawong yacht, with Simon Pollard on board.

Simon has worked in Quality Control at Fantech for 20 years and spends his leisure time sailing, which Simon says is "exhilarating, relaxing and all comes together with a great sense of teamwork and camaraderie." Simon and the crew are back-to-back winners of the Round Phillip Island Race and the 2006 Winter series winner.

Laafin left Newhaven Yacht Squadron, Phillip Island, to take part in the 2008 Variety Splash, with Skipper, Kon Cili, Navigator Kevin Holt, and Simon Pollard and Mark Gardner as Crew.

Funds raised from sponsorship of the 2008 Variety Splash will contribute towards providing utilities and life experiences for Australia's sick, disadvantaged and special-needs children.

Simon and the crew of Laafin were excited to be involved in the 2008 Variety Splash. Fantech was proud to climb aboard as a major sponsor and congratulates the Laafin team on their enthusiasm and tremendous efforts.

Technically speaking

with Glen Harries

Fan stall can have such devastating effects on system performance, noise levels and a machine's life that we consider it prudent to re-run this Technically Speaking article from issue 37 of Tech Talk. We hope this will help you to quit-stalling (it's an expensive habit!)

Fan stall

One of the more common complaints received about fan performances is "the fan is developing the design pressure but we are only getting half the airflow". Often there is an inference the problem is caused by the fan but it must be remembered the fans are not unique as they are made from standard components, are assembled in a controlled environment and are tested. It is the installation that is unique. With this in mind the odds are the problem is with the system and the impact the system is having on the fan.

So, what has happened?

Well, from the description of the problem, there is a high likelihood that the fan is running in stall.

Although stall is most commonly experienced with axial flow fans, it also occurs with forward curved centrifugal fans, although to a lesser extent.

This article will discuss stall, how it occurs, how it can impact on the fan, what its impact is on the performance of the system and how to avoid it. We will concentrate our attention on axial flow fans in this instance.

What is stall?

Stall can be defined as that condition where there is a breakdown of the flow of air over the fan impeller and, as a consequence, turbulence is generated. This turbulence stops the impeller from generating sufficient lift, or pressure, to overcome the system resistance.

What is lift?

Lift is produced by the flow of air over an asymmetrical object. An aerofoil axial impeller blade generally has a flat or concave surface as its underneath profile and a convex surface as its upper surface so the air path along the flat or concave surface is shorter than the convex surface, similar to the wing of an aircraft. When the impeller is rotated, the air passing over the shorter surface reaches the trailing edge before the air which is passing over the longer surface, see Fig.1.

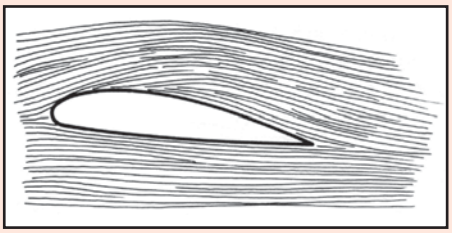


Fig 1 When a blade is propelled through the air it produces lift

This causes a small negative pressure to be created and this pressure difference creates the resultant lift. The resulting lift is proportional to the shape of the fan blade, its area and velocity, as well as the angle of attack, or blade angle.

In the case of an aircraft stall occurs when the velocity of the air across the wing section is insufficient to produce enough lift to overcome the weight of the aircraft.

One of the most common causes of aircraft stall is when the rate of climb is too steep to maintain enough velocity and to generate sufficient lift to support the weight of the craft, see Fig. 2. It can normally be

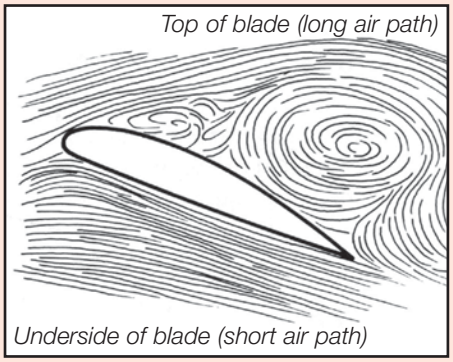


Fig 2 Stall, angle of attack too great. Lift will not support weight of aircraft or back pressure of fan. Air breaks away from the blade

corrected by reducing the rate of climb such that the aircraft's forward velocity can be increased. An axial fan, which is in stall, can also be taken out of stall by reducing the fan's pitch angle, which is the fan equivalent to the steep rate of climb of an aircraft. If the pitch angle is reduced it is possible the airflow will increase as the fan would now be operating on a stable part of its curve.

