

# ***RESMED***

## **C-Series Tango™**

POSITIVE AIRWAY PRESSURE DEVICE

### **User Guide**

English



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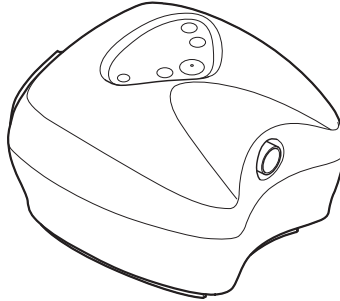


For patent information, see [www.resmed.com/ip](http://www.resmed.com/ip)

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# C-Series Tango™

## User Guide



### Intended Use

The ResMed Tango CPAP system is indicated for the treatment of obstructive sleep apnoea (OSA) in patients weighing more than 30kg (66 lb). It is intended for home and hospital use.

### Contraindications

Positive airway pressure therapy may be contraindicated in some patients with the following pre-existing conditions:

- severe bullous lung disease
- pneumothorax
- pathologically low blood pressure
- dehydration
- cerebrospinal fluid leak, recent cranial surgery or trauma.

### Adverse Effects

Patients should report unusual chest pain, severe headache or increased breathlessness to their prescribing physician. An acute upper respiratory tract infection may require temporary discontinuation of treatment.

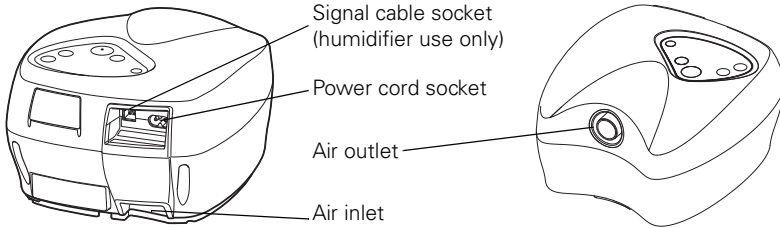
The following side effects may arise during the course of therapy with the Tango:

- drying of the nose, mouth or throat
- nosebleed
- bloating
- ear or sinus discomfort
- eye irritation
- skin rashes.

# Parts of the Tango

Your Tango comprises:

- ResMed C-Series Tango flow generator (shown below)
- Power cord
- 2 m (6'6") air tubing.



# Masks

The ResMed mask systems recommended for use with the Tango are:

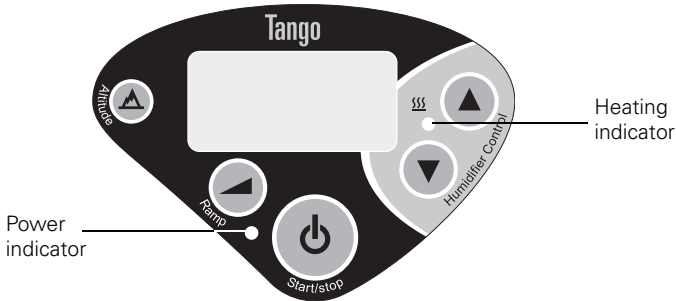
- Mirage™ Full Face Mask Series II
- Ultra Mirage™ Full Face Mask
- Mirage Swift™ Nasal Pillows System
- Mirage Swift II Nasal Pillows System
- Papillon™ Nasal Mask
- Silent Papillon™ Nasal Mask
- Meridian™ Nasal Mask
- Mirage Nasal Mask
- Mirage Activa™ Nasal Mask
- Mirage Vista™ Nasal Mask
- Ultra Mirage™ Nasal Mask
- Ultra Mirage II Nasal Mask
- Mirage Quattro™ Full Face Mask
- Mirage Liberty™ Full Face Mask

For information on using masks, see your mask manual.

# Humidifiers

For information on using the ResMed C-Series Heated Humidifier or the ResMed Passover, see your humidifier manual.

## The Tango Interface



Standby mode	When the Tango is powered, the power indicator is lit and the run hours are displayed on the LCD. All changes to altitude and ramp settings are made in standby mode.
Ramp	Setting a ramp time enables therapy to start at a low pressure and build up to full pressure during the ramp time (see "Set ramp time").
Altitude	Changes in altitude affect the pressure delivered by the Tango. The altitude feature compensates for pressure changes related to changes in altitude (see "Set altitude").
Run hours	Run hours are displayed when the Tango is in standby mode.
Humidifier	The humidifier buttons are used when using the ResMed C-Series Heated Humidifier and when setting the altitude. The heating indicator lights when the humidifier is on.

