



## Right Angle Bottom Loading Modules

The DKI Right Angle (RA) Bottom Loading Module combines all equipment necessary to provide a safe, accurate and cost effective solution to your bottom loading needs.

This Right Angle Solution has been designed for applications where only 1 or 2 loading arms are required, therefore providing a lower cost, more appropriate solution than a standard SlimLine module.

This self-supporting module has a width of only 1800mm and is available with up to 2 loading arms complete with all hydraulic and electrical components required for bottom loading.

Additionally these can be supplied as a Metering Module which comes fully wired and tested and can be installed into an existing area. The outlet pipes are then connected to the existing loading arms or pipes and the supply lines connected to the inlet.

We appreciate that minimising total cost of ownership is a key value driver for our clients. The right Angle Module has been specifically designed to allow your maintenance staff fast, safe and clear access to all components, making your scheduled maintenance and down time minimal.

### Features

- Total turnkey solution, prefabricated and pre-tested, incorporating all framework, galvanising, electrical, pipework, painting, instrumentation, hydraulics, air reticulation and computerisation.
- All manufacturing and fit out disciplines are completed, inspected and tested under AS/NZS ISO9001:2008 Quality Controlled procedures at Diamond Key International works.
- Complete customer Factory Acceptance Test reporting and witnessing if required. FAT covers complete turnkey solution from hydrostatic testing through to computerisation and network testing as applicable.
- All components are certified for use in Class 1 Zone 1 Hazardous areas.

- The modular metering systems are supplied complete with Bay Loading Controllers certified for installation in Class 1 Zone 1 areas. These devices integrate driver interface and custody transfer preset metering and control. The units allow a modular metering system to operate in full standalone mode or seamlessly with a Terminal Automation System (TAS).

### Safety

- Integrated Overfill Protection System.
- Emergency stop systems are fully integrated into the design and are installed and tested as part of the turnkey process.
- All pipework and wiring is constructed, inspected and tested to all relevant Hazardous Area Standards.
- Emergency Stop and Deadman Buttons where requested for bottom loading.



## Mutual Success Through Teamwork With Customers

## Wiring

All wiring is carried out to Class 1, Zone 1 Hazardous Area Standards. Only specifically trained and qualified Electricians are employed and all work is carried out to AS/NZS ISO9001:2008 controlled procedures.

- Steel wire armoured cabling for all high voltage wiring.
- All Intrinsic Safe wiring to International Standards for separation, identification, termination and cable type.
- Mechanical protection and integrity for wiring provided by Integral wiring and cable trays designed for maximum simplicity of access and ease of maintenance.
- Specific vulnerable wiring is enclosed in rigid conduits.
- Cable tagging and identification of all terminations.
- 100% Factory testing of all wiring and terminations.
- Fully glanded Explosion Proof connections to all Ex'd enclosures.

## Structural

- All framework Hot Dip Galvanised for maximum environmental protection.
- Full compliance and inspection to Australian Standards AS-1650.
  - Special designs allow for hot procession without distortion.
  - Large process availability means that gantry frames do not have to be fabricated in small pieces.
- Structure design has been fully developed and assessed compliant for use in Tropical Hurricane prone regions. Australian Standard Zone 4 cyclone rating.

## Pipework

- All pipework constructed to International Standards ASME IX 2001 depending on requirement.
- Fully qualified pipework welders to International Standards ASME IX 2001. All welders are regularly reviewed and tested under AS/NZS ISO9001:2008 Quality Assurance procedures.
- X-ray welding inspection and testing of all gentries. Complete welding traceability records maintained.
- Hydrostatic testing to ASME B31.3

## Painting

- All Pipework is prepared for painting by shot blasting and/or sandblasting to AS1627.4 Class 2.5 and is primed with appropriate primer for top coat.
  - Top coat: Two Pack re-coatable polyurethane enamel.
  - Colour: RAL 7031 Blue Grey.
  - The three coat process is fully maintained to AS/NZS ISO9001:2008.

## General

- Modular arm layout to facilitate latter addition of more loading arms.
  - Arm points can be pre-wired to even further simplify future upgrades.
- Adaptable assembly process to integrate customer supplied (free issued) or OEM supplied components if required.
- Integral air reticulation system for PIV's and Emergency shutdown systems if required.
- Fully wired Flame Proof Lighting.
- Vapour Removal System installed or provided for, to enable future upgrading.



### Head Office

110 Henderson Rd, PO Box 2813 Rowville, Victoria 3178 AUSTRALIA, Phone: +61 3 9730 8888, Fax: +61 3 9764 9931

### Locations:

Selangor, Malaysia Phone: +60 3 7727 0755, Fax: +60 3 7727 1755  
China - Beijing Phone: +86 10 6297 1803, Fax: +86 10 6297 5591

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

Bangkok, Thailand Phone: +66 2 652 2617, Fax: +66 2 652 2618  
China - Guangzhou Phone: +86 20 3623 9655, Fax: +86 20 3623 9639