

dal 1968



SCAMBIATORI - BOLLITORI - SERBATOI



IMMERSION HEATING ELEMENTS ON THREADED PLUG



APPLICATIONS

- Direct or backup heaters for DHW storage calorifiers
- Direct or backup heaters for hot water buffer tanks

DESCRIPTION

All PACETTI tanks come as standard with a port "R" for housing an immersion electric heater, whenever required. Electric heaters can be supplied separately upon request.

All elements are manufactured with Stainless Steel 316L pipes and are fitted in a die-cast aluminium protection case IP54.

They are available in the following versions:

- 2 kW and 3 kW: 1-phase V220/1-V240/1 – equipped with a 1.3-meter power cable with a SHUKO plug
- 5 kW to 15 kW: 3-phase V400/3 – equipped with a 2-meter power cable without plug

The threaded connection of these heating elements is 1"½ GAS/M. Thanks to the brass adapter supplied as standard with each element, these immersion electric heaters can easily be fitted to both 1"½ GAS/F and 2" GAS/F threaded connections on the storage tank.

All models are equipped with two thermostats:

1. **Temperature regulation thermostat** → Automatic reset
2. **Safety thermostat** → Manual reset - see how it works on pages 5 and 7

The Declaration of Conformity and instructions for use are an integral part of the supply of each item and must be kept and made available for consultation throughout the life of the product.

WARRANTY

These products are covered by a 12-month warranty from the delivery date. The warranty only covers verified manufacturing defects and is limited to the free of charge repair or replacement of recognised defective products. The warranty does not apply if defects are found to be the result of incorrect installation or maintenance carried out by unqualified personnel, improper and/or unsuitable use of the product, incorrect storage or preservation, or damage caused by the carrier.

Therefore, the warranty does not cover any costs associated with dismantling and reassembling the heating elements, system downtime, assistance at the installation site, export and import costs, or transport costs.

Any complaints regarding defective or non-compliant material must be submitted in writing within eight days of receipt of the goods.

REGULATORY COMPLIANCE

Directive 2014/35/UE | Low voltage directive

IEC EN 60335-1 | Safety of household and similar electrical appliances

IEC EN 60730-1 | Automatic electrical controls for use in, on, or in association with equipment for household appliance and similar use

IEC EN 60730-2-9 | Automatic electrical controls - Requirements for temperature sensing controls

IEC EN 62233 | Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure

Directive 2011/65/UE - RoHS .2 | Restriction of the use of certain hazardous substances in electrical and electronic equipment

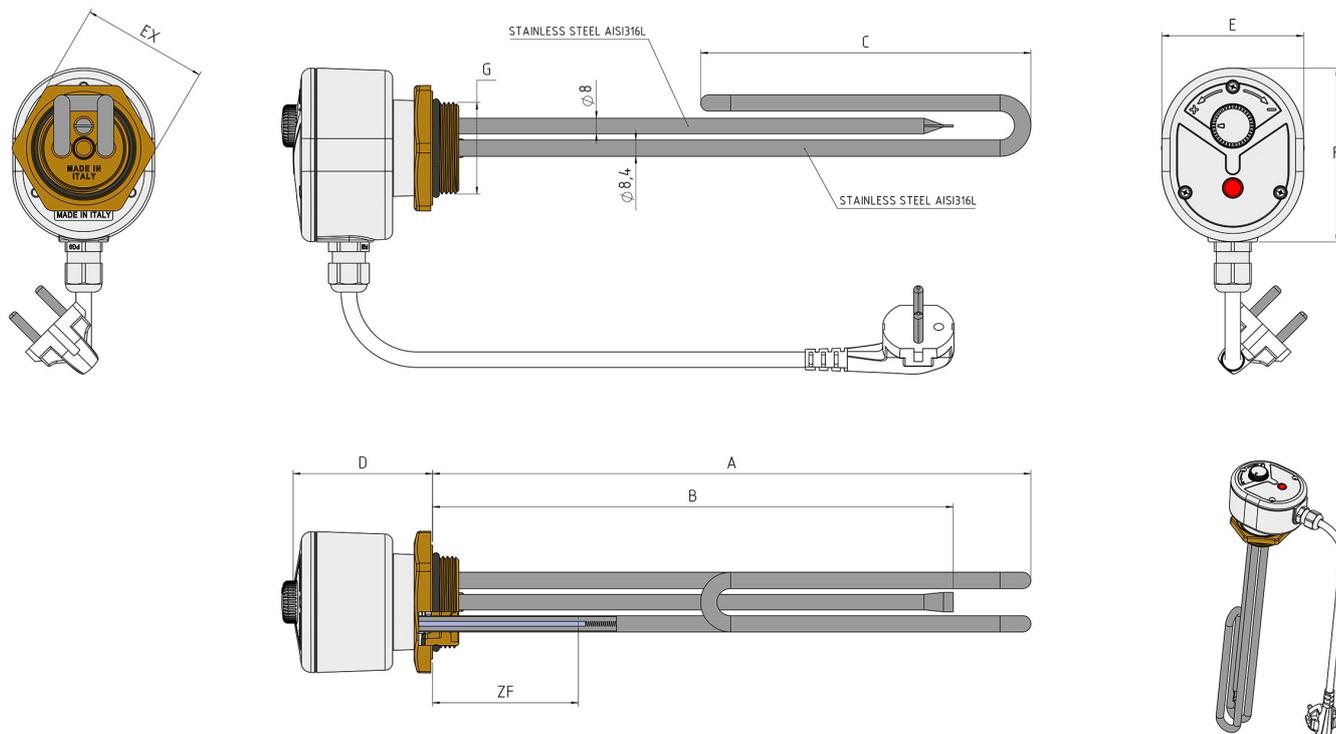
D.M. 174/04 | Compatible with potable water