## Setting up the Tango



### CAUTION

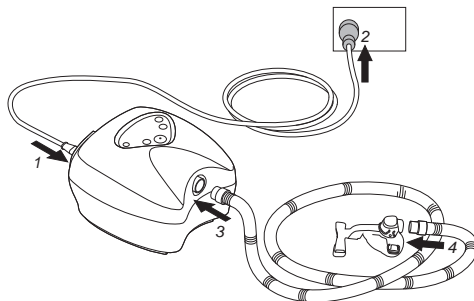
- Be careful to place the device where it cannot be bumped, and where no one will trip over the power cord.
- If you put the device on the floor, make sure the area is free from dust and clear of bedding, clothes or other objects that could block the air inlet.
- Make sure the area around the device is dry and clean.



### WARNING

- Make sure the power cord and plug are in good condition and the equipment is not damaged.


- Only ResMed air tubing should be used with the device. A different type of air tubing may alter the pressure you actually receive and reduce the effectiveness of your treatment.
- Blocking the hose and/or air inlet of the device while in operation could lead to overheating of the device.



1. Connect the power cord to the rear of the Tango.
2. Plug the other end into a power outlet.
3. Connect the air tubing to the air outlet of the Tango.
4. Connect the assembled mask system to free end of air tubing.

## Using the Tango



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Start therapy	Press  when the Tango is in standby mode. A circulating dash symbol displays on the LCD. If ramp is set, the ramp time displays on the LCD. When ramping is finished, therapy continues at the prescribed pressure. If no ramp is set, therapy starts immediately at the prescribed pressure.
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
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Stop therapy	Press  .
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Set ramp time	<ol style="list-style-type: none"> <li>1. Repeatedly press  until the LCD displays the desired time.</li> <li>2. Press  to accept changes and start therapy. (The Tango returns to standby mode after 5 seconds if no button is pressed.) The ramp settings are (in minutes): Off, 10, 20, 45.</li> </ol>
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Set altitude	<ol style="list-style-type: none"> <li>1. Hold  down for 3 seconds until the current altitude setting is displayed.</li> <li>2. Press  or  to change the altitude setting.</li> <li>3. Press  to accept changes and return to standby mode. (The Tango returns to standby mode after 10 seconds if no button is pressed.)</li> </ol> <p>The <b>altitude settings</b> are:</p> <ul style="list-style-type: none"> <li>• (0–609 m/0–2000’),</li> <li>• (610–1219 m/2001–4000’),</li> <li>• (1220–1828 m/4001–6000’),</li> <li>• (1829–2591 m/6001–8500’).</li> </ul>
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## Cleaning and Maintenance



### **WARNING**

Beware of electric shock. Do not immerse the flow generator or power cord in water. Always unplug the flow generator before cleaning and make sure it is dry before reconnecting.



### **CAUTION**

- Do not hang the air tubing in direct sunlight as it may harden over time and eventually crack.
- Do not use bleach, chlorine, alcohol, or aromatic-based solutions, moisturising or antibacterial soaps or scented oils to clean the air tubing or the Tango. These solutions may cause hardening and reduce the life of the product.

### **Daily**

Disconnect the air tubing and hang it in a clean, dry place until next use.

### **Weekly**

1. Remove the air tubing and wash it in warm water and mild detergent. Rinse thoroughly, hang and allow to dry.
2. Before next use, reassemble the mask and headgear.
3. Reconnect the air tubing.

### **Monthly**

- Clean the exterior of the Tango with a damp cloth.
- Check the air filter for holes and blockage by dirt. Replace it every six months, or more often in a dusty environment.

