



# Inter-Resting News

## From The Desk of the MD

Welcome to the Companies second employee "Newsletter".

Last newsletter we spoke about "creating a point of difference" to our competitors:

*"Keep on thinking and doing something extra or different for our customers that is meaningful and appreciated"*

We currently have a great company culture and the feedback /compliments from some clients in respect to technician's performances in the field and also of our office staff has been well received and noted.

Our "Can Do – Stand and Deliver" culture and attitude is expressed throughout this newsletter issue – something we all should be proud of. This culture extends from our Company Code of Ethics that we committed to some 15 years ago and I urge that we keep these values "alive and kicking" and reflected in everything that we do within our work environment on a daily basis.

### COMPANY CODE OF ETHICS

As a Proprietary Limited business in the HVACR industry we pledge to:

1. Recognise an obligation to our profession of competently safeguarding the health and welfare of humanity throughout the course of our work.
2. Assume always the responsibility of promoting harmony and goodwill amongst our associates, clientele, competitors, and industry participants.
3. Forever strive to understand the principles of sound business and to practice honesty and sincerity at all times.
4. Be of good moral character, carefully guard and retain the confidence and respect of our community and those we serve.
5. Deal fairly with our associates and avoid discrediting others in our profession.
6. Recognise the necessity of knowledge and devote a part of our time to educational study in keeping abreast of our industry.
7. Be ever mindful that "Better Service Through Knowledge" is a fundamental attribute toward dignity and recognition by our profession as a specialist air conditioning and refrigeration engineering company.
8. Accept each call, need or enquiry whether from small or large sources as equal and promptly react in a professional manner.
9. Always strive for quality throughout all disciplines of our business in conjunction with Quality Assurance Standard ISO 9001:2000 and Occupational Health and Safety Standard AS 4801.
10. Where possible, advise our clientele of cost effective and practical options other than their original perceptions.

**To all Employees and Specialist Sub-Contractors - Keep up the Good Work – Thank you!**

*Graeme Blackman*  
MANAGING DIRECTOR

## Business Manager's Report

We are now well into the final month of the 2009-10 financial year and I am pleased to advise Inter-Chillers has achieved another great result with gross sales and profit exceeding budget and the previous year.

Our Projects Division has had a busy year as too has our Melbourne office posting their best financial result since inception in 2002. After four years of servicing 50% of Retail Supermarkets in Victoria and NSW we have now been awarded 100% of their sites in both states. This is a testament to the excellent work of our management, administration and field staff, who continue to provide a high level of professional service. **Well done all of you.**

Our full review and re-write of our OH&S Management System is well under way and is being led by Tracey Bell and WorkCover Consultants, Mutual Solutions. We expect to issue revised safety material and training in the next few months.

Our Apprenticeship Program is in the final stages of some improved changes that will provide better rotation and allocation across our work sites and technician base, the introduction of weekly 'experienced gained' reports, and an internal competency based assessment. We expect to hold a training/briefing session for apprentices and technicians in the next few weeks.

Group Certificates will be mailed out on July 1<sup>st</sup> along with superannuation contribution advices for the 2009/10 year.

In closing, I would just like to say thank you to all our staff for their endless loyalty and hard work that has set some new financial records this year and makes Inter-Chillers a respected leader in our industry and a great company to work for.

*Steve Workman*  
BUSINESS MANAGER

## VIC State Manager's Report

Our Melbourne office continues to grow in experience, reputation, clients and results. To all of the team "congratulations", well done!!

Coles/City relationship continues to grow, for how long is unsure but I am pleased with the feedback from high level Coles/City Management who continually express their gratitude to all concerned.

We look forward to further work from existing retail clients with some major plant upgrades in the near future as the equipment ages and reaches the end of its serviceable life.

We at Inter-Chillers Melbourne with a "can do" attitude are slowly establishing ourselves in the mid range installation bracket and find a strong allegiance with PowerPax / Turbocor Danfoss compressors developing in installation, servicing and commissioning.

Work was recently completed on the addition of three offices, opening up of the reception area with a new filing area developed upstairs for easy access. HVAC Heating and Cooling colors (maroon) and (aqua) were introduced on alternate office walls, all reports it is working well.