Cooke Industries - Phone: +64 9 579 2185 Email: sales@cookeindustries.co.nz Web: www.cookeindustries.co.nz

MODELS

| Part number | <i>kW</i> | <i>Volt</i> | Length (mm) |
|--------------------|-----------|-------------|----------------|
| RES020-L310-6-M-BT | 2 | 220/1 | 310 |
| RES030-L350-6-M-BT | 3 | 240/1 | 350 |
| RES050-L375-6-T-BT | 5 | 400/3 | 375 |
| RES060-L435-6-T-BT | 6 | | 435 |
| RES090-L610-6-T-BT | 9 | | 610 |
| RES100-L670-6-T-BT | 10 | | 670 |
| RES120-L727-6-T-BT | 12 | | 730 |
| RES150-L870-6-T-BT | 15 | | 870 |





| Part number | <i>kW</i> | ZF cold zone (mm) | A (mm) | B probe (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (GAS) | EX (mm) |
|--------------------|-----------|-------------------------|-----------|--------------------|-----------|-----------|-----------|-----------|------------|------------|
| RES020-L310-6-M-BT | 2 | 110 | 310 | 270 | 170 | 76 | 83 | 90 | 1"½ | 65 |
| RES030-L350-6-M-BT | 3 | | 350 | | 215 | | | | | |

| Part number | <i>kW</i> | Volt | Elements Length (mm) | Power density (W/cm ²) | Cable Length (mt) | Temperature range (°C) | Safety thermostat cut-out temp. (°C) | External box protection rating |
|--------------------|-----------|-------|----------------------------|---------------------------------------|-------------------------|------------------------------|--|--------------------------------------|
| RES020-L310-6-M-BT | 2 | 220/1 | 995 | 7,6 | 1,3 | 21 ÷ 65 (±5) | 95 (±5) | IP54 |
| RES030-L350-6-M-BT | 3 | 240/1 | 1170 | 9,7 | | | | |

ELECTRICAL CONNECTION:

Ensure that the main characteristics (voltage and others) comply with the requirements shown on the label.

WARNING! Correct connection of the grounding system is essential to ensure the safety, operation, and life of the appliance itself. It is also mandatory to ensure the validity of the warranty.

The red indicator lights up when the heating element is working.

SAFETY THERMOSTAT:

In accordance with current EN and IEC standards, the heating elements are equipped with a safety thermostat.

In the event of overheating, the safety thermostat automatically and permanently switches off the electrical network. It must then be reset manually by following the procedure described below. Before doing so, identify and eliminate the issues that caused the overheating. Contact a qualified technician.