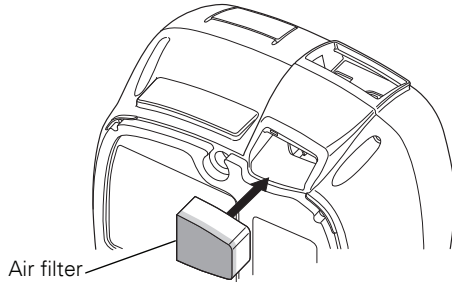
For information on cleaning your mask or humidifier, refer to the manual supplied with your mask or humidifier.

# Changing the Air Filter



## CAUTION

Do not wash the air filter.



1. With the power cord and air tubing disconnected, turn the Tango upside down so the air inlet is facing you. The air filter is inside the air inlet.
2. Pull the old air filter out of the air inlet.
3. Put the new air filter into the air inlet in the direction shown by the arrow, with the blue side facing towards you.

## Troubleshooting

Problem	Possible Cause	Solution
Tango won't start	Power cord not connected properly.	Check power cord.
	Faulty power outlet.	Try another power outlet.
No/low air flow	Air tubing not connected properly.	Adjust air tubing connection.
	Air tubing is blocked, pinched or punctured.	Unblock or free air tubing. Check air tubing for punctures.
Treatment pressure seems either low or too high	Altitude setting incorrect.	Adjust altitude setting.
LCD displays an error message and treatment stops or can't be started	Problem with motor.	Contact your supplier.



# Technical Specifications

<b>Operating pressure range</b>	4 to 20 cm H <sub>2</sub> O
<b>Dimensions (L x W x H)</b>	215 mm x 189 mm x 114 mm (8.5" x 7.4" x 4.5")
<b>Weight</b>	1.1 kg (2.4 lb)
<b>Power Supply</b>	Input range 100–240V, 50/60Hz, 20VA/10W (typical power consumption), 36VA/15W (maximum power consumption)
<b>Operating Temperature</b>	+5°C to +40°C (+41°F to +104°F)
<b>Operating Humidity</b>	10%–95% non-condensing
<b>Storage and Transport Temperature</b>	-20°C to +60°C (-4°F to +140°F)
<b>Storage and Transport Humidity</b>	10%–95% non-condensing
<b>Atmospheric Pressure Range</b>	1060 hPa (sea level) to 680 hPa (2591 m/8500')
<b>Electromagnetic Compatibility</b>	Product complies with all applicable electromagnetic compatibility requirements (EMC) according to IEC60601-1-2, for residential, commercial and light industry environments
<b>Air Filter</b>	Two-layered, powder-bonded, polyester non-woven fiber
<b>Air Tubing</b>	Flexible plastic, 2 m (6'6")
<b>Air Outlet</b>	The 22 mm (0.87") conical air outlet complies with EN 1281-1
<b>IEC 60601-1 Classifications</b>	Class II (double insulation), Type CF
<b>Noise level</b>	Radiated sound pressure is measured at <32dBA at 10 cm H <sub>2</sub> O and 1 m according to ISO17510-1.

*The manufacturer reserves the right to change these specifications without notice.*

# Symbols which appear on the product



Attention, consult accompanying documents



Type CF equipment



Class II equipment



IPX1

Drip proof



European Authorised Representative



Canadian Standards Association



Manufacturer



Environmental information

WEEE 2002/96/EC is a European Directive that requires the proper disposal of electrical and electronic equipment. This device should be disposed of separately, not as unsorted municipal waste. To dispose of your device, you should use appropriate collection, reuse and recycling systems available in your region. The use of these collection, reuse and recycling systems is designed to reduce pressure on natural resources and prevent hazardous substances from damaging the environment.

If you need information on these disposal systems, please contact your local waste administration. The crossed-bin symbol invites you to use these disposal systems. If you require information on collection and disposal of your ResMed device please contact your ResMed office, local distributor or go to [www.resmed.com/environment](http://www.resmed.com/environment).



## General Warnings and Cautions

A **warning** alerts you to possible injury.

- Read the entire guide before using the Tango.
- The advice in this guide should not supersede instructions given by the prescribing physician.
- The Tango should only be used with masks (and connectors\*) recommended by ResMed, or by a physician or respiratory therapist. A mask should not be used unless the Tango is turned on and operating properly. The vent hole or holes associated with the mask should never be blocked.

**Explanation:** The Tango is intended for use with special masks (or connectors\*) with vent holes allowing a continuous flow of air out of the mask.

