KINCROME
PROFESSIONAL QUALITY TOOLS

SMART 9-STAGE BATTERY CHARGER & MAINTAINER
24V 6 AMP

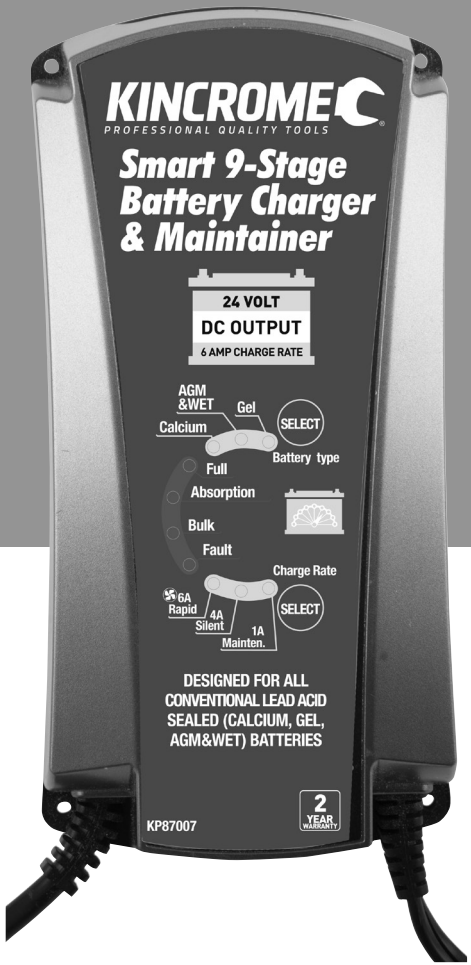
100% AUTOMATIC SMART BATTERY CHARGER & MAINTAINER

BATTERY CONDITION ANALYSIS

FULLY MICROPROCESSOR CONTROLLED

PATENTED BATTERY REJUVENATION (RECONDITIONING)

NO TECHNICAL EXPERIENCE NEEDED



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SMART 9 STAGE BATTERY CHARGER & MAINTAINER 24V 6 AMP

Congratulations on purchasing a Kincrome KP87007 fully automatic switched mode 24 Volt battery charger, maintainer and rejuvenator. Please take the time to carefully read and understand this manual before using this product.

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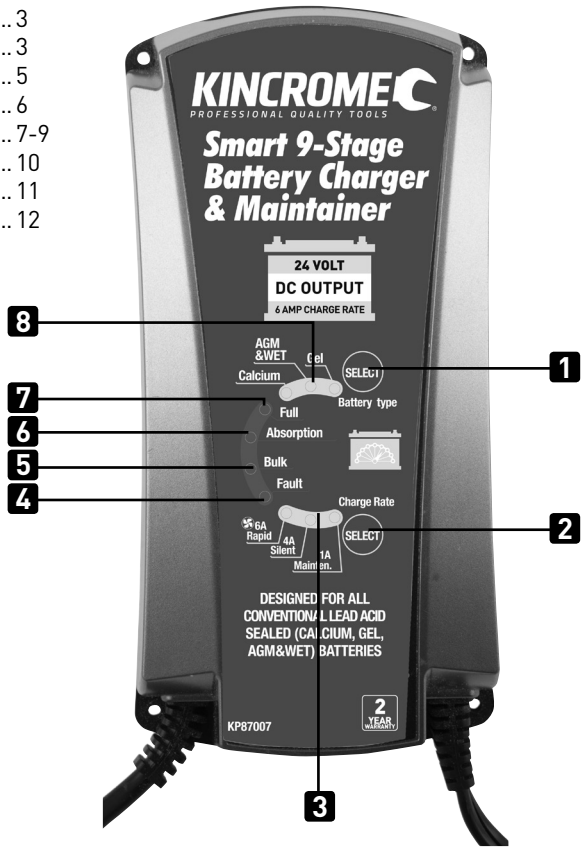
Know Your Product

1. Battery Type Selection Button
2. Charge Rate Selection Button
3. GREEN Charge Rate LEDs
4. RED Fault LED
5. BLUE Bulk LED
6. GREEN Absorption LED
7. GREEN Full LED
8. GREEN Battery Type LEDs