How do you know when a fan is in stall?

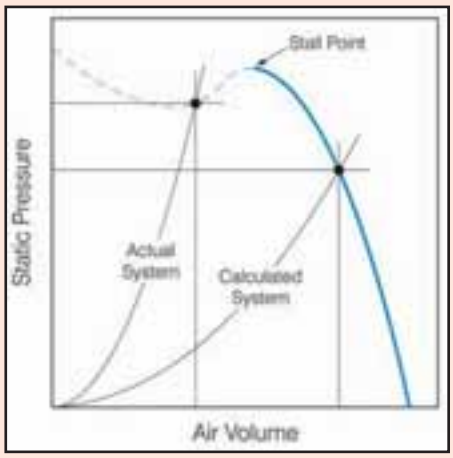
When a fan is in stall, it will produce a distinctively "fluctuating" noise and its performance will generally be well below design. In addition, it is common for the air performance to 'hunt' between two or more points of operation, which causes the intermittent change in the fan noise.

When a fan is working in its normal operating range the fan volume will decrease as the pressure is increased. However, at the point of stall the fan curve "collapses" and there is a decrease in pressure as well as a decrease in volume. This phenomenon is illustrated graphically in Fig. 3. In this situation the airflow can fall to 50% or less of design airflow.

How to avoid stall?

A. Be conservative when selecting axial fans. Try and make your initial selection at no greater than 80% of the peak pressure.

B. Make proper allowances for inlet and discharge losses. Axial catalogue data should detail basic installation effects ie. Types A, B, C or D installation as shown in

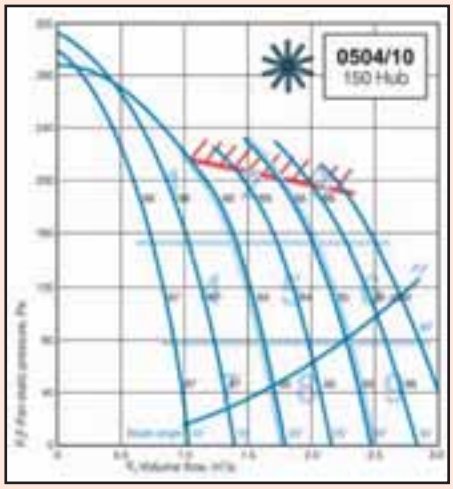


Section B of the "Fans by Fantech" catalogue. The effect of the installation 'Type' can have a major impact on the performance of the fan. If this information is not shown it is possible the fans have not been tested, or were originally but to an out-of-date Standard.

C. Avoid poor inlet conditions as these can starve part of the impeller of air and can cause stall. A good installation will ensure the airflow is spread evenly over the entire impeller. Section O of 'Fans by Fantech' provides a good guide on what is acceptable and unacceptable practice for fan installations. If the fan is not installed in accordance with these recommendations you can expect to have problems.

D. Ensure the system resistance is accurately calculated.

E. Try and avoid selections in the area shown cross-hatched in Fig. 4. A rough guide would be to avoid selecting axial fans above 80% of their peak pressure except where the pitch angle is less than 150°, or where there is confidence in the estimated value of the system resistance.



F. Avoid pitch angles above 30° unless the system resistance is low.

Stall is a serious problem which, as well as delivering an underperforming and noisy system, can cause blade failure because of the undue blade stresses which can be imposed.