- When the device is turned on and functioning properly, new air from the device flushes the exhaled air out through the mask vent holes. If the device is not operating, insufficient fresh air is provided through the mask, and the exhaled air may be rebreathed. Rebreathing exhaled air for longer than several minutes can sometimes lead to suffocation. If there is a power failure or the device machine malfunctions, remove the mask.
- The Tango can be set to deliver pressures up to 20 cm H<sub>2</sub>O. In the unlikely event of certain fault conditions, pressures up to 30 cm H<sub>2</sub>O are possible.
- If oxygen is used with this device, the oxygen flow must be turned off when the device is not operating. If oxygen has been left on while the device is not operating, disconnect the oxygen and wait 30 minutes before turning on the flow generator again.

**Explanation:** When the CPAP device is not in operation and the oxygen flow is left on, oxygen delivered into the air delivery tubing may accumulate within the CPAP machine enclosure and create a risk of fire.

- Oxygen supports combustion. Do not use oxygen while you are smoking or in the presence of an open flame.
- Always ensure air is flowing from the device before turning on the oxygen supply.
- Always turn the oxygen supply off before stopping the airflow from the device.

**Note:** *At a fixed rate of supplemental oxygen flow, the inhaled oxygen concentration will vary, depending on where the oxygen is introduced, pressure settings, patient breathing pattern, mask selection and leak rate.*

- Explosion hazard—do not use in the vicinity of flammable anaesthetics.
- Do not use the Tango if there are obvious external defects or unexplained changes in performance.
- Do not open the Tango case. There are no user serviceable parts inside. Repairs and internal servicing should only be performed by an authorised service agent.

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\* Ports may be incorporated into the mask or in connectors that are near the mask.

A **caution** explains special measures for safe and effective use of the device.

- At low pressures, the flow through the exhalation ports of your mask may not clear all exhaled gas from the tubing. Some rebreathing may occur.
- The airflow for breathing produced by this device can be as much as 6°C (11°F) higher than the temperature of the room. Be careful if the room temperature is warmer than 32°C (90°F).

## **Servicing**

The Tango should be inspected by an authorised ResMed service centre 5 years from the date of manufacture. Before this, the device is intended to provide safe and reliable operation if it is operated and maintained according to the instructions provided by ResMed. Warranty details are provided with the device at the time of original supply. As with all electrical devices, if any irregularity becomes apparent, you should have the device inspected by an authorised ResMed service centre.

## Guidance and Manufacturer's Declaration - Electromagnetic Emissions and Immunity

### Guidance and manufacturer's declaration – electromagnetic emissions

The C-Series Tango system is intended for use in the electromagnetic environment specified below. The customer or the user of the C-Series Tango system should assure that the device is used in such an environment.

Emissions test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR11	Group 1	The C-Series Tango system uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The C-Series Tango system is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage network that supplies buildings used for domestic purposes.
Harmonic Emissions IEC 61000-3-2	Class A	
Voltage Fluctuations/Flicker Emissions IEC 61000-3-3	Complies	

Medical Electrical Equipment needs special precautions regarding EMC and needs to be installed and put into service according to EMC information provided in this document.

**Warnings:** The C-Series Tango system should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, the C-Series Tango system should be observed to verify normal operation in the configuration in which it will be used.

The use of accessories (eg humidifiers) other than those specified in this manual is not recommended. They may result in increased emissions or decreased immunity of the C-Series Tango system.

## Guidance and manufacturer's declaration—electromagnetic immunity


The C-Series Tango system is intended for use in the electromagnetic environment specified below. The customer or the user of the C-Series Tango system should assure that the device is used in such an environment.