*Additional ring terminals included in pack

Specifications:

Part No: **KP87007**
Output: ..... **6A @ 24VDC**
Input Voltage: ..... **220-240VAC/1.8A (175W)**
Input Frequency: **50/60Hz**
Boost Charge Voltage: .. **Gel - 28.2VDC**
..... **AGM & WET - 28.8VDC**
..... **Calcium - 29.4VDC**
Equalise Voltage: ..... **Gel - 28.6VDC**
..... **AGM & WET - 29.2VDC**
..... **Calcium - 31VDC**
Float Trickle Charge Voltage: **27.2VDC**
Start Voltage **4VDC**
Operating Temperature: ..... **-15 to 50ºC**
Storage Temperature: ..... **-25C to 85ºC**
Operating Humidity: ..... **90% RH Max.**
Dimensions: ..... **214 x 103 x 55mm**
Weight: **1.1kg**
Approvals ..... **CE, AS/NZS, EMC**

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IMPORTANT SAFETY ADVICE AND WARNINGS

- The charger is designed to charge and maintain **conventional lead-acid batteries only**. (VRLA), AGM, CALCIUM, GEL & WET.
- Always refer to the battery manufacturers specifications and recommendations if you're unsure of your battery charging requirements. Eg. Such as removing or not removing cell caps whilst charging, battery type, maximum charge rate etc..
- Explosive gases may escape from the battery during charging so please ensure the battery is charged in a well ventilated area.
- This charger is designed for indoor use only and should never be exposed to water, rain, snow, liquids etc.
- Do not attempt to use the charger if it has been dropped or damaged.
- Do not attempt to use the charger if the cables or plugs are damaged.
- If battery acid contacts your skin or clothing, wash immediately with soap and water. If acid enters your eye, immediately flush the eye with running cold water for at least 10 minutes and seek medical attention. Someone should always be within range of your voice.
- Never attempt to charge a damaged battery, frozen battery or non rechargeable battery.
- Never place the charger on the battery or battery on the charger.
- When working with lead-acid batteries, remove personal metal items such as rings, bracelets, necklaces, watches and make sure you don't short circuit the battery terminals with any type of metal tool or piece of jewellery as this will cause an explosion. You can wrap your spanner with insulation tape to minimise the risk of a short circuit.
- NEVER smoke, use an open flame or create sparks near a battery or charger during charging operation as this may cause an explosion and explosive gases.
- Do not disassemble the charger. Take it to a qualified and authorised person for repair.
- If using a generator, you must ensure you use a surge protector to protect the charger from Voltage spikes.
- The charger must not be used or played with by infirm persons or children. Also keep it away from any pets.

MAIN FEATURES

- **100% automatic smart battery charger & maintainer with reconditioning.**
- **The battery charger is easy to use and requires NO technical experience.**
- **Fully microprocessor controlled with safety timers at every stage.**
- **Battery condition analysis.**
- **Selectable battery type.**
- **Selectable charge rate / mode.**
- **Patented battery rejuvenation (reconditioning).**
- **Battery Voltage retention analysis.**

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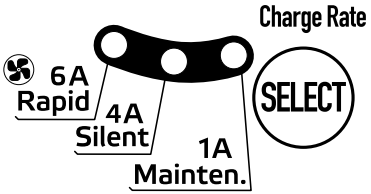
- **Pulse charge for long term maintenance.**
- **Ultra lower power consumption (ECO Mode)**
- **Multi Stage:**
  1 - Qualification - Battery condition check
  2 - Battery rejuvenation (recondition mode)
  3 - Soft start charging
  4 - Bulk charging
  5 - Absorption charging
  6 - Equalisation charging
  7 - Battery analysis
  8 - Float mode
  9 - Long term maintenance pulse charge



