

NEWSLETTER

FLOWFORCE GOES GREEN

Flow Force Technologies has entered a new era in 2010 with the decision to expand into the renewable energy industry. Our emphasis will be on carbon capture technologies where processes such as carbonisation, pyrolysis and gasification can all play a part in reducing the use of fossil fuels while producing by-products that are environmentally friendly; so-called bio-products such as bio-char, bio-oil and bio-gas.

We have forged new links with Gasification Australia, a Melbourne-based company that has substantial experience with gasifiers and pyrolysis systems.

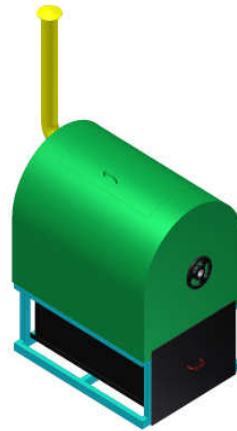
Dr. John Sanderson, a chemical engineer and environmental systems consultant, has assisted FlowForce with the development of our first "carbon capture" product: a small Batch Carboniser or Pyrolyser to produce

biochar from wood waste.

Check out our back page story on biochar for further insight into the significance and use of biochar. The International Biochar Initiative website provides some general and project specific information on this topic at www.biochar-international.org.

In addition we are now offering gasifiers to convert wood blocks and chips to wood gas for use in process heating (eg hot water service) or electricity for off-grid use (eg lighting etc). This technology is well proven having been developed by Fluidyne New Zealand and sold all over the world before becoming available in Australia via Gasification Australia.

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New Batch Carboniser to pyrolyse approx 100 kg of wood waste into approx. 25 kg of bio-char.

BUT:

POWER STATIONS STILL IMPORTANT TO US

You may have read the excellent article by Cameron Philips in the Nov/Dec 2009 issue of Australian Bulk Handling Review titled Callide B high concentration slurry disposal plant. This article refers to the important role played by the impact weighers (mass flow weighers) in measuring the mass flow rate of the ash as it is discharging from the ash

silo via the ash flow control valve prior to the ash conditioner. These mass flow weighers are of course Flow Force units commissioned in December 2005. However the first impact weigher supplied by Flow Force to Callide Power Station was in mid 2000 for Callide C. This ash train was recently duplicated and another Flow Force weigher

installed in 2009.

These applications are all about optimising the density of the high concentration ash slurry and thereby making ash disposal an environmentally friendly process with zero discharge to the outside local aquifers etc. FlowForce is pleased to play a part in such a process.

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Special points of interest:

- First Flow Force impact weigher supplied for ash disposal was in 1997 for Collie power station in WA.
- First Flow Force impact weighers supplied to an overseas power station for ash disposal was in 2000 for Khaperkheda power station in India.

NEW MAGNE//FLO HANDLES STARCH



Series 3 style MAGNE//FLO impact weigher.

The new MAGNE//FLO impact weigher is well suited for very powdery or hazardous materials or where good engineering practice requires periodic cleaning of weigher internals such as in the food or pharmaceutical industries.

The load cell is completely sealed inside a stainless steel enclosure which may be IP65 or Ex rated. And the impact force is transmitted to the load cell by magnetic coupling through the stainless steel.

So the weigher internals can be cleaned without fear or risk of damaging the load cell.

This patented design is now being used in many of our impact weighers.

A recent application involving batch control of wheat starch has been successfully commissioned by a household name in food processing.

Food industry experts would be aware that starch can be notorious with near-vertical angles of repose and suchlike. So this is good news for everyone as process flow measurement is far more cost effective than static weighing in either a continuous or a batch processing plant.

Many years ago we were asked by a Dutch company if we could measure their starch flow. At the time we graciously declined. (You must know when to walk!)

But now we would offer MAGNE//FLO with complete confidence. So progress still marches on.