In the event of a safety intervention, proceed as follows to perform a manual reset (only for qualified technical personnel):

- Disconnect the heating element from the electrical power supply
- Find out what is causing the problem and fix it
- Turn the knob to "minimum" until you hear a click
- Unscrew the three screws on the cover and remove it, taking care not to damage the indicator light cables
- Before you reset the device, check the temperature is below 40°C. If it is not, there is a risk of damage
- Use a screwdriver to press the red button on the thermostat (the one next to the word "SAFETY") back to its original position. Keep pressing it until you hear a "click". This will unlock the safety device. This operation is called a manual reset
- Close the cover, taking care with the cables and gasket, and tighten the three screws
- With the knob still set to the minimum temperature, plug the device into the mains and set the desired temperature
- If the safety thermostat activates again after resetting, investigate other possible causes or replace the thermostat itself

Note: This is a highly energy-efficient device; we recommend setting the thermostat below 60°C (approximately ¾ of a turn of the knob). Reducing the temperature is recommended to prevent, as far as possible, the formation of limescale deposits, which cause the heating element to overheat, reducing its useful life.

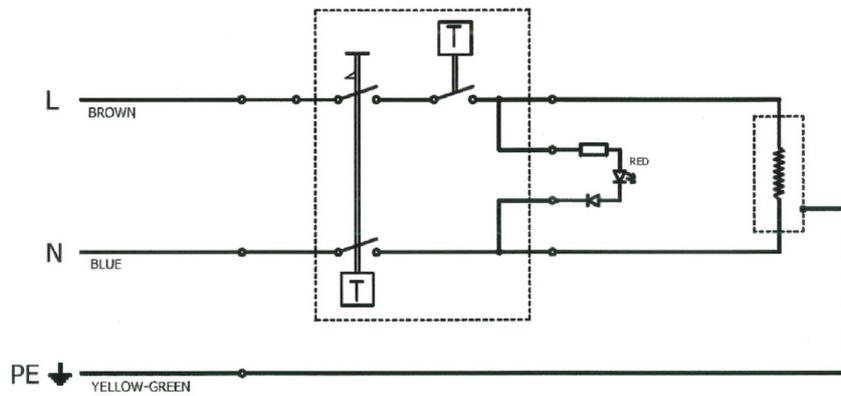
GENERAL RECOMMENDATIONS FOR USERS

WARNING! The device must not be used by children or persons with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge.

Children should be supervised to ensure that they do not play with the device. Keep children away during cleaning and maintenance.. Keep the device and its cable out of the reach of children. When using electrical appliances, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons.

WARNING! Before turning on the device, check that it has been immersed in water.

WIRING DIAGRAM::



IMPORTANT! READ THESE INSTRUCTIONS BEFORE INSTALLING THE ELEMENT.

Installation and maintenance procedures must ONLY be carried out by qualified technical personnel. The warranty is valid only if the installation and maintenance instructions are followed. The manufacturer is not liable for any damage caused by incorrect installation or failure to follow the instructions contained in this manual.

TECHNICAL DATA:

- Voltage: 220-240V
- Frequency: 50-60 Hz
- Power: 2000W / 3000W
- Thread: 1"1/2
- Regulation: external
- IP rating: IP54



SAFETY REQUIREMENTS:

- Installation must be carried out by authorized technicians
- The heating element must be correctly connected to the ground
- Ensure that the length of the port where the heating element is to be fitted is compatible with the cold zone of the element
- During installation, ensure that the heating element does not touch the internal parts of the tank
- The power supply requires protection up to 16A
- In case of damage to the power cable, consult qualified technicians

INSTALLATION INSTRUCTIONS (for qualified technical personnel only):

- Under no circumstances should the device be operated without water, as this would cause damage to the heating element and plastic parts
- The device is designed for use when immersed in water; any other use is prohibited
- The device must be mounted horizontally with the power cable facing downwards
- The installed hydraulic seal system on the device (O-ring) requires a suitable housing for its type and size
- If the housing is not suitable for the purpose, i.e., if it does not guarantee adequate hydraulic sealing, an additional and/or replacement seal (liquid sealant/other) is required to ensure sealing under the conditions of use and in compliance with the regulations and local laws
- It is recommended that the hexagonal brass cap is tightened with an appropriate wrench (do not tighten the plastic body).
- The device must not be installed in the presence of other heat sources with temperatures exceeding 85°C
- The device must be installed in accordance with the purpose for which it was designed; any other use is not allowed