Immunity test	IEC60601-1-2 test level	Compliance level	Electromagnetic environment—guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact  ±8 kV air	±6 kV contact  ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines  ±1 kV for input/output lines	±2 kV  Not Applicable	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode  ±2 kV common mode	±1 kV differential mode  ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines. IEC 61000-4-11	<5% $U_t$ (>95% dip in $U_t$ ) for 0.5 cycle  40% $U_t$ (60% dip in $U_t$ ) for 5 cycles  70% $U_t$ (30% dip in $U_t$ ) for 25 cycles  <5% $U_t$ (>95% dip in $U_t$ ) for 5 sec	< 12V (>95% dip in 240V) for 0.5 cycle  96V (60% dip in 240V) for 5 cycles  168V (30% dip in 240V) for 25 cycles  <12V (>95% dip in 240V) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the C-Series Tango system requires continued operation during power mains interruptions, it is recommended that the C-Series Tango system be powered from an uninterruptible power source.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE:  $U_t$  is the AC mains voltage prior to application of the test level.

## Guidance and manufacturer's declaration—electromagnetic immunity

The C-Series Tango system is intended for use in the electromagnetic environment specified below. The customer or the user of the C-Series Tango system should assure that the device is used in such an environment.

Immunity test	IEC60601-1-2 test level	Compliance level	Electromagnetic environment—guidance
Conducted RF IEC 61000-4-6  Radiated RF IEC 61000-4-3	3 Vrms 150 kHz to 80 MHz  10 V/m 80 MHz to 2.5 GHz	3 Vrms  10 V/m	<p>Portable and mobile RF communications equipment should be used no closer to any part of the C-Series Tango system, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d = 1.17 \sqrt{P}$ $d = 0.35 \sqrt{P} \text{ 80 MHz to 800 MHz}$ $d = 0.70 \sqrt{P} \text{ 800 MHz to 2.5 GHz}$ <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,<sup>a</sup> should be less than the compliance level in each frequency range.<sup>b</sup></p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

<sup>a</sup> Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the C-Series Tango system is used exceeds the applicable RF compliance level above, the C-Series Tango system should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the C-Series Tango system.

<sup>b</sup> Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 10 V/m.

**Recommended separation distances between portable and mobile RF communications equipment and the C-Series Tango system.**

The C-Series Tango system is intended for use in an environment in which radiated RF disturbances are controlled. The customer or the user of the C-Series Tango system can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the C-Series Tango system as recommended below, according to the maximum output power of the communications equipment.

	<b>Separation distance according to frequency of transmitter m</b>		
Rated maximum output power of transmitter W	150 kHz to 80 MHz $d = 1.17 \sqrt{P}$	80 MHz to 800 MHz $d = 0.35 \sqrt{P}$	800 MHz to 2.5 GHz $d = 0.7 \sqrt{P}$
0.01	0.17	0.04	0.07
0.1	0.37	0.11	0.22
1	1.17	0.35	0.7
10	3.69	1.11	2.21
100	11.70	3.50	7.0

For transmitters rated at a maximum output power not listed above, the recommended separation distance  $d$  in metres (m) can be determined using the equation applicable to the frequency of the transmitter, where  $P$  is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.



## Limited Warranty

ResMed warrants that your ResMed product shall be free from defects in material and workmanship for the period specified below from the date of purchase by the initial consumer. This warranty is not transferable.

Product	Warranty Period
ResMed humidifiers, ResControl™, ResLink™, ResTraxx™	1 Year
ResMed flow generators	2 Years
Accessories, water chambers and mask systems (including mask frame, cushion, headgear and tubing). Excludes single-use devices.	90 Days

*Note: Some models are not available in all regions.*

If the product fails under conditions of normal use, ResMed will repair or replace, at its option, the defective product or any of its components. This Limited Warranty does not cover:

- a) any damage caused as a result of improper use, abuse, modification or alteration of the product;
- b) repairs carried out by any service organisation that has not been expressly authorised by ResMed to perform such repairs;
- c) any damage or contamination due to cigarette, pipe, cigar or other smoke;
- d) any damage caused by water being spilled on or into a flow generator.

Warranty is void on product sold, or resold, outside the region of original purchase.

Warranty claims on defective product must be made by the initial consumer at the point of purchase.

This warranty is in lieu of all other express or implied warranties, including any implied warranty of merchantability or fitness for a particular purpose. Some regions or states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

ResMed shall not be responsible for any incidental or consequential damages claimed to have occurred as a result of the sale, installation or use of any ResMed product.

Some regions or states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from region to region.

For further information on your warranty rights, contact your local ResMed dealer or ResMed office.

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C-Series Tango
User
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