- **Automatic diagnosis and charge:** On power up, the charger will automatically diagnose the battery condition and determine if the rejuvenation mode (reconditioning) or charge cycle is required.
- **Patented battery rejuvenation technology:** The charger has a unique and patented rejuvenation feature which uses high Voltage equalising and peak pulse reconditioning to repair sulphated batteries. This feature is fully automatic and depends on the internal impedance of the battery. It also depends on whether the battery is still connected in the vehicle.
- **Can be left on 24/7 to ensure your battery is always maintained and fully charged:** The battery charger can be left unattended and left permanently connected all year round. The intelligent charger will monitor the battery Voltage and will maintain it at peak performance with a special pulse charge during long term maintenance.
- **Short circuit and reverse polarity protection:**
- **Heavy-duty and corrosion-resistant output connectors:**
- **Crocodile clips:** It comes with a quick connect fly lead and heavy duty, fully insulated crocodile clip harness. If you require an optional ring terminal harness, please visit our website www.kincrome.com.au or contact your local reseller.
- **Rapid Charge Mode:** Uses maximum charging current to ensure the fastest charge time. You may hear the fan turn ON during this mode.
- **Silent Charge Mode:** Charges at a slightly reduced charge rate so the cooling fan is not required.
- **Maintenance Mode:** Ideal and recommended for long term maintenance charging or for charging smaller batteries.

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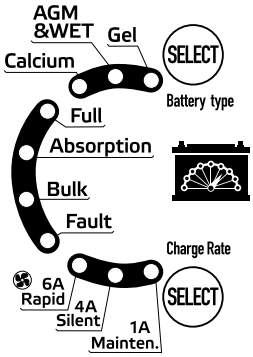
UNDERSTANDING YOUR PRODUCT

LED STATUS INDICATOR TABLE:

LED	STATUS	DESCRIPTION
		BATTERY TYPE LED'S
GREEN	ON	INDICATES WHICH BATTERY TYPE IS SELECTED
		CHARGE RATE LED'S
GREEN	ON	INDICATES WHICH CHARGE RATE / CHARGE MODE IS SELECTED
		CHARGING STATUS LED'S
FULL GREEN	FLASH/ON	FLASHING IF ANALYSIS FAILED OR ON IF FULLY CHARGED - FLOAT / MAINTENANCE MODE
ABSOR. GREEN	FLASH/ON	FLASHING DURING EQUALISATION CHARGING OR ON DURING ABSORPTION CHARGING
BULK BLUE	FLASH/ON	FAST FLASH - REJUVENATION / SLOW FLASH - SOFT START CHARGING / ON - BULK CHARGING
		FAULT LED
RED	ON	SHORT CIRCUIT/REVERSE POLARITY OR REJUVENATION FAILED IF BULK LED ALSO FLASHING SLOW
RED	FLASHING	OVER TEMPERATURE PROTECTION MODE / SOFT START CHARGING TIMED OUT IF BLUE BULK LED ALSO FLASHING FAST / BULK CHARGING TIMED OUT IF BLUE BULK LED ALSO ON



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TEMPERATURE & SAFETY PROTECTION:

- **INTERNAL OVERHEAT PROTECTION:** The charger has a built-in overheat and an overload electronic circuit. This protects the charger from being damaged if overheated or overloaded and will automatically decrease the charging current. Once the units internal temperature decreases to a safe level, the charger will resume normal charging.
- **SAFETY TIMER PROTECTION:** The charger has safety timers for every stage. If the battery Voltage doesn't reach a certain Voltage within a certain time, the unit will stop charging as it's highly likely that you're attempting to charge a severely discharged or heavily sulphated battery. If any of the stages time out, the charger will immediately stop charging in order to protect the battery. This will be indicated with the fault LED flashing slowly.
- **REVERSE POLARITY:** The charger has reverse polarity protection. If the charger output leads are connected reverse polarity, the fault LED will come ON and the charger will be disabled. Simply unplug the charger from AC power and then connect the output leads to the correct polarity.
- **SHORT CIRCUIT PROTECTION:** The charger will automatically turn OFF if the output leads are short circuited and the fault LED will come ON. This prevents the charger from being damaged if the positive and negative crocodile clips or the optional ring terminals accidently touch each other while the charger is turned ON.
- **ECO MODE:** This Kincrome Battery Charger has a built in ultra low power consumption circuit. If AC power is connected and the battery is disconnected, after 10 seconds the charger will automatically go into an ECO mode. During this mode the power drawn is less than 0.36W which totals 0.01kWh per day power consumption. If AC power is connected and the battery is connected, once the battery is fully charged and during the long term maintenance stage, the total power consumption is around 0.03kWh per day. Both the selected Charge rate and Battery type LED's will flash GREEN to indicate ECO mode.

