

# Infant T-piece resuscitator

Country of origin | India

## Health problem addressed

Nearly 2/3 of all newborn deaths (4 million annually) occur in 10 countries. Birth asphyxia is a leading contributor of neonatal deaths (23% of total neonatal deaths). Low birth weight & premature babies are especially prone to the same. Limited access to quality resuscitation devices & skilled care in low-resourced settings are big challenges. Urgent action is needed to address the issue of neonatal deaths and progress on MDG4, since 40% of under 5 deaths are in newborns.

## Product description

T-piece resuscitation that is easy, economical to use and is designed for safety. The compact, T-piece resuscitation device with in-built air-oxygen blend is gas powered and allows for precise control of delivery pressures and accurate blending of air-oxygen to deliver to the patient. The compact design doesn't allow for gas leakage and doesn't use any gas when switched off. Being extremely easy to use (single PIP knob operation, etc.), the caregiver can focus his/her attention on the baby rather than managing equipment.

### Developer's Claims of Product Benefits

The devices available offering the current standard of care do not provide a comprehensive resuscitation solution. The bag & mask device is manually operated and doesn't provide accurate control of pressures and gas flows. Other gas-operated devices require additional components & accessories (e.g. blender, flowmeter, connectors) to operate efficiently. The Infant T-Piece Resuscitator is an integrated and compact device with a built in blender and flowmeter with simpler controls making it really easy to use and operate.

## Suitability for low-resource settings

This resuscitator works well in government district hospital that has semi-skilled nurses and limited infrastructure (frequent power outages, etc.). The Resuscitator is fully gas driven and doesn't need any electricity to operate. It is easy to use and is rugged & reliable thus making it very usable in low resource settings. It comes with a Quick reference guide that makes for quick reading and quick understanding for the operator. So far, the unit has been successfully deployed and tested across many pilot sites in India and in Malaysia. These range from small private clinics, district hospitals, mother & child hospitals. Clinicians found that the clinical outcomes were favorable and that their workflow became simpler compared to existing devices. Clinicians appreciated that the product would be exceptionally useful in rural settings.

## Operating steps

Ensure that the ON/ OFF the switch located on the front of the unit, is OFF. Connect the air and oxygen supplies to the rear of the device via hoses. Connect the T-piece to the gas port on the front of the device. Turn ON the ON/OFF switch and adjust the PIP and flow rate via the knobs to the required value. Resuscitate the patient.

## Regulatory status

CE Certificate Number: CE01236. Notified Body Number:0086. ISO certification (ISO13485), EN ISO:10993. RoHS compliant

## Future work and challenges

One of the obstacles is government specifications and tenders. The documents need to be updated with new technologies so that the product can reach the markets it is intended for. Product adoption, awareness, education, training, distribution to penetrate market are all part of the process to taking this product to market.

## Use and maintenance

**User:** Intended for use by physician or nurse

**Training:** Minimal training required, device is accompanied by operator manual and videos.

**Maintenance:** Will require blender calibration every 2 years

## Environment of use

**Setting:** Designed for use in rural and urban indoor settings for secondary and tertiary levels of health care facilities

**Energy and facility requirements:** Gas powered (compressed oxygen and air) requires 40-80 psi, 70 LPM, also requires environment to be in eth ranges of 16-41°C and 0-90% humidity

## Product specifications

**Weight (kg):** 5 kg

**Dimensions:** 145mm x 313 mm x 222mm

**Consumables:** T piece apparatus

**Lifetime:** 7 years

**Retail price (USD):** 1 600

**Price of consumables (USD):** 100

**Year of commercialization:** 2014

**Currently sold in:** India, Malaysia, Brunei and Countries in Africa and ASEAN.



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