

ROBORIGGER REPORT:

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Roborigger Performance Report – ASWA Desalination Plant Project

ASWA has been utilising Roborigger equipment on site for approximately one year. We initially trialled a single AR15 unit for handling large formwork shutters and reo cages. The results were so effective that we expanded usage to include Roborigger units for every lift across our two tower cranes and the crawler crane lifting into the shaft.

What particularly interested us at the outset of the project was:

- The ability to control loads without taglines
- Removing workers from beside suspended loads, significantly increasing safety
- Lifting safely in higher wind conditions (we are operating on a coastal, exposed site in a high-wind area)
- Access to lift and crane utilisation data via the dashboard

Roborigger has successfully delivered on all of these objectives.

Wind Control & Operational Performance

Prior to Roborigger, panels became difficult to control at wind speeds of 6–7 m/s. Multiple staff were required to manage taglines, often struggling to prevent load rotation. Workers had to follow loads in tight areas and around structure as cranes slewed, with taglines frequently catching on scaffolding and reinforcement cages. This created both safety risks and inefficiencies.

With the AR15 unit:

- We increased safe working wind speeds to 10–12 m/s for a typical 6m x 4m formwork shutter.
- Taglines were completely eliminated.
- Loads with smaller windage (EWP and rebar) could be lifted in even higher wind conditions.

Using the ARM1500-50:

- Larger panels (8m x 6m) have been safely lifted in wind speeds up to 15 m/s.
- We have not yet experienced an upper operating wind limit within normal site conditions.

The ability to continue operations in conditions that would previously require shutdown has delivered significant financial benefits.

Financial & Productivity Benefits

Crane Crew Cost Savings

If we calculate the crane crew labour (operator plus two riggers) at approximately $250/hour, and we are able to operate an additional 3 hours per day instead of standing down:

- $750 per day saved
- Over 23 working days per month = approximately $17,250 per month

Productivity Increase

General crane productivity has improved significantly:

- Reduced cycle times
- Faster load transport and orientation
- No delays managing taglines

It is reasonable to suggest that overall crane productivity improvements could effectively double the value of the direct wind-related savings.

Additionally, by ensuring the crane operates at peak efficiency, downstream trades are not delayed waiting on crane-dependent activities. This prevents secondary delays and associated cost impacts across the project.

Safety Improvements

Removing the need for workers to stand beside or follow suspended loads has been a major safety improvement.

Benefits include:

- Reduced risk of load strike against personnel
- Reduced risk of load striking structure
- Elimination of tagline entanglement hazards
- Improved control in confined and complex lifting areas

Safety is always our highest priority. Roborigger has delivered tangible improvements in risk reduction while simultaneously improving productivity.



Project Acceleration

Our superstructure programme is heavily driven by concrete works. The faster we can install formwork and reinforcement cages, the faster we can pour, the quicker we can hand over the project.

By reducing wind-related shutdown time (estimated at approximately 25% of previous downtime) and reducing crane cycle times, Roborigger has had a measurable impact on the project delivery timeline.

Delivering on time versus overrunning has substantial cost implications, including:

- Extended crane hire
- Labour costs
- Liquidated damages or penalties
- Overhead extensions

Based on our experience, the investment in Roborigger units was recovered in a short period (within the first months of operation) and has strengthened our position for future project phases.

Crew Feedback & Adoption

Feedback from both riggers and crane operators has been overwhelmingly positive.

- The equipment is now used on every lift.
- Our operation involves high-frequency, repetitive lifting, and crews adopted the system quickly.
- Roborigger has been written into our project rigging guide.
- Common lifts and allowable wind speeds are now documented, with higher wind thresholds permitted when using Roborigger.

The equipment has become integrated into standard crane operations rather than treated as an optional accessory.

Roborigger has been a critical addition to how we manage lifting operations on site. The investment has been rapidly returned through increased safe working wind range, improved crane utilisation, higher productivity, reduced downtime and measurable safety improvements.

We can confidently recommend Roborigger equipment for other large-scale projects and will continue to utilise it to deliver the ASWA Desalination Plant safely, efficiently, and under budget for the Australian Government.

Please feel free to contact me if further detail is required.