Fantech in a world of great luxury

The Venetian Macao – where glamour meets romance, indulgence meets excitement and thrills meet luxury!
The Venetian Macao offers guests the best of everything. The 3,000 luxurious suites with plush fittings and Italian marble bathrooms, 350 shops in baroque style buildings along a Grand Canal and 40 restaurants featuring cuisine from around the world, are the hallmark of this Resort-Hotel. It also includes 100,000 sq.m of lavish convention and exhibition facilities that effortlessly accommodate events of any size.

Adjacent to The Venetian Macao, Parcel 2 is a boutique hotel with approximately 400 luxury hotel rooms, around 75,000 sq.m of Four Seasons-serviced luxury apartments, distinctive dining experiences, a full service spa and other amenities, a 4,200 sq.m casino and around 20,000 sq.m of upscale retail offerings.

Through its Hong Kong agent, Anway Engineering Co. Ltd, Fantech supplied a total of 116 fans for Parcel 2. This exciting major development required Axial In Line fans, including Smoke Spill fans.

Above: Venetian Macao Grand Canal replica.

Smoke is the greatest hazard and the cause of the majority of fatalities in building fires. Smoke Spill fans are vitally important in ensuring the safety of Venetian's guests in that they allow safe exit from the building in the event of a fire, and ensure that the fire fighting service can quickly gain access to locate and extinguish the fire.

SELECTION PROGRAM TIPS NUMBER ONE

Finding Technical Data

The key to locating technical data on a fan when it has already been specified, on a quotation for example, is to first determine which of the three main fan types it belongs to.

General Products covers the bulk of our product ranges and is easily searchable by Product Code. By then inputting Volume and Static Pressure, more accurate data to the fan's performance is given; these values are shown in the quotation detail.

Axial Adjustable Pitch Products and SWSI/DWDI Centrifigal fans require input of volume and static pressure to be selected. Each of the sub-types of Axial Adjustable Pitch Products are linked to a product code, such as AP, SQ and RDE – refer to our Fans by Fantech Catalogue for full details.

Once you have clicked 'Select Fan', scroll through the list to find the product code you require. After finding the fan, you can view performance and technical data (Performance Data), link to the website for a full list of features and ancillaries (Product Spec./Ancillaries) or view and save a DWG/DXF drawing (Drawing).

Neutral carbon foot-printing

In line with our commitment to reducing impact on the environment, Fantech is proud to have this newsletter printed by Mystique Print, the first printing company in Australia to go greenhouse neutral through the Greenhouse Friendly™ initiative.

'Mystique has implemented comprehensive water, waste and energy management procedures that greatly reduce the greenhouse gas emissions we produce', said Mystique Environmental Manager, Mat Eldred.

'Mystique will monitor and report on its emissions each year and will purchase abatement through Greenhouse Friendly™ approved projects including recycling, waste diversion, energy efficiency and forestry activities', Mat Eldred said.

Discover more about Mystique's *'natural approach to print'*. Visit *www.mystique.com.au*.

FREE MINI FAN

Present this coupon at the ARBS Fantech Stand No. 88 and receive an exclusive Fantech LED Mini Fan!

Come and see us at ARBS 2008!

LED Mini fans can only be collected from the Fantech stand at ARBS from the 21st to 23rd April

Limit of one LED MiniFan per voucher

Limit of one LED MiniFan per person

Milestone – O.P. Industries 15 years

A 15 year success story for O.P. Industries, Melbourne

Founded in Wangaratta by Lou Onley and Graeme Plumridge, O. P. Industries opened its Melbourne office in conjunction with Earl Sakareassen in 1993.

With Earl at the helm, the Melbourne operation has grown steadily to be currently one of the leading Mechanical Services contractors in the state.

Reaching the 15 year milestone is a source of great pride for Earl Sakareassen, who attributes much of the success of the Melbourne operation to the loyalty and dedication of the staff at O.P. Industries Melbourne.

"The 15 year milestone for the Melbourne operation is mainly due to the great support from my staff, who have proved their loyalty over this time," says Earl. "Most of the senior staff have been with the company since its first few months of operation, remaining focused through a buy out and assisting greatly when I was in negotiations to re-acquire the business. It gives us all a great sense of satisfaction to understand what the company has achieved in its relatively short life.'