WARNING:

- The choice of the most suitable electrical resistance for the intended use is at the discretion of the designer
- If the water hardness is >20°F, it is strongly recommended to install an appropriate system (e.g., water softener) to reduce limescale formation inside the calorifier
- Depending on the hardness of the water and the conditions of use, it may be necessary to clean the heating element periodically (to remove limescale deposits), taking care not to damage it

MAINTENANCE AND CLEANING:

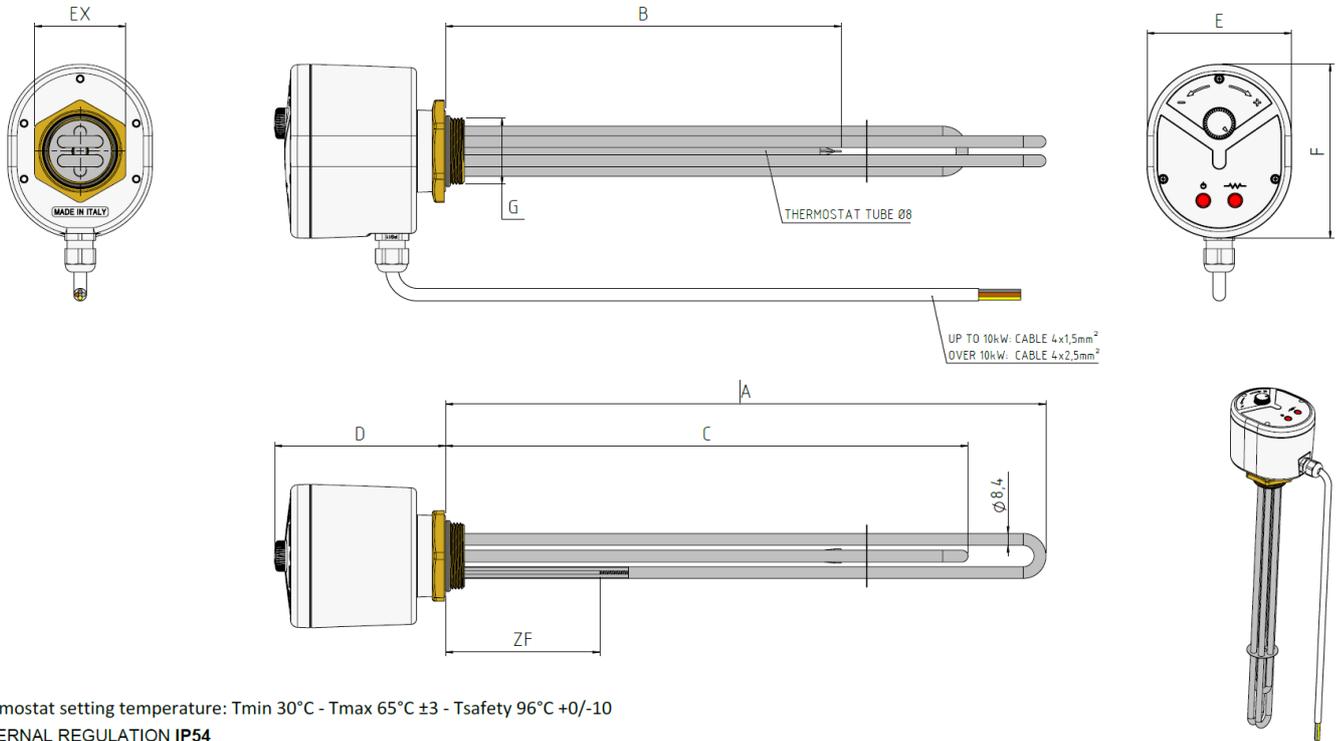
- Maintenance and cleaning must only be carried out by qualified technical personnel or authorized service centers, in compliance with current regulations and requirements.
- Disconnect the device from the power supply before carrying out any technical maintenance and/or cleaning.