CONGRATULATIONS to all in the Victorian operation reflected by an outstanding year result, well done and keep on continuing to do well what we do best!

*Geoff Sharp*  
VIC STATE MANAGER

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## Inter-Marine Report

Inter-Marine has been very busy this previous six month period which has included an \$80K investment in building and fitting out a 20' mobile container docking workshop. We have used it twice so far on the Sun Princess and Pacific Dawn Dry Docks and have it booked for two more overseas dockings later this year.

We have recently sent technicians to the Caribbean Barbados, Athens Greece, Venice, Singapore, Sweden, New Zealand, a cruise circumnavigating Australia and also over to India working on special cruise ship projects, so the name Inter = (**International**) is now realising its "just meaning".

### "WORLD FIRST SHIPPING OZONE FRIENDLY GREEN REFRIGERANT RETRO-FIT"

Inter-Marine recently claimed a successful world first refrigerant retro-fit to numerous systems onboard Australia's first super cruise liner MV Pacific Dawn during her recent Brisbane Dry Dock in May 2010.

All retrofitted systems originally utilised HCFC R22 refrigerant and were converted to Dupont's new ozone friendly MO99 Isceon refrigerant.

6 x -20.0oC Freezer rooms (Total 600 M3) serviced by twin Stal Screw condensing units, 24 x +4.0oC Cool rooms (Total 2,620 M3) and all ships Galley, Pantry, Bar under counter fridges serviced by twin Stal Screw condensing units were retro-fitted. 5 x Reciprocating DX Critical air conditioning plants were also changed to MO99, which service the main electrical switch rooms, ECR rooms, Communications Room and Hospital.

The retrofits were done live, with over \$750K of provision stock in the rooms, so the pressure was on – well done Ian, Cary, Aaron and Luke and also to Chris Wirtanen – our IM agent from Four Seasons AC Qld - "A Special Association for 40 Years now" .



Aaron on the ECR



Rosco playing in the container



Call to arms- moving 300Kg



World First A-Team

## Admin Manager's Report

Although going through some major adjustments over the last few months the admin staff, in their usual positive style, have pulled together and worked through the changes without any disruption to our operations or high level of customer service. If you've been into the office recently you'll notice we've all moved around a bit (some of us several times). We are now looking forward to some more exciting changes about to take place in the form of "blinging up" the office (following Melbourne Office's lead) with a nice fresh renovation being planned in the next month or so to give us a fresh face heading into the new financial year – more details (and hopefully photos) in the next issue. We are also in the process of hiring a new assistant to help Grahame, Darren and Jas with their task of servicing the additional Retail NSW stores recently awarded.

*Tracey Bell*

ADMINISTRATION MANAGER

## Safety First

The last six months has seen some significant changes in the company's OH&S procedures with the ongoing audit and review of our OH&S Management System. This is an important task and one we recognise will need to be continually monitored and reviewed as Inter-Chillers grows and changes within the industry. Tracey Bell and Andrew Stuart have been nominated and accepted as the company's OH&S Management and Employee Representatives respectively and will work in conjunction with management and employees to continue our exemplary record of safe work practice within the industry and ongoing compliance with current legislation.

Our ongoing commitment to training and educating our employees, particularly our field technicians, will continue with the implementation of monthly toolbox talks. We will also be re-inducting all employees and doing refresher training in on-site risk assessment and completion of work method statements as part of the implementation of our new OH&S Management System.

## On The Job

### Inter-Resting Projects:

#### NSW – Graeme Economos, Project Manager



If this (now famous) chiller looks familiar, it's because it was proudly displayed by PowerPax at the 2010 ARBS show. After the show it was disassembled, transported and rigged into the 140 Sussex Street, Sydney plant room, via the elevator service hatches. With some help from a few riggers and Marco Christofordis, Andrew Stuart rebuilt and commissioned the chiller into service on the 8<sup>th</sup> June 2010 which was 3 weeks ahead of schedule. Both the client and consultant were very happy. Thanks guys and well done. I would also like to take this opportunity to thank:

- Stephen Doel and Owen Mackay for their great work on the ASX (new chiller) project.
- Adrian Cherry for commissioning the new 820 Kwr air cooled PowerPax chiller at Eli Lilly Ermington.
- Ian Campbell for the Agrana Fruit factory cooling tower upgrade.