Earl speaks proudly of O.P. Industries' track record for successful apprenticeship training.

"Certainly one of our main achievements over the years has been our ability to train and teach a number of apprentices and trainees who are now respected in their own right in the industry."

Offering every client close and personal attention has been the hallmark of success for O.P. Industries over the years, and has contributed to many significant achievements for O.P. Industries Melbourne. As Earl says, "the recent completion of many high profile projects, in particular, Freshwater residential, is testament to the quality and abilities of our staff."

Involved in the industry for 37 years, Earl is the immediate past president of the Victorian division of the Australian Mechanical Contractors Association (AMCA) and still holds a current board position.

Of his involvement with Fantech, Earl says, "I have had a very long association with Fantech and am old enough to remember when they started as Air & Noise with Glen Harries and Jack Pirie at the helm. They have been an industry benchmark for many years."

Fantech congratulates Earl Sakareassen and O.P. Industries on achieving their 15 year milestone.

Above: Process pipeline at Fontein in Cobram, Victoria. Below: (left to right) Earl Sakareassen – Managing Director, Brendan Dozzi – General Manager, O.P. Industries (Melbourne) Pty. Ltd.

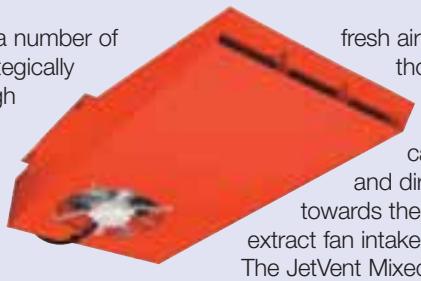
PRODUCTS NEWS

with Kerry Dumicich

Impulse JetVent Range Extended

The Fantech Impulse JetVent range has now been extended to incorporate the growing need for a more general solution to car park ventilation requirements. In addition to the current range of JetVent Axial and Centrifugal fans, the new JetVent Mixed Flow series is designed to provide general ventilation in applications such as fully or partially enclosed car parks and vehicle bays.

Impulse ventilation is based on a number of small, strategically located high velocity jet fans mounted directly beneath the ceiling, in place of the distribution ductwork traditionally used in car park ventilation systems. The system provides constant airflow movement around the car park to ensure harmful pollutants do not gather and accumulate in dead areas.



JetVent Mixed Flow

The induction fans are carefully positioned to bring fresh air in, thoroughly mix the air in the car park and direct it towards the main extract fan intake points.

The JetVent Mixed-Flow unit includes a Low-profile powder coated galvanised steel housing with an aerodynamically designed internal flow element that makes it ideal for car parks with a low ceiling height and obstructive structural beams. It provides uni-directional airflow and is suitable for ambient operating temperatures under 70ºC. The mixed flow impeller, fitted with a three-phase 415V, 50Hz motor, offers powerful air movement capabilities.

The JetVent Mixed-flow unit together with the JetVent Axial and Centrifugal units provide an innovative and efficient solution to ventilating fully or partially inclosed areas where harmful pollutants exist.

A bigger move for Eltafantech Malaysia

With continued growth since beginning its Malaysia operations in December 2005, Eltafantech has now opened the doors of their new office, to better service the needs of their customers.

Due to the development of new markets throughout India, Sri Lanka and Taiwan, as well as a greater demand for Impulse car park ventilation systems, Eltafantech required bigger premises and so moved from the original factory of 860sq.m into their new, much larger facility of 3,300 sq.m. Eltafantech is perfectly positioned to increase business efficiency, offer even greater customer convenience and service, and to further develop the business.

The facility consists of offices for administration and management, an assembly and production area which includes testing, and a large area for warehousing.

As Peter Lester, Managing Director of Eltafantech says, "We also benefit from having very strong support from the professional team at Fantech, our parent company in Australia, along with additional support from the other companies within the ELTA Group."

Eltafantech Office Malaysia

Peter, a permanent resident of Malaysia for 11 years, enjoys the local culture with his family and has been heading up operations at Eltafantech Malaysia since its inception in 2005.