BATTERY TYPES & CAPACITY:

- Suits conventional lead acid batteries (VRLA) AGM, Calcium, Gel & Wet.
  The Ah (Ampere Hours) capacities shown below are to be used as a general guide only. Some batteries may be able to handle a higher charge current. Refer to the battery manufacturers specifications and recommendations for your charging requirements.

Charge Rate:	1A	4A	6A
Charging	3 - 20Ah	12 - 80Ah	18 - 120Ah
Maintaining	< 100Ah	< 120Ah	< 180Ah

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ELECTRICAL PARTS & ACCESSORIES:

AC Power Cord:	1.8m with SAA 3 Pin AU Plug
DC Output Lead:	1.2m with quick connect
Charging Leads:	Quick connect 60cm Crocodile Clip Harness

OPERATION CHARGING INSTRUCTIONS:

1. Pre charge check & electrolyte level check

- Check the Battery Electrolyte levels (Not required on sealed & maintenance free batteries). If necessary, remove the vent caps and add distilled water so the levels are halfway between the upper and lower fill lines.
- Check the battery Voltage, type and Ah capacity to ensure the charger is compatible and to determine which Battery Type and Charge Rate settings you will use.
- Ensure the battery is in a well ventilated area and the charger should be as far away from the battery as the cables permit.

2. Connecting the battery charger to your battery

If the Battery is **out of the vehicle:**

- Connect the RED (+) Crocodile clip or optional ring terminal to the (+) battery terminal.
- Connect the BLACK (-) Crocodile clip or optional ring terminal to the (-) battery terminal.

If the battery is still **in the vehicle**, determine if the vehicle is positively or negatively earthed (Fig 1).

If **Negatively Earthed (Most Common)**

- FIRST Connect the RED (+) Crocodile clip or optional ring terminal lead to the (+) battery terminal and then connect the BLACK (-) Crocodile clip or optional ring terminal lead to the vehicle's chassis (Fig 2).

WARNING: DO NOT connect the BLACK (-) lead to the carburettor or fuel lines.

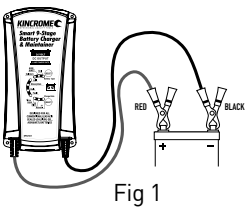

Fig 1

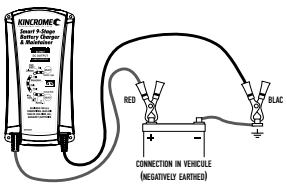

Fig 2

If **Positively Earthed**

- FIRST Connect the BLACK (-) Crocodile clip or optional ring terminal lead to the (-) battery terminal and then connect the RED (+) Crocodile clip or optional ring terminal lead to the vehicle's chassis (Fig 3).

WARNING: DO NOT connect the RED (+) lead to the carburettor or fuel lines.

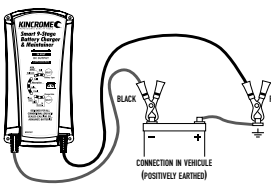

Fig 3

SEE QR CODE FOR QUICK START PRODUCT VIDEO

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3. Connect the battery charger to Mains Power (240Vac)

- The charger will automatically start when AC power is connected and switched ON.
- **IMPORTANT**: Please make sure the correct Battery Type and your desired Charge Rate is selected to suit your battery by pressing the Select Buttons within the first 5 minutes of charging. For Example do not charge a Gel Battery on the Calcium Battery Type setting as this may damage your battery and / or reduce your battery life.
  Note: If the Fault Indicator LED illuminates RED, please check your connections as it's likely that the Positive and Negative Leads are reversed.

