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Manufactured by



ICARO CAL COIL16

Rebar Spiralling Machine

OPERATING MANUAL

Model: CAL COIL16

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WARNING

Do not operate this equipment without reading and understanding this manual.

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Quick Start

This page covers everyday use. Read Section 1 Safety before using the machine for the first time.

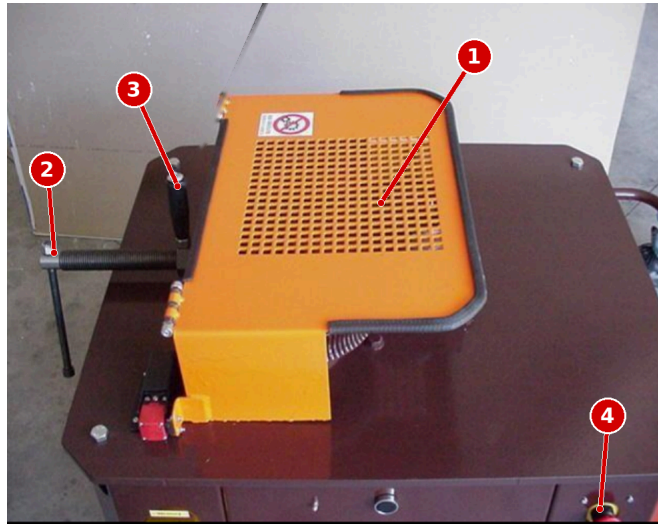


Figure 1. Rolling area: protective cover (1), adjusting screw (2), locking lever (3), emergency stop (4)

Before you start (every day)

- Check the area around the machine is clear, and decide if the bar leaving the machine needs support.
- Check the protective cover (1) stops the machine when lifted, and each emergency stop button (4) works (Section 3.5).
- Check the rolls turn in the correct direction (Section 3.5).
- Check the bars are within the capacity in Section 2 and free of burrs and sharp edges.

Rolling a bar

1. Switch on the main switch (5).
2. Set a larger radius than needed with the adjusting screw (2), then secure the locking lever (3).
3. Select the speed with the speed selector (9). 1st speed gives more rolling force.
4. Turn the rotation direction selector (6) to the right.
5. Feed the bar from left to right, then press and hold the foot pedal (8) for the whole cycle.
6. Reduce the radius gradually with the adjusting screw (2) until you reach the required radius.

Stopping: Release the foot pedal (8) to stop. In an emergency, press an emergency stop button (4). When the job is finished, turn the main switch (5) to "O".

WARNING

The protective cover only guards the rolls from above, not from the sides. Keep your hands clear of the rolls when handling the bar. Burrs or sharp edges on the bar can catch your gloves and pull your hands toward the rolls.

1 Safety

1.1 General safety

Read this manual before using the machine, and keep it with the machine.

- Only trained and authorised people may use, set up or maintain the machine. One operator only.
- Use the machine only for rolling plain or ribbed steel reinforcing bar for reinforced concrete into arcs, circles and spirals, within the limits in Section 2.
- Wear safety gloves and safety boots, plus any other PPE listed in Section 1.2. No loose clothing or jewellery, and tie back long hair.
- Keep the work area clean, dry, well lit and clear of offcuts.
- Never remove, bypass or modify any guard, safety device or safety sign.
- Never clean, oil or adjust the machine while it is running.
- Electrical work must only be done by a licensed electrician.
- In a fire, isolate the power and use a dry powder or CO2 extinguisher. Never use water on electrical equipment.
- Report any damage or fault, and do not use the machine until it is repaired.

1.2 Machine specific hazards

- The rolls and gears move during rolling and can cause serious injury. Take particular care during every job.
- Use only good quality bars, free from surface defects, sharp edges and burrs. These can cause cuts, or catch your gloves and pull you toward the rolls.
- Long or large diameter bars can swing as they leave the machine. Support the bar, or have a second person help.
- The electric motor can reach 100°C. Avoid contact, and never place parts or tools on the motor or electrical parts.
- Keep the locking lever (3) secured during rolling.
- Unauthorised people must not use or approach the machine. Never work beyond your competence, and only start the machine when it is in a safe working condition.
- Check that all safety devices work before starting each day.
- If the work area floods, isolate the power and remove the water before use.
- Safety signs on the machine: high voltage (electrical panel), do not remove safety devices (protective cover) and earth connection point. Replace any damaged or unreadable sign as soon as possible.
- If an accident or dangerous situation happens, tell Capital Machinery Sales straight away through capitalmachinery.com.au. Give the serial number, model, purchase date and a description of what happened.