Alkimos SeaWater ALLIANCE

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Alkimos Seawater Desalination Plant

ARM1500 Roborigger – 20t WLL – 1900kg Unit Weight

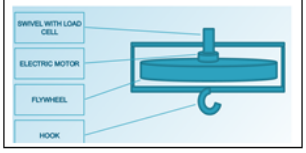


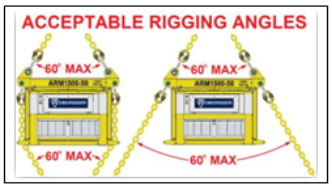
The ARM1500 machine is designed to be lifted with cranes and is used to control the rotation of loads that are attached to the machine. The machine shall be exclusively used to lift loads and control the loads rotation within the limits of the signs on the machine, in compliance with the operating instructions and safety instructions in this manual.

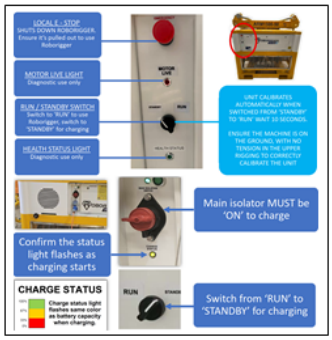
⚠ WARNING

- Improper use of the machine will put the operator and bystanders at risk of serious injury and death. Therefore, it is strictly forbidden to use the machine in a different way, or different purpose than described in the operator's manual.
- The machine shall not be used if the operator is intoxicated, impaired or distracted in any way. NEVER use a telephone or mobile device when operating the machine.
- The machine shall not be used to carry people.
- Roborigger International Pty Ltd disclaims responsibility for any personal injury and/ or damage that results from improper use.

The machine uses a large flywheel to rotate the machine and load e.g., by accelerating the flywheel clockwise, the body of the machine will be able to apply a force on the load in an anticlockwise direction.









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Contents	Schedule of Common Lifts

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Site

SCHEDULE OF COMMON LIFTS
FOR
CRANE MODEL - (COMANSA 21CM550-25T)

SoCL No:	SOCL-CW03524-DOC001	Revision No.:	04
RiBex:	CW03524-CV-0000-FOR-0003		
Prepared by:	Name:	Signed:	Date:

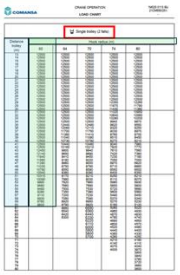
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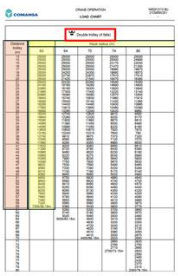
Revision No.:	Revision Detail & Issue Status:	Completed by:	Issued Date:
00	First Issue	J.Pollock	28.05.2025
01	Issued for Use	J.Pollock	13.06.2025
02	Rigging Selection Amended	J.Pollock	16.06.2025
03	EX-SoCL-CW03524-002 lifting of two cages amended	J.Pollock	18.06.2025
04	ARM1500 added as AR15 no longer used	J.Pollock	23.02.2026

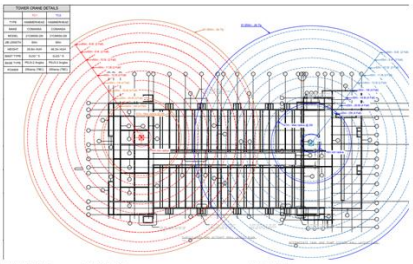
NOTE: All REVISIONS completed will be UNDERLINED to highlight and show changes made after first issue. Where DELETION required, double strike through (e.g. ~~text no longer required~~).

NOTE: Where updating a previously revised document, convert previous revisions UNDERLINED back to NORMAL TEXT and DELETE text that was previously double struck through.

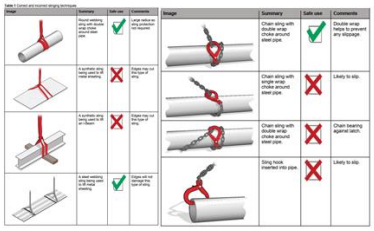
Comansa 21CM550 Working Load Information







Rigging Practices



1. Know the **WEIGHT** of the load, if not, ask your supervisor
2. Know the **APPLICATION** requirements (single or multi leg, basket or choke hitch)
3. Ensure the **CORRECT** gear is selected for the lift
4. **INSPECT** all gear before use
5. **FLOAT** the load and check for **BALANCE**
6. **LIFT** the load slowly and controlled
7. Establish a **LANDING PAD** with packers to prevent crush of the lifting gear
8. Always **RE-INSPECT** the gear
9. **STORE** gear off the ground in a clean dry area



All multi-leg slings exert a horizontal component of force, which increases as the included angle becomes greater.

No sling should be used if the included angle exceeds 120°, as beyond this point the forces in the legs drastically increase, as indicated in the diagram.



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