#### VIC – Geoff Sharp, VIC State Manager



Level 52 chiller strip down

Preliminary stages of a major upgrade at a data centre has commenced with new Buffalo Trident Air Cooled condensers being selected for high ambient conditions. We are currently into the final stages of installing two "Split Vessel" PowerPax chillers into 120 Collins Street, 1 x 2100 kw on level 52 and 1 x 980 kw on level 5. The project involved the demolition and removal of the Trane centrif on level 52 via a lifting gantry from the lift motor room, hoisting three floors and the same for the recip chiller set on level 5 taking down the goods lift for removal.

The new chillers were stripped at the TMR Rigging yard and delivered to site in "knock down" form, positioned and reassembled in situ, yes a first but many hours of sleep lost re-measuring to fit the lift. The major components being 1.5 tonne and 2.6mts long a lot for manual handling, repositioning gantry's etc., a great achievement.

Yarrowonga Golf Club, PowerPax Chiller and Casino change over to CHW and HHW stage one is running trouble free with stage two, to convert the remaining plant to CHW and HHW due to commence with equipment ordered and completion in twelve weeks.



Level 52 chiller in position



Lifting Level 52 chiller into position



Yarrowonga Golf Club

### Inter-Resting Service Work:

#### Strip Down/Rebuild PowerPax Chillers – Stuart Rothemund, Service & Maintenance Manager



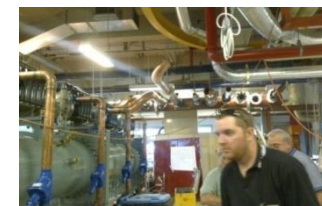
One of the RBA chillers

Continuing our ongoing relationship with Powerpax our Service Department, in conjunction with our Projects Division, were involved with six PowerPax strip down/rebuilds during the month of May. Three chillers are being installed at the Reserve Bank, Sydney head office, with additional chillers being installed at 33 Alfred Street, Sydney, 140 Sussex Street, Sydney and 201 Miller Street, North Sydney.

These jobs start in the riggers' holding yard and involve removal of pipe work, electrical, switchboards and compressors then splitting evaporator and condenser vessels (if split vessel type). The chillers are then rebuilt within the building's plant room. The jobs are carried out under challenging construction time frames, our dedicated service techs strive to deliver and

always complete the task at hand to the highest standard and within the allotted time.

We have a team of technicians that have undergone intensive training both at Powerpax and onsite. Inter-Chillers techs are geared up with the correct tools and software to interrogate the Powerpax / Turbocor Danfoss compressors and other chillers for any commissioning, service troubleshooting and installation.



Steve focusing on PowerPax chiller

#### Target News – Grahame Barker, Account Manager

We recently carried out an installation of a multi head split system at Target Carlingford, "so what's so special about that?" you might ask.

The work schedule was planned and the office staff were requested to vacate the area for 6 days to allow for the works to be undertaken, the installation was started as planned on Friday the 7<sup>th</sup> May with the boys booked in early Saturday morning to get the pipe work and electrical installed through the trading floor prior to the store opening.

Target's Facilities Manager called on Friday afternoon advising the offices were required Monday morning for an interstate conference call and the A/C installation had to be completed by Sunday afternoon or the work order would be cancelled he said. While Grahame Barker called the client to put him at ease and to reassure him we would meet his deadline Darren Perry was frantically calling all and sundry to get a team together to meet the challenge. I am happy to say we called the client on Saturday afternoon with the news that the job was done with a day to spare.