4. The Charging Process:

- **Qualification - Battery Condition Check**
  When the charger is first switched ON it checks the battery condition to determine whether the battery needs reconditioning. During this qualification process it checks the internal impedance and initial Voltage of the battery and it will determine how much charge current, if any that the battery will accept.
- **Enhanced Battery Rejuvenation - BLUE Bulk LED Flashing Fast**
  If the initial qualification detected that the battery was in poor condition, the patented rejuvenation process will begin automatically. During the rejuvenation process a high Voltage equalising and peak pulse reconditioning charge is used to repair the sulphated battery. This unique patented feature will break down and dissolve the lead-sulphate crystal build up on the battery plates which will extend the life of your battery.
  It can also balance out high concentrations of acid. The equalisation Voltage will be 32V DC maximum. If the battery Voltage doesn't reach 18V DC within 24 hours, the Rejuvenation process will time out.
- **Soft Start Charging - BLUE Bulk LED Flashing Slow**
  Gently charges the battery using a reduced charge output until the battery Voltages reaches 22V DC. If the battery Voltage doesn't reach 22V DC within 6 hours, the safety timer protection will stop the unit from charging and the RED Fault LED and BLUE Bulk LED will start flashing.
- **Bulk Charging - BLUE Bulk LED ON (Charge Voltage depends on battery type selection)**
  Uses the maximum selected charge output until the battery Voltage reaches 28.2/28.8/29.4V DC. If the battery Voltage doesn't reach this within 24 hours, the safety timer protection will stop the unit from charging and the RED Fault LED will start flashing and the BLUE Bulk LED will be ON.
- **Absorption Charging - GREEN Absorption LED ON**
  Uses a constant Voltage while reducing the charging output current to ensure the battery receives a full charge without overcharging the battery.

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- **Equalisation Charging - BLUE Bulk LED and GREEN Absorption LED both flashing**
  A well proven process that carefully overcharges the battery to restore it's full capacity. The Equalisation stage for CALCIUM Battery type selection is automatic.
  The Equalisation stage for AGM&WET and GEL Battery Types only occurs if the initial start Voltage is below 22 Volts.
- **Battery Analysis - GREEN Full LED ON**
  The battery analysis stage checks the condition of the battery after the charge cycle is completed. If the battery Voltage drops too quickly during the analysis mode, this means the battery is probably faulty. If the battery analysis failed, this is indicated by the GREEN Full LED flashing.
- **Float Mode - Full GREEN LED ON**
  This stage allows you to keep the charger connected 24/7 to ensure your battery is well maintained and kept 100% fully charged. Float mode will maintain the battery at a constant 27.2V. DC.
- **Long Term Maintenance - Full GREEN LED ON**
  During long term maintenance / float mode, the unit will apply a special pulse charge to ensure the battery is kept in optimal condition.

5. Disconnecting the Battery charger from Battery

- **If the Battery is out of the vehicle:**
  (1) Switch OFF and Remove the AC Pin Plug from the outlet.
  (2) Remove the BLACK (-) lead and then the RED (+) lead.
- **If the battery is still in the vehicle:**
  (1) Switch OFF and Remove the AC Pin Plug from the outlet.
  (2) Remove the BLACK (-) lead from the vehicle chassis.
  (3) Remove the RED (+) lead from the battery.

Note: Check electrolyte levels if possible after charging as they may need topping up with distilled water (This does not apply to sealed maintenance free batteries).

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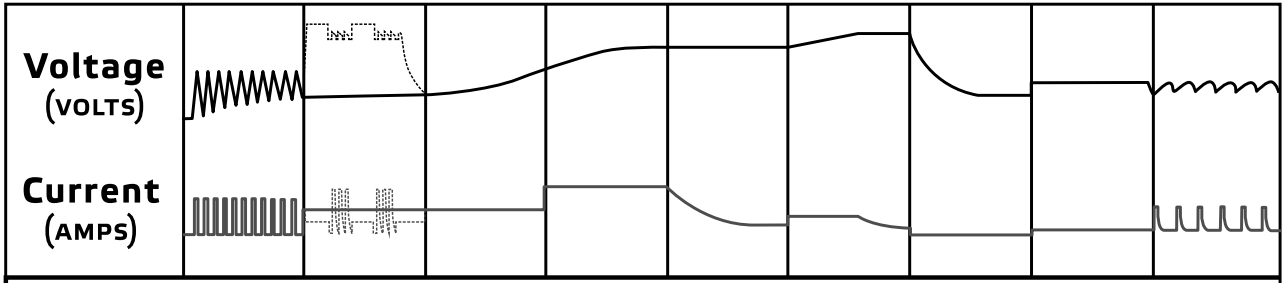
CHARGING CURVE