WARRANTY:

- The warranty terms comply with European regulations.
- The warranty is valid provided that the device is installed and connected correctly in accordance with the provided instructions.
- The warranty **does not** cover the following:
 - Damage caused during installation
 - Incorrect installation and failure to maintain the device
 - Improper repairs or repairs carried out by unqualified personnel
 - Improper use of the device
- The manufacturer does not cover the costs of assembling and disassembling the device



DO NOT DUMP, DISPOSE RIGHT!
Sort your waste properly; electrical and electronic devices can be recycled.
Protect the environment!



Thermostat setting temperature: T_{min} 30°C - T_{max} 65°C ±3 - T_{safety} 96°C +0/-10
EXTERNAL REGULATION IP54

| Part number | <i>kW</i> | ZF cold zone (mm) | A (mm) | B probe (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (GAS) | EX (mm) |
|--------------------|-----------|-------------------------|-----------|--------------------|-----------|-----------|-----------|-----------|------------|------------|
| RES050-L375-6-T-BT | 5 | 110 | 375 | 275 | 320 | 122 | 103 | 125 | 1"½ | 65 |
| RES060-L435-6-T-BT | 6 | | 435 | | 375 | | | | | |
| RES090-L610-6-T-BT | 9 | | 610 | | 550 | | | | | |
| RES100-L670-6-T-BT | 10 | | 670 | | 610 | | | | | |
| RES120-L727-6-T-BT | 12 | | 730 | | 670 | | | | | |
| RES150-L870-6-T-BT | 15 | | 870 | | 815 | | | | | |

| Part number | <i>kW</i> | Volt | Elements Length (mm) | Power density (W/cm ²) | Cable Length (mt) | Temperature range (°C) | Safety thermostat cut-out temp. (°C) | External box protection rating |
|--------------------|-----------|-------|----------------------------|---------------------------------------|-------------------------|------------------------------|--|--------------------------------------|
| RES050-L375-6-T-BT | 5 | 400/3 | 760x2 / 644x1 | 8,4 / 9,9 | 2,0 | 30 ÷ 65 (±3) | 96 (+0/-10) | 54 |
| RES060-L435-6-T-BT | 6 | | 878x2 / 760x1 | 8,7 / 10 | | | | |
| RES090-L610-6-T-BT | 9 | | 1229x2 / 1112x1 | 9,3 / 10,2 | | | | |
| RES100-L670-6-T-BT | 10 | | 1346x2 / 1229x1 | 9,4 / 10,3 | | | | |
| RES120-L727-6-T-BT | 12 | | 1463x2 / 1346x1 | 10,4 / 11,3 | | | | |
| RES150-L870-6-T-BT | 15 | | 1755x2 / 1638x1 | 10,8 / 11,6 | | | | |

ELECTRICAL CONNECTION:

Ensure that the main characteristics (voltage and others) comply with the requirements shown on the label.

WARNING! Correct connection of the grounding system is essential to ensure the safety, operation, and life of the appliance itself. It is also mandatory to ensure the validity of the warranty.

The left indicator lights up when the heating element is connected to the electrical grid, while the right indicator lights up when the heating element is working.

SAFETY THERMOSTAT:

In accordance with current EN and IEC standards, the heating elements are equipped with a safety thermostat.

In the event of overheating, the safety thermostat automatically and permanently switches off the electrical network. It must then be reset manually by following the procedure described below. Before doing so, identify and eliminate the issues that caused the overheating. Contact a qualified technician.

In the event of a safety intervention, proceed as follows to perform a manual reset (only for qualified technical personnel):

- Disconnect the heating element from the electrical power supply
- Find out what is causing the problem and fix it
- Turn the knob to "minimum" until you hear a click
- Unscrew the three screws on the cover and remove it, taking care not to damage the indicator light cables
- Before you reset the device, check the temperature is below 40°C. If it is not, there is a risk of damage
- Use a screwdriver to press the red button on the thermostat (the one next to the word "SAFETY") back to its original position. Keep pressing it until you hear a "click". This will unlock the safety device. This operation is called a manual reset
- Close the cover, taking care with the cables and gasket, and tighten the three screws
- With the knob still set to the minimum temperature, plug the device into the mains and set the desired temperature
- If the safety thermostat activates again after resetting, investigate other possible causes or replace the thermostat itself