Special thanks must go out to Darren Perry, Andrew Webb, Paul Rossi, Michael Tsivis, Luke Costello and Ernie Guttenbrunner for a job well done at such short notice – **Bring on Another!**

## Who We Are – Employee Profiles

### Christine Cambridge – Service Co-Ordinator, NSW



*How long have you been with Inter-Chillers?*  
**7 years.**

*What type of work were you doing before?*  
**I was a merchandiser for Reckitt Benkheiser.**

*What made you choose this type of career?*  
**I worked in a bank after I left school and I wanted to return to office work.**

*What is your favourite job at Inter-Chillers?*  
**Dealing with the boys??**

*What is your least favourite job at Inter-Chillers?* **Dealing with the boys!!**

*What would you consider your greatest achievement?* **Producing three wonderful children and Wazza!**

*What was your most embarrassing moment at work?* **We don't have enough space, let's just say numerous falling incidents and the above photo, thanks to Inter-Chillers for the stylish hat (also one of many – it was this or the one with the moustache or the one with the big paper flower in my hair).**

*What was your scariest moment at work?* **Falling down the stairs last Friday.**

*What interests do you have?* **Balance, shopping (overseas and on the net), travel, then once I get back up again, wine.**

*Do you have a nickname?* **Pissy Chrissy (2009 Christmas Party).**

*Do you play any sports?* **I don't need to; I get enough exercise just trying to stay upright.**

*Where did you grow up?* **Bexley, NSW**

### Dave Mackie – Service Technician, VIC



*How long have you been with Inter-Chillers?*  
**Almost 4 years.**

*What type of work were you doing before?*  
**Working for another A/C company as an apprentice.**

*What made you choose this type of career?*  
**My step dad worked for Actrols and I did work experience in high school in the trade.**

*What is your favourite job at Inter-Chillers?*

**Working with fellow workmates, head chef of toolbox meeting BBQ's.**

*What is your least favourite job at Inter-Chillers?* **Listening to Sharpie's advice (only joking), seriously...call-outs on a Friday arvo on the other side of town.**

*What would you consider your greatest achievement?* **Buying my first house.**

*What was your most embarrassing moment at work?* **Probably every Christmas Party.**

*What was your scariest moment at work?* **None at work.**

*What interests do you have?* **Golf, cars, AFL, live music.**

*Do you have a nickname?* **Mackie.**

*Do you play any sports?* **Golf.**

*Where did you grow up?* **Melbourne, VIC.**

## What's News?

**New Starters:** NSW: Sam Williams, Luke Costello, Michael Tsivis (came back to us – found the grass isn't always greener on the other side!)

VIC: Nicola Higginson, Trent Krzywinski

**New Roles:** Steve Workman has been confirmed in the appointment of Inter-Chillers Business/General Manager directly reporting to the Directors of the company. We ask all employees to assist Steve in this now formalised role.

Doug Everett will now work three days per week assisting management with quotations and a new role of overseeing warehouse activities.

**AWOL:** Ross Di Bartolo (Rosco) has taken five months' leave of absence to travel overseas and try his luck at some County cricket in Sussex England. He should do well as the Pom's aren't much opposition!! Unfortunately he's a slow wrist spinner and can't bat – Keep up the texts – see Shayne Warnies web site Rosco!!

**Engagements:** Pat Soper (to Fiona)

**Weddings/Births:** Nothing to report (come on guys!!)

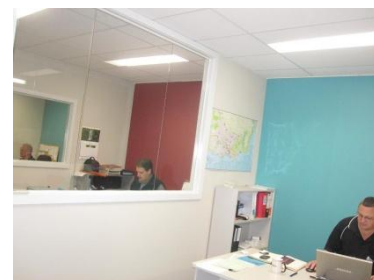
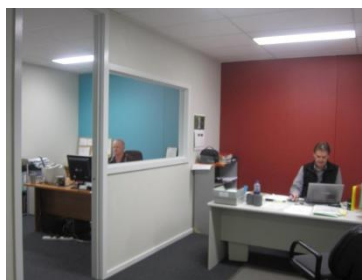
**Milestone Birthdays:** Marco Christoforidis (18), Andre Sokolowski (60)

**In Memoriam:** Mark Fenton - Haden Norfolk Group (52 years old. Was one of Graeme Blackman's Frigrite Melbourne Apprentices).

### Melbourne Office Refurbishment:

Recently Inter-Chillers Melbourne office extended the upstairs office area by opening an area of the passage way wall and building across into the factory area. While still maintaining plenty of lower level storage area in the factory three new management offices were built which in turn provided a much larger reception area and meeting room.

The works were done very professionally and with minimal disruption to office staff. The new offices (plus some of the existing ones) were painted in fresh vibrant colours and with a few extra split units installed now provides a good home for years to come.