WARNING

The protective cover (1) only stops access to the rolls from above, not from the sides. During rolling you must reach beyond the guarded area to hold the bar. Keep hands well clear of the rolls at all times.

1.3 Safety devices

- **Protective cover (1) with interlock:** covers the rolls and gears. If the cover is lifted, a microswitch stops the machine. The machine only restarts once the cover is lowered and the foot pedal (8) is pressed. Never bypass the interlock.
- **Emergency stop buttons (4):** at the front and rear of the machine. Press in any emergency. Twist to release.
- **Main switch (5):** on the electrical panel. Turn to "O" to isolate the machine. It can be locked in "O" with a padlock (not supplied). The electrical panel opens only with the special key, and only when the main switch (5) is at "O". Access is for authorised people only. Unplug the power cable before any electrical work. Replacement parts must match the original specification.
- **Foot pedal guard (8):** stops the pedal being pressed by accident. Never remove it.

2 Specifications

2.1 Machine data

Specification	CAL COIL16
Width	800 mm
Depth	950 mm
Height	960 mm
Mass	348 kg
Drive roll diameter	210 mm
Idler roll diameter	120 mm
Supply	415 V, three-phase, 50 Hz
Noise emission	Less than 70 dB(A)

Table 1. Machine data

Speed data	1st speed	2nd speed
Absorbed power	2.5 kW	1.8 kW
Roll speed	11 rpm	22 rpm
Feed speed	7.5 m/min	15 m/min

Table 2. Speed data

The machine has two speeds. Choose the speed to suit the job and the bar. 1st speed gives more rolling force.

2.2 Capacity

Capacity (bar tensile strength 650 N/mm ²)	CAL COIL16
Bar diameter	6 to 34 mm
Bending radius	120 mm to unlimited

Table 3. Rolling capacity

Material	Requirement
Type of material	Plain or ribbed steel reinforcing bar for reinforced concrete
Maximum diameter	See Table 3. On ribbed bar, the diameter measured over the ribs must not exceed the nominal diameter by more than 10%.

Table 4. Material to be processed

CAUTION

The minimum bending diameter must meet or exceed the relevant standards.

3 Installation

Installation, start up and testing must only be done by authorised and qualified people.

3.1 On delivery

The machine is fully checked before dispatch, but it can be damaged in transit. Inspect it carefully on arrival and check these are intact:

- Electrical panel
- Controls
- Emergency stop buttons (4)
- Protective cover (1)

Check the CE rating plate is fitted. It shows the manufacturer, model, serial number, year of manufacture and CE mark. If the plate is missing or incomplete, tell Capital Machinery Sales straight away.

If anything is damaged, do not connect the machine to power. Contact Capital Machinery Sales through capitalmachinery.com.au.

Do not put the packaging (timber, plastics and so on) in general waste. Dispose of it or recycle it under local regulations.

3.2 Lifting and moving

- Lift the machine with ropes of suitable strength hooked through the four holes on the top. Adjust the rope lengths so the machine lifts level.
- Use lifting equipment rated for the load. Avoid swinging, jerks and sudden loads.
- Always lift the machine to move it. Never drag it.
- Clear the area of unauthorised people, animals and obstacles before moving. Keep unauthorised people out of the unloading area.
- Never stand or walk under or near a suspended load.
- Everyone involved must wear the required PPE.
- For transport, make sure the machine is stable on the vehicle and tied down with suitable ropes. On an open tray, cover it with a secured waterproof cover.
- The manufacturer is not liable for damage caused by incorrect slinging or lifting.

3.3 Site

- The floor must carry the weight of the machine (Section 2).
- The area must be well lit, dry, protected from the weather and kept clear of materials.
- Leave enough free space around the machine for the longest bars you will roll.
- The power supply must meet current regulations.

3.4 Electrical connection

WARNING

All electrical connection work must be done by a licensed electrician.

Check the machine voltage matches the supply, and that all parts are intact, before connecting.

Use a supply cable of the correct size, suitable for outdoor and wet conditions, laid so it cannot be damaged. Never use damaged cables, or cables with joints or taped repairs.

- The supply outlet must have a lockable three-pole isolator, protection fuses and an RCD with a 30 mA trip threshold.
- Connect the supply to the power inlet (7) on the side of the machine.
- For extra safety on site, fix the earth conductor, fitted with a cable lug, to the earth screw on the side of the machine.

3.5 First checks

Rotation direction

1. Switch on the main switch (5).
2. Turn the rotation direction selector (6) to the right and press the foot pedal (8).
3. Check the drive rolls turn counterclockwise. If they do not, reverse the selector.

NOTE

Check the rotation direction every time the machine is moved and plugged into a different outlet.