Virtual Keypad means local control panel now optional

“some animal livestock applicationsmake this feature highly desirable”

Remote monitoring of Flow Force weighers need not require expensive field bus hardware and software. The weigher serial data port can be connected via RS485 back to the control room and monitored on a PC using Flow Force XP5 virtual keypad software.

Whether it is a single truck-loading operation or a multiple unit process one or more weigh-

ers can easily be monitored and/or controlled remotely. All the normal keypad functions are available including the password function so security can be retained at all times.

This means a local control panel is now optional.

The weighers can still be monitored locally if needed with a

hand-held PC thus saving on the price of a local control panel.

This concept would not suit all industrial processes but we have seen some animal livestock applications where local conditions make this feature highly desirable!

Batching product and catching data



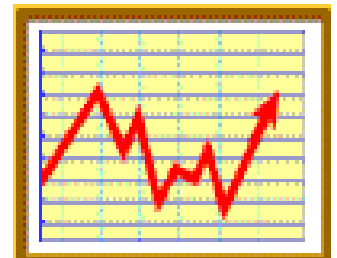
Capture batch data on your PC and arrange it however you want to.

Did you know that where you are batching product into or out of a process or facility you can catch the data from each batch when using a Flow Force weigher?

This software option transmits a string of data at the end of each batch back to your PC. The data string is specially formatted so that each data item can be saved

to a spreadsheet. So then you can manipulate the data into whatever type of presentation you want.

Typical data strings would include unit identification code, date, time, batch weight, average flow rate during batch, totalised weight.



Built-in samplers the way to go!

Flow Force has been providing customers with combined weigher-samplers now for many years. It started in 19 98 when an innovative engineer, (Doug M) at one of our customer sites needed to install an impact weigher beneath a conveyor but a huge sampler was already taking up all the available headroom. So he asked if we could supply the weigher with a sampler built in. Of course we said yes! And we have been grateful to Doug ever since. Where are you now Duggy?

Since then our Series 2 style

impact weigher for mineral sands has been widely used with built-in sampler by plant designers seeking to provide product mass flow measurement and sampling of mineral streams.

The sampler we use is an industry-proven sweep sampler that provides a representative sample for the plant metallurgist. The cutter width can be adjusted to provide different sample sizes and the sweep speed and sweep frequency are also variable via an easy to use keypad function.

Of course the samplers are also available as stand-alone units.



Series 3A style impact weigher with built-in sampler shown with yellow arrow. Sample discharges via small pipe on other side.

IMPACT WEIGHERS TO INDIA

Our most recent export to India comprising 6 combined impact weigher/samplers for a mineral sands dry mill in Chennai, South-western India is now ready for start-up.

This was Flow Force's 3rd export Order to India in recent years.

Some of the features of the units supplied included:

built-in sweep sampler;

manual local or automatic remote operation of the sampler;

rated for hot mineral sand up to 120C;

tolerant to choking in the event of sand backing up into the weigher;

special test weight for checking calibration;

wear resistant design using simple, effective techniques.

Photo at right shows Production Engineer, Ti Kong, on completion of pre-delivery acceptance tests.



New Website

Our new website came on line late last year. It emphasises the three product divisions; namely Automated Weighing Systems; Bio-char Technologies; and Process Weighing & Sampling.

If you have any difficulties finding your way around the site or have any suggestions for additional material that

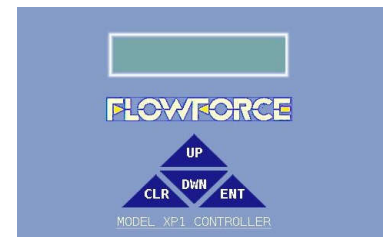
you think would be helpful please call us or send an email to blewis@flowforce.com.au.

Check it out at:

www.flowforce.com.au

NEW XP CONTROLLER

The new XP Controller has now superseded the XK Controller. The upgrade was prompted by economics and the difficulty in sourcing some of the older components used in the XK. All functions provided by the XK have been incorporated in the XP.