Peter has a strong vision for the future of Eltafantech, "We will continue to focus on our customers and put them at the centre of everything we do."

Eltafantech's larger new premises demonstrates its commitment to providing its customers throughout Asia with technical expertise and the highest quality of products and customer service.

Fantech opens new office in NT

The prospect of new challenges, warmer weather, and bigger fish on the end of his hook has lured Sales Engineer, Ray Werret, to head up Fantech's new operation in Darwin, due to open in May.

With 17 years of sales engineering experience with Fantech to his credit, Ray is looking forward to bringing better levels of communication and customer service to the Darwin and the Northern Territory customers.

Located at Unit 2/74 Winnelle Road, the new 170 sq.m office/warehouse with mezzanine floor is strategically positioned amongst the major industrial and commercial area to offer the market easy accessibility to the service. Fantech Darwin is able to hold most stock to meet the requirements of the local market.

> *"...it's great to know I have the backup and support of the Fantech team!"*

Ray Werret believes that the Northern Territory "is really forging ahead, and our new Darwin office and warehouse represents a fantastic opportunity for me and Fantech."

Ray sees his responsibility for the day-to-day running of the Darwin office as an exciting challenge "it's a bit like leaving home and having a go out there yourself."

This is an exciting time for Ray, as he leaves his 'home' of 17 years at Fantech Melbourne and moves into his new Darwin office. As Ray says, "I've always loved being part of the Fantech family, so even though I'm thrilled to be running the Darwin operation, it's great to know I have the backup and support of the Fantech team!"

As Ray embraces his tropical lifestyle, he's looking forward to bringing greater levels of customer service to Fantech's Northern Territory customers … and of course the fishing!

(From left to right) Scott King, Fantech Adelaide Branch Manager and Ray Werrett at the new Darwin office

Building a Healthy Future for women

Due to open its doors in June 2008, the new $250 million Royal Women's Hospital (RWH) in Melbourne will offer specialist women's medical and maternity services, as well as a new world-class Research Centre, to the women of Victoria in a brand new state-of-the-art building.

Located next door to The Royal Melbourne Hospital, the new RWH will be strategically placed to offer Victorian women services specifically designed for them, along with better access to The Royal Melbourne Hospital's critical care facilities.

The Royal Women's Health Partnership, led by Bilfinger Berger with builder Baulderstone Hornibrook commenced construction on the new 40,000sq.m RWH in April 2005. A.E.Smith is proud to have been awarded the Mechanical Services contract installing approximately $18 million of air conditioning equipment, utilizing numerous specialist subcontractors and suppliers, of which Fantech has played a significant part in delivering this project to the State of Victoria.

The site team, led by Ric Mitchell worked with Fantech during the construction period, installing many assorted fans in the wards, theatres, delivery rooms & administration areas.

An integral part of the three year construction process was to ensure adherence to environmental measures such as water saving and waste minimization. 90% of all waste from the site (such as wood, scrap metal, glass and cans), is being recycled.

The new RWH will retain its status as a major teaching, training and research hospital, providing world-class care for women of all ages; obstetric and gynaecology services, reproductive services, sexual health services and cancer services.

Royal Women's Hospital Melbourne

Each year, the Women's will deliver more than 5000 babies, care for over 2,000 premature and ill babies in their neonatal intensive and special care nurseries, perform 11,000 same day procedures and carry out 12,000 operations.

The new hospital has been designed to meet the needs of women: birthing suites will be equipped with large beds, ensuites and baths and many of the little touches that will enhance the birthing experience. The new RWH will offer women choices in options for care, continuity of care and carer and control over the decision-making process.

Fantech is proud to be involved in a project of such vital importance to Victorian women and their babies.

The new Royal Women's Hospital – building a healthy future for women.

WOULD YOU LIKE MORE INFORMATION?

Please contact me regarding: ❒ JetVent Mixed Flow Impulse Fan

❒ Please send me a copy of the Fans by Fantech Product Selection CD.

❒ Please send me a copy of the NEW 2008 Fans by Fantech Catalogue.

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