Safety devices

Check the cover interlock and the emergency stop buttons before use. If either does not work, do not use the machine. Contact Capital Machinery Sales.

Device	Test	Result	Reset
Cover interlock	With the machine running, lift the protective cover (1).	Machine stops	Lower the cover, then press the foot pedal (8).
Emergency stop buttons	With the machine running, press an emergency stop button (4).	Machine stops	Twist the button to release it.

Table 5. Safety device checks

4 Operation

4.1 Controls

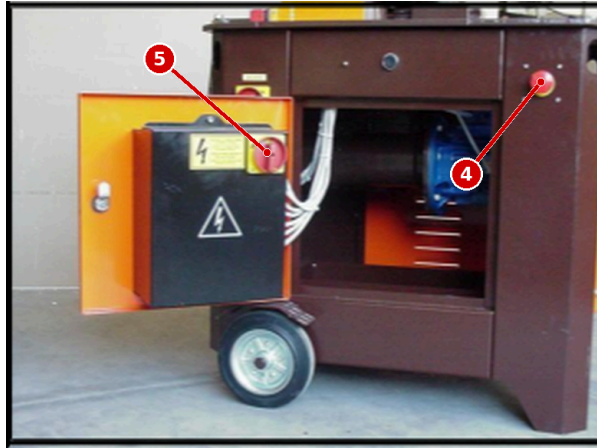


Figure 2. Electrical panel: main switch (5), front emergency stop (4)

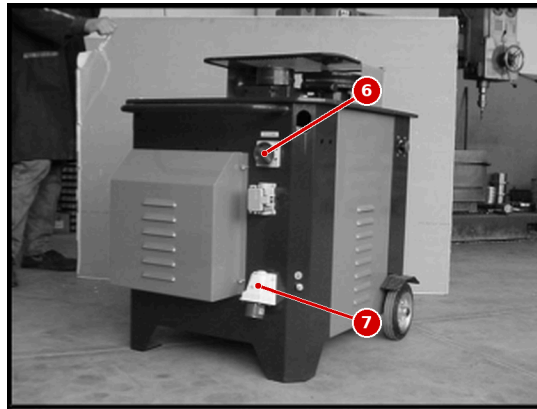


Figure 3. Side panel: rotation direction selector (6), power inlet (7)



Figure 4. Foot pedal (8) with guard

Item	Control	Function
1	Protective cover	Covers the rolls and gears. Lifting it stops the machine.
2	Adjusting screw	Moves the idler roll closer to or further from the drive rolls to set the bending radius.
3	Locking lever	Holds the adjusting screw in position. Keep it secured during rolling.
4	Emergency stop buttons	Front and rear. Stop the machine immediately.
5	Main switch	Switches power on and off. "O" is off. Lockable with a padlock.
6	Rotation direction selector	3 positions. Left: counterclockwise. Centre: no rotation. Right: clockwise.
7	Power inlet	Connects the machine to the supply.
8	Foot pedal	Hold down to run. Release to stop.

Item	Control	Function
9	Speed selector	3 positions. Left: slow. Centre: stationary. Right: fast.
10	Emergency reset	Restores operation after an emergency stop.
11	Guide roll	On the bar exit side. Guides the bar and keeps it centred between the drive rolls. Adjust it to roll spirals.

Table 6. Controls

4.2 How the machine works

A motor inside the frame drives the two drive rolls through a gearbox. The idler roll sets the bending radius and is moved with the adjusting screw (2). The guide roll (11) is normally set at the same height as the rolls, but can be raised if needed.

Work from the front of the machine (the control side). Feed the bar from left to right. The drive rolls have angled grooves that grip the bar in this direction.

Only reverse the rolls to back the rolled bar out. Reversing the rolls during rolling can damage the roll teeth.

4.3 Before you start

1. Check the area around the machine is clear.
2. Decide if the bar leaving the machine needs support, or a second person.
3. Switch on the main switch (5) and check the safety devices work (Section 3.5).

4.4 Rolling arcs and circles

1. Turn the rotation direction selector (6) to the right.
2. Set a larger radius than needed with the adjusting screw (2), then secure the locking lever (3).
3. Feed the bar from left to right and press and hold the foot pedal (8) for the whole cycle. Releasing the pedal stops the machine. Pressing it again carries on from where it stopped.
4. Reduce the radius gradually with the adjusting screw (2) until you reach the required radius.

With a large diameter bar and a small radius, the machine may struggle to draw the bar in at the start. Reduce the radius gradually until you reach the required bend. Roll circles the same way.

