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The RA Group of Companies
Celebrating 20 years
MOTOMAN OTC ROBOPAC FMC Technologies MSK Itipack

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Autumn Edition - March, 2008

Major Event News!

At Australia's LARGEST Automation Centre!

- RA's 20th Anniversary -
AUTOMATION EXPO!
6th-8th of May, 2008 - Melbourne

Join ***Robotic Automation P/L*** and a partnering group of local technology co-exhibitors for LIVE demonstrations including:

- ***MOTOMAN*** & ***OTC Daihen*** Robotic applications
- ***FMC Technologies*** Automatic Guided Vehicles (AGVs)
- ***ROBOPAC*** Stretch wrapping and packaging systems
- ***MSK*** Shrink & hood wrapping systems
- ***Matthews*** Leader in labelling, coding & data capture
- ***SICK*** Industrial sensors & safety sensors of all types
- ***Pilz*** Motion control, HMI, safety sensors & controls
- ***SMC*** Largest producer of pneumatic automation products
- ***FESTO*** Servo/pneumatic and electric drive technologies
- ***ROBOTUNITS*** Safety fencing & conveyor technology
- ***ZONE*** Safety guarding, interlocks, optics & more
- ***Siemens*** PLC & HMI systems, industrial PCs & microPCs
- ***Rockwell*** Allen Bradley PLCs, sensors, HMIs & more
- ***SIGNET*** Packing, wrapping and sealing consumables
- ***ITT Jetpak*** Packaging consumables and equipment

See your full invitation by **following this link** or if you're ready now, **follow this one to REGISTER***

*Pre-Registration is a condition of entry.

Installation Case Studies

RA's new installation case-studies are featuring in selected industry magazines. Perhaps you'll recognise new automation potential in your own plant from the solutions you see here...

A REMOTE ROBOT FOR A REMOTE SITE

CLIENT: BHP Billiton Nickel West is the world's third largest producer of nickel-in-concentrate, providing 16 per cent of global supply.

PROBLEM: Our client, BHP Billiton's Kalgoorlie Nickel Smelter, produces nickel matte in granular form, supplying to metal-working companies worldwide. A challenging stage of the production begins as pots of molten matte are transported by gantry crane to the 'pot tilter' stations. The crane places the pot into the tilter mechanism in preparation for the granulation process.

MOTOMAN HP200 robot (200kg payload - a big robot for 'The Big Australian') with foundry robot protection, heat-resistance jacket and end-of-arm fibre-stone paddle tool

As a result of cooling during the pot's transit, a crust begins to form on the top of the molten material. This crust can break away during the tilting operation, which would interrupt the flow of material and potentially cause an explosive reaction. For this reason, it is essential to hold back this crust while the molten material beneath flows through to the granulation pool.

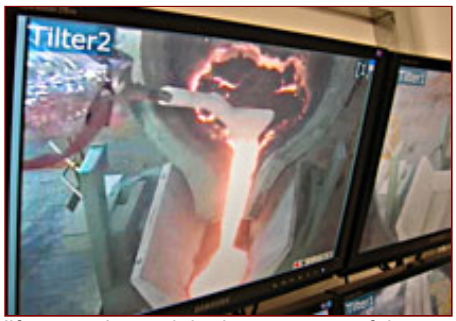
Until now the challenge was taken up by staff working manually under layers of protective clothing in this extreme heat environment. Using long paddles, they would direct the crust to the back of the pot until the pouring process had been completed. With their commitment to continuous improvement of safety, production, volume and cost, BHP Billiton's Kalgoorlie Nickel Smelter made the decision to explore an automated solution.

SOLUTION: ***Robotic Automation P/L*** consulted closely with the client to develop a unique custom solution that would allow a single operator to sit safely away in a remote room with instant real-time control of the robot's movement via PLC control and with reference to a bank of four video displays of the area (each camera located safely away but focused to a close-up view of the pouring station).

The robot, a ***MOTOMAN HP200*** model with foundry-specification protection, was further equipped with a heat-reflective Mylar jacket and a two-metre-long, fibre-stone paddle mounted to the robot via an auto-change unit. The paddle would be used to manoeuvre the crust back into the pot, emulating the manual process, but eliminating the operator exposure risks.

Several variable factors contribute to the shape, size and thickness of the crust, hence the original requirement to develop a manually-operated robotic system. However, while performing installation and commissioning of the system on-site, the ***Robotic Automation P/L*** engineering team had more opportunity to analyse the operation and believed that further automation was possible. An automated procedure could be developed coordinating the movement of the robot using feedback from the position of the tilter mechanism at any given time. This 'automatic crust manipulation' was successfully implemented.

This facility has been running successfully for the last four months with no manual intervention yet required during the pouring process – a testament to the skills of the ***Robotic Automation P/L*** engineering team!



'If you can't stand the heat, get out of the foundry!' and into a safe control room with this PanelView video screen system. Note the robot & paddle seen manipulating the crust.


No, it's not Captain Kirk's command seat aboard the Starship Enterprise, but a purpose-built remote control station, with real-time robot control instruments.

EQUIPMENT:

- Motoman HP200 robot with foundry robot protection, heat-resistance jacket and end-of-arm fibre-stone paddle tool
- Automatic tool-change station
- Purpose-built, remote operation chair and control instruments
- PanelView video screen system
- Operational HMI system
- PLCs with safety features

BENEFITS:

- ***Eliminated safety concerns for the pouring process.***
- ***Reduced risks of explosions as a result of crust formation***
- ***Improved productivity***

LARGEST GANTRY ROBOT SYSTEM IN SOUTHERN HEMISPHERE!