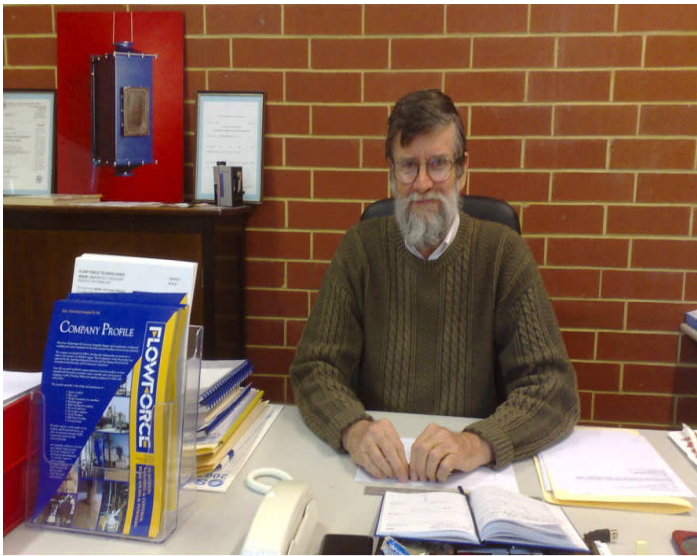
The new XP Controller front panel is very simple and easy to use needing only 4 pushbuttons to access any of the user functions.



Flow Force Technologies

Flow Force Technologies Pty Ltd
23A Tenth Street,
Bowden,
South Australia 5007.
Phone: 618 8346 4006
Fax: 618 8346 4538
Email: blewis@flowforce.com.au

SMART-CLEAN-GREEN



ABOUT US

Flow Force has specialised in impact weighers since the company was founded in 1988 and remains our main “claim to fame”. But we also design and manufacture a wide range of solids handling and weighing equipment including belt scales, bulk bagging systems, bin level indicators, blending controls, check weighers, dosing systems and samplers. We have been serving the minerals processing, bulk grain and stock-feed handling industries since our inception and more recently the food processing industry.

Our recent move into the renewable energy industry is linked to our capability in feedstock handling and process instrumentation.

We supply equipment throughout Australia from our base in Adelaide and our customer base includes 12 other countries.

For further information contact Brian Lewis (shown at left) on Tel: (08) 8346 4006 or Mob: 041 148 0935 or email to blewis@flowforce.com.au

Batch Carbonisers: a new vision

Why Batch Carbonisers? And what is a Batch Carboniser anyway?

You could think of a Batch Carboniser as a cross between an incinerator and a barbecue. Just think of when you last charred your lamb chops! But seriously the Batch Carboniser is all about using simple well-proven technology to make a simple and safe means to convert woody green waste to lump charcoal for barbecue fuel and fine charcoal for use as a soil conditioner.

The proportion of lumps to fines and the sizes of both will be determined by the wood and plant matter that you use.

If just one household produces 25kg a week of bio-

char from garden waste and uses it in the garden or just buries it and does that for 50 weeks a year that household will be diverting nearly 5 tonnes (4.575 T to be exact) of greenhouse gases away from the atmosphere. Multiply that by say 5 million households in Australia and we can potentially achieve an annual reduction by households alone of 25 million tonnes of GHG emissions.

And for motorists the production and capture of 25kg of biochar will typically offset about 30 litres of petrol. The calculation is as follows:

If heating value of petrol is



47 Megajoules/kg; and burning petrol emits 67 grams of CO₂/Megajoule; and 1 litre of petrol weighs 1kg; then 30 litres of petrol will generate about 47x30 Megajoules which produces about 47x30x67/1000 kg (or 94kg) of CO₂.

This amount of CO₂ can be captured by 94/3.66kg (or 25kg) of biochar.

In summary the vision is:

To use garden waste to produce smokeless fuel for outdoor use and soil conditioner to improve your productivity with less fertiliser while creating “carbon credits”.