4.5 Rolling spirals

1. Set the guide roll (11) so the bar is properly supported both entering and leaving the rolls.
2. Roll the bar as in Section 4.4. While forming the spiral, keep the locking lever (3) in contact with its stop at all times.

4.6 Switching off

When the job is finished, turn the main switch (5) to "O".

4.7 Restarting after a stop

WARNING

Before restarting, make sure the cause of the emergency is fixed and the machine is safe to use.

After a power failure or an emergency stop:

1. Release the emergency stop button (4), or wait for the power to return.
2. Press the foot pedal (8). The machine carries on with the interrupted work.

5 Maintenance and Troubleshooting

WARNING

Before any maintenance, turn the main switch (5) to "O" and unplug the power cable. Lock the main switch with a padlock and hang a sign reading "ATTENTION: MACHINERY UNDER MAINTENANCE". Refit all guards and check the safety devices (Section 3.5) before use.

- Only authorised, trained people who know the hazards may do maintenance. Major repairs must only be done by the manufacturer or skilled technicians.
- Use genuine parts only. Replacement parts must meet the original specification.
- Never remove guards while the machine is powered, never oil or lubricate it while it is running, and never disable the safety devices.
- After maintenance, reconnect the power and repeat the checks in Sections 3.4 and 3.5.

5.1 Maintenance schedule

When	Task
Daily	Clean the machine, especially the rolling area. Remove offcuts from the work area.
Daily	Check the emergency stop buttons (4) and the cover interlock (1) work (Section 3.5).
Daily	Check the rolls turn in the correct direction (Section 3.5).
Yearly	Inspect the insulation of the electrical system and replace any faulty parts. Licensed electrician only.

Table 7. Maintenance schedule

5.2 Troubleshooting

Problem	Cause	Fix
Rolls do not turn when the foot pedal is pressed	Protective cover is open	Close the protective cover (1) fully.
	Emergency stop button is pressed	Release the emergency stop button (4).
Rolls do not draw the bar in	Bending radius too small for the bar diameter	Start with a larger radius.
	Drive roll serrations are worn	Replace the drive rolls.
Machine does not run when the main switch is turned on	Motor protection circuit breaker has tripped	Reset the circuit breaker.
Any problem that continues		Contact Capital Machinery Sales through capitalmachinery.com.au .

Table 8. Troubleshooting

5.3 Storage

When not in use, cover the machine with a waterproof tarpaulin to stop condensation. Store it in a clean, dry place between -10°C and +50°C, at no more than 80% humidity, away from heat and vibration. Coat unpainted metal parts with protective oil.

If the machine will not be used for more than two months, clean the motor components, oil the unpainted metal parts and cover the machine with a waterproof tarpaulin. Disconnection from the power supply must be done by qualified people.

5.4 Disposal

Scale can flake off the bar during rolling. Dispose of it under local regulations. Dismantling must only be done by authorised people. Contact Capital Machinery Sales first. Hand the machine to an authorised recycling company, and contact your local council for details.

5.5 Parts

To order parts, contact Capital Machinery Sales with the machine model, serial number and part description. A photo of the part helps. Common wear parts are the drive rolls.

6 Warranty and Support

6.1 Warranty

- Standard 12 month warranty, unless a different period is shown on the product page or your invoice.
- Covers replacement of any part or material found to be defective under normal working conditions. Misuse and damage are not covered.
- This warranty is in addition to your rights under the Australian Consumer Law. Full terms are at capitalmachinery.com.au.

Not covered by warranty

- Using non-genuine parts, or parts not supplied or approved by Capital Machinery Sales, including wear parts such as drive rolls. Any damage this causes is not covered.
- Tampering with, opening or modifying the machine or its sealed components.
- Incorrect power connection.
- An unsuitable operating environment, poor maintenance, work by unauthorised people, excessive use, or not following this manual.
- Damage to the roll teeth caused by reversing the rolls during rolling.
- Damage caused by rolling bars outside the capacity in Section 2.

6.2 Making a warranty claim

Lodge your claim online at capitalmachinery.com.au/warranty-claim. Have your invoice number and date of purchase ready, and describe the problem. Photos or a short video help us resolve it faster. Our team will reply by email with the next steps.

6.3 Service and parts

For service, spare parts and support, visit capitalmachinery.com.au.

6.4 Revision history

Revision	Date	Change
0	15/10/2026	First issue, written from the Icaro CAL 34 Users Manual and Maintenance (revision April 2009).



Capital Machinery Sales has supplied, serviced and supported workshop machinery across Australia for over 20 years, backed by more than 30 years of hands-on industry experience.

Sales, service and spare parts

capitalmachinery.com.au

Warranty claims: capitalmachinery.com.au/warranty-claim

Hallam, Victoria