### Darren's Plucked a Winner!

HVAC&R Nation recently named Darren Perry their winner in their "The Lighter Side" photo competition. His entry (a picture of a bird's nest) shown below scored him a bottle of Jim Beam – Congrats Darren!





### GURU'S TIP

In the last issue we mentioned checking water flows through chiller vessels by two methods, pressure drop and pump pressures. Now we'll expand on that a little.

#### Vessel Pressure Drop Method:

As water flows through a vessel (or pipe, or boiler, or heat exchanger), the resistance causes it to lose pressure. This pressure loss is specific to each particular vessel and a manufacturer will measure a particular flow rate for each type or model of vessel and then measure this pressure drop. Once this is known at any point, the actual flow can be calculated for any pressure drop, as the flow varies to a fixed formula. I.e. The flow varies to the square of the pressure drop. Simple enough?

The formula is expressed as: 
$$\text{Actual flow} = \sqrt{\frac{\text{Actual PD}}{\text{Design PD}}} \times \text{Design Flow}$$

Now, let's have an example. Let's say we know the design chilled water flow is 20 l/s and the design pressure drop is 35 kPa. We measure the pressure drop as 25 kPa. Remember if possible, use the manufacturer's pressure tappings and not field installed points down the line somewhere as every elbow, valve and fitting adds resistance. We put these numbers into our formula; 25 divided by 35 equals 0.714. The square root of this is 0.845. 20 l/s multiplied by .845 equals 16.9 l/s. One more

Same vessel but this time we measure the pressure drop as 48 kPa. So 48 divided by 35 equals 1.37. The square root of this is 1.17. 20 l/s multiplied by 1.17 equals 23.4 l/s.

See! I told you it was simple.