CHARGING / MAINTAINING PROCESS									
	QUALIFICATION	REJUVENATION	SOFT START	BULK CHARGE	ABSORPTION	EQUALISATION	ANALYSIS	FLOAT	MAINTENANCE
	Checks battery condition to determine whether the rejuvenation stage or charge cycle is required.	Automatic stage for batteries in poor condition. Breaks down sulphation using new patented technology.	Increases your battery life by gently starting to charge the battery until the battery reaches a set voltage.	Reduces charging time by delivering maximum charge until the battery reaches a set voltage.	Uses constant voltage and ensures the battery receives a full charge without overcharging the battery.	Restores full capacity to batteries by removing acid stratification.	Checks the battery condition to ensure it's fully charged.	Maintains the battery at 100% charge.	Special pulse charge for long-term maintenance to ensure the battery is in optimal condition.

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TROUBLE SHOOTING

PROBLEM	INDICATION	POSSIBLE CAUSES	SOLUTIONS
Charger does not work?	No Indicator lights ON	- NO AC power	- Check AC connections and make sure the AC Power Point is switched ON. - Try a different AC Power Point which you know is working.
Charger has NO DC output?	Fault RED LED is ON	- Output is short circuited - Reverse polarity protection - Loose / bad connection to the battery	- Check DC connection between charger and battery and make sure they are not short circuited (Touching each other). - Check that the crocodile clips have not fallen off or come loose. - Check that the crocodile clips/ring terminals are connected to the correct polarity. **Note:** The charger output is only present when connected to a battery.
NO charging current?	Fault RED LED is Flashing	- Battery is severely sulphated - Battery has a damaged cell - Over temperature protection mode	- Check the battery condition, age etc. - Battery may need replacement. - Move battery & charger to a cooler environment.
The full / float light won't come ON.	Fault RED LED is Flashing OR Full GREEN LED is Flashing	- Battery Ah capacity too large for the battery charger and it has timed out - Battery is defective - Battery is severely sulphated	- Check the charger specifications match the battery capacity. Eg. make sure battery capacity is not too big for the charger. - Battery may need replacement. - Charge rate selected might be too low for the battery. Switch charger off and on and try again or try a higher charge rate setting providing it doesn't exceed the maximum charge limit for your battery.

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In the event you believe your Battery Charger is not functioning correctly, please contact Kincrome Customer Service, (1300 657 528) before returning the item to your place of purchase. Our technical team may be able to rectify your issue over the phone.

REPLACEMENT PARTS

For the full range of replacement parts and accessories, please visit our website **www.kincrome.com.au**

Technical support is provided by Kincrome Tools or charger partner, OzCharge Corporation. Call Kincrome Customer Service on 1800 657 528 if assistance is required.

24 MONTH WARRANTY

Warranty given by Kincrome Australia Pty Ltd of 3 Lakeview Drive, Caribbean Park, Scoresby, Victoria (Tel 1300 657 528). The applicable warranty period (24 months) commences on the date that the product is purchased. If this product has materials or workmanship defects (other than defects caused by abnormal or non warranted use) you can, at your cost, send the product to place of purchase, an authorised Kincrome service agent or one of Kincromes addresses for repair or replacement. Your rights under this warranty are in addition to any other rights you have under the Australian Consumer Law or other applicable laws. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. For further details please visit www.kincrome.com.au or call us. Due to minor changes in design or manufacture, the product you purchase may sometimes differ from the one shown on the packaging.

KINCROME TOOLS + EQUIPMENT™

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Made to Kincrome Tools & Equipment Pty Ltd Global specifications and quality standards

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