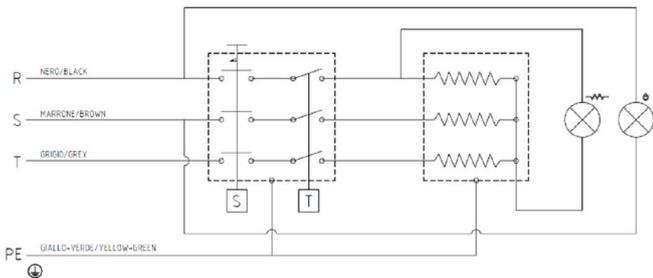
Note: This is a highly energy-efficient device: we recommend setting the thermostat below 60°C (approximately ¾ of a turn of the knob). Reducing the temperature is recommended to prevent, as far as possible, the formation of limescale deposits, which cause the heating element to overheat, reducing its useful life.



GENERAL RECOMMENDATIONS FOR USERS

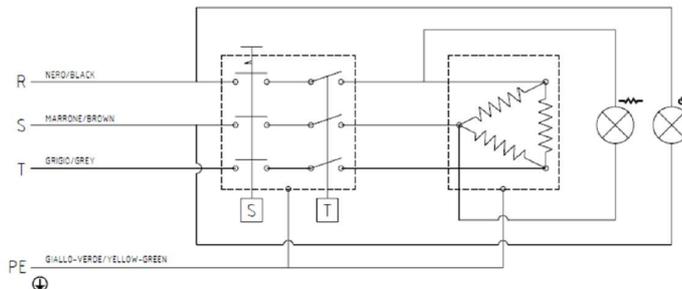
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WIRING DIAGRAM



For powers above 6kW (400V Δ) →

← For powers up to 6kW (400V Y)

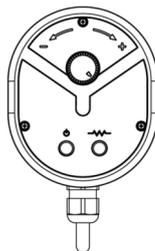


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TECHNICAL DATA:

- Voltage: 400V3
- Frequency: 50-60 Hz
- Power: 5 to 15 kW
- Thread: 1"1/2
- Regulation: external
- IP rating: IP54



SAFETY REQUIREMENTS:

- Installation must be carried out by authorized technicians
- The heating element must be correctly connected to the ground
- Ensure that the length of the port where the heating element is to be fitted is compatible with the cold zone of the element
- During installation, ensure that the heating element does not touch the internal parts of the tank
- Up to 10kW the power supply requires protection up to 16A
- From 12kW (+5/-10%) to 15kW (0/-10%) the power supply requires protection up to 25A
- In case of damage to the power cable, consult qualified technicians

INSTALLATION INSTRUCTIONS (for qualified technical personnel only):

- Under no circumstances should the device be operated without water, as this would cause damage to the heating element and plastic parts
- The device is designed for use when immersed in water; any other use is prohibited
- The device must be mounted horizontally with the power cable facing downwards
- The installed hydraulic seal system on the device (O-ring) requires a suitable housing for its type and size
- If the housing is not suitable for the purpose, i.e., if it does not guarantee adequate hydraulic sealing, an additional and/or replacement seal (liquid sealant/other) is required to ensure sealing under the conditions of use and in compliance with the regulations and local laws
- It is recommended that the hexagonal brass cap is tightened with an appropriate wrench (do not tighten the plastic body).
- The device must not be installed in the presence of other heat sources with temperatures exceeding 85°C
- The device must be installed in accordance with the purpose for which it was designed; any other use is not allowed

WARNING:

- The choice of the most suitable electrical resistance for the intended use is at the discretion of the designer
- If the water hardness is >20°F, it is strongly recommended to install an appropriate system (e.g., water softener) to reduce limescale formation inside the calorifier
- Depending on the hardness of the water and the conditions of use, it may be necessary to clean the heating element periodically (to remove limescale deposits), taking care not to damage it

MAINTENANCE AND CLEANING:

- Maintenance and cleaning must only be carried out by qualified technical personnel or authorized service centers, in compliance with current regulations and requirements.
- Disconnect the device from the power supply before carrying out any technical maintenance and/or cleaning.

WARRANTY:

- The warranty terms comply with European regulations.
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