#### Pump Pressure Method:

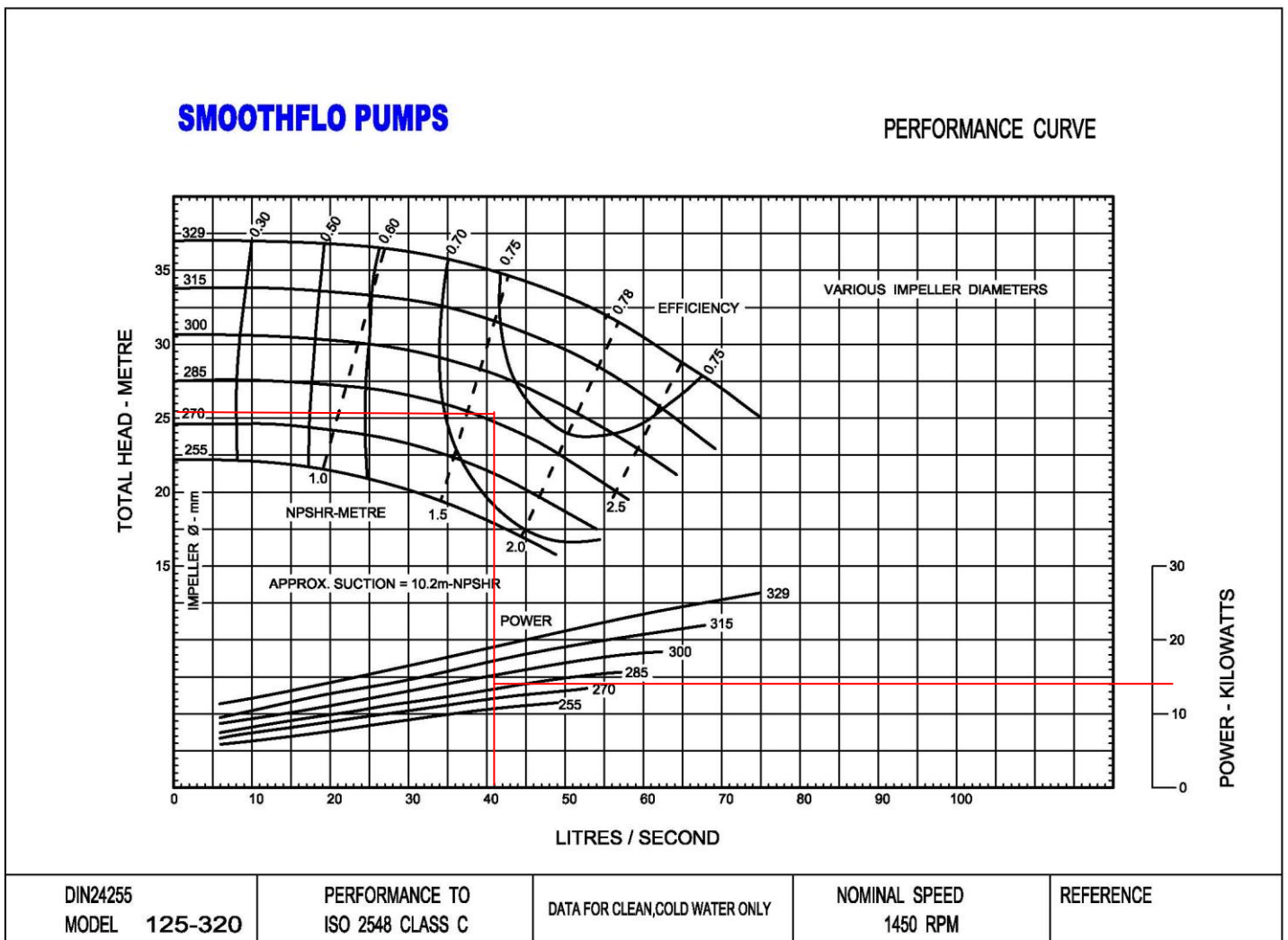
This method is also simple. We just need to take two pressure readings (sometimes at two conditions) and plot the flow on the pump manufacturer's performance curve. Again there will be a separate curve for each pump model, and for each particular impeller fitted to a pump. To begin we need to understand a pump curve and a typical one is shown below. The X axis (horizontal) represents flow whilst the Y axis (vertical) represents head or lift or pressure rise. The curved lines sloping down from left to right represent the actual impeller curve. This graph shows six different impellers that could be fitted to this pump model. In fact any size impeller between 255 mm and 329 mm could be fitted, and manufacturers will make the impeller diameter to suit a specific duty. It's ok to draw more impeller curves to suit the actual impeller, and that's where our second pressure readings come in, but more about that later. The straight lines in the bottom section that rise from left to right are again impeller curves, but these are used to calculate power requirements and intersect with horizontal lines drawn from the power figures at the right of the graph. The upside down curves at the top of the graph intersect the impeller curves to show efficiency but we won't worry about them.

Now, let's take some readings. Measure the pressure at the pump inlet and outlet and that's as close as we can get to these points. We don't want check valves, strainers or isolation valves affecting our readings. These two figures give us our total head and remember total head is the difference between suction and discharge pressure, so we have to consider whether the suction pressure is positive or negative.

If it's positive we subtract it from the discharge pressure to get total head. If it's negative we add it. eg. suction pressure 20 kPa, discharge pressure 300 kPa, total head 280 kPa. If the suction pressure is -20 kPa and the discharge pressure is 300 kPa then the total head is 320 kPa.

If we know for sure the impeller diameter we can now move to our graph, but if not we need to take our second reading, and this is called the "Stalled Head". We now take the suction and discharge pressures with the discharge valve closed. Don't worry, it won't hurt the pump to run like this for a minute but be sure to close and open the valve with the pump turned off. Again we want total head and if we come up with a figure of say 275 kPa, we can look at this point on the Y axis and see that this lines up with a 285 mm impeller.

If in operation we measure our total head as 250 kPa (or 25 metres), we enter the graph at this point on the Y axis and draw a horizontal line until it intersects the 285 mm curve. From this point we drop vertically until we meet the X axis and we can see the flow is 40 l/s. Our vertical line also crosses the power curves, so if we take the point where it crosses the 285 mm line and draw a line to the right we can see that we will be using about 14 kW.



That's all there is to it, so next time you have some doubts on flow, just grab a gauge, a curve, a calculator and give it heaps. Remember, there's nothing to fear but fear itself. Of course if you destroy a pump in the process, just remember the Guru's real name is **Fred Bloggs**.