CLIENT: Transnet Rail Engineering, South Africa

PROBLEM: The manufacture of rail freight wagons (for transporting coal and iron ore) is slow and arduous work for manual welding staff at the client's Wagon Build factory. Very long, consistent and durable welds are required along each 7 tonne steel chassis. Despite this, they deliver up to 500 of these wagons a year, to local and international markets.

However, facing the additional challenge of a shortage in local skilled welding labour and a determination to become more globally competitive, the client chose again to explore

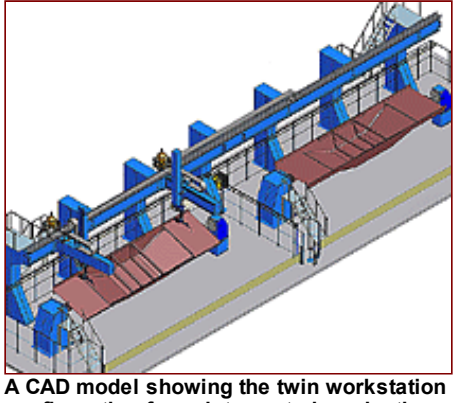

The MOTOMAN welding cell - largest gantry robot system in the Southern Hemisphere.

an automated solution. While this followed three other successful ***MOTOMAN*** robotic welding cell installations in the client's other production areas, the size of these wagon parts brought an unprecedented scope to the project.

SOLUTION: Installed mid 2007 and measuring 37.5 metres long by eight metres in width and height, the latest cell is said to be the largest gantry robot system in the Southern hemisphere. The system has 20 synchronised servo axes, two of them controlling a pair of 20 tonne capacity, rotating positioners and tailstocks. They are capable of manipulating a 7-tonne steel chassis for a rail wagon through 360 degrees, while two suspended HP6 Motoman robots complete the welding cycle.

The robots work independently and simultaneously, carried on slides that provide three additional degrees of freedom. The system also includes ***automated seam finding and tracking functions*** to allow for some variance in the parts' shapes and surfaces.

Wagon assemblies are first tack-welded and then loaded onto one of two workstations in the gantry system, allowing automated arc welding to start immediately while the previous fabrication is unloaded – providing an uninterrupted work-flow. Each unit is now produced with higher quality, consistency and speed, while actually costing less - all of which is essential to global competitiveness.



A CAD model showing the twin workstation configuration for uninterrupted production.

EQUIPMENT:

- 2 x MOTOMAN HP6 Robots
- 2 x MOTOMAN Positioner / Rotators – 20 tonne capacity
- 2 x TOUGHGUN torch
- GMAW digital pulse inverter and peripherals

- Gantry construction, fencing and safety features

BENEFITS:

- ***Improved productivity, quality & consistency***
- ***Improved staff safety***
- ***Lower production costs***
- ***Reduced labour costs, injury claims & lost production time***

Are you missing out?

Have you had an audit of your site's automation potential? Our team are always happy to advise you over the phone or at your site - call us on **1300 552 333** to enquire or simply reply to this email.

NEW Systems Launch!

A ROBOT MICHAELANGELO WOULD BE PROUD OF!

Eric Metrot of ***Tromes Design***, Western Australia, has been using his ***MOTOMAN*** robot to build moulds, models & prototypes for surfboards, aircraft, pools & spa baths, vehicle panels and even orthotic shoe inserts.

Eric describes his system as "having all the processing capabilities, the working envelope, accuracy and payload needed for my applications, while being around one quarter of the price of a five-axis CNC machine".

Now it's easier and more affordable than ever to achieve similar results with your own MOTOMAN robot, thanks to this new option available to the ***MOTOSIM EG*** software package...

A styrofoam model sculpted by Tromes Design's MOTOMAN system

G-Code Converter EG *(Enhanced Graphics)*

As the name suggests, this option converts standard CNC G-Code programs into MOTOMAN robot programs. The translated robot programs include I/O and other non-motion commands. CNC programs as large as 30,000 points can be converted in approximately 1 to 30 minutes (depending on PC processor) and are complete and ready to run.

Ideally suited for customers working with third-party CAD/CAM packages for applications such as material

removal, grinding, prototyping, mould creation, surface finishing or drilling and tapping. Turn your robot into a CNC machine for a fraction of the cost!

ENTRY-LEVEL MOBILE WRAPPING

Like the idea of bringing your wrapper to the pallets rather than the pallets to the wrapper?

Introducing the... **Robot Worker**

The ***Robot "Worker"*** is the little brother of the world's best selling robotic wrapper, the ***Robot 2002***. The ***Worker*** is a self-propelled stretch wrapping machine; it's equipped with an electric engine and is able to wrap various size & weight loads on pallets without any need to move the products around the warehouse.

- Reliable & Easy to use
- Portable
- Safe
- Will wrap almost any shape object
- Drives itself!

You don't need lots of space or to bring the pallet to the wrapper, thus it's especially useful if you have unstable loads that fall off when you try to move the unwrapped pallet, now you can bring the wrapper to the pallet!

The ROBOT WORKER from ROBOPAC (the world's largest supplier of pallet stretch-wrapping systems!)

MORE Upcoming Events - 2008

Press the logos to visit each site for full info & registrations

Just Ask!

Our Melbourne facility (Knoxfield) has a permanent ***Demonstration Area*** - call us on **(03) 9370 9000** or simply reply to this email and arrange a visit & demonstrations!

The RA Group ***Ph: 1300 552 333*** www.ragroup.com.au