



## Quick Set Up Guide – APRV



This Quick Pocket Guide is not a replacement or substitute for the Instructions for Use and Any use of the device requires full understanding and strict observation of the Instructions for Use.

The abbreviations and terms used in this booklet apply for the Dräger Evita and V-series ventilators and may differ from devices of other vendors.

## SPECIAL THANKS

We would like to extend our warm thanks to Dr Luigi Camporota for his outstanding assistance in producing this booklet.



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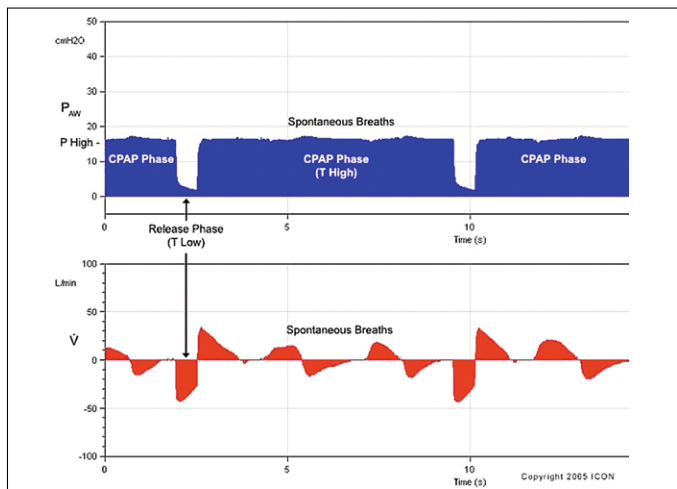
## IMPORTANT NOTES

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## APRV – WHAT IS IT?



- Airway Pressure Release Ventilation – Applies continuous positive airway pressure identical to CPAP (P High)
- Adds a time cycled release phase to a lower set pressure (P Low)
- Spontaneous breathing can be integrated and is independent of the ventilator cycle

## WHY USE APRV?

- Hypoxaemic respiratory failure (including ARDS)
- With/without associated (not primary i.e, severe asthma) hypercapnia

## HOW TO SET IT UP?

### P HIGH

- Set at Plateau or Peak Pressure set during conventional ventilation (typically 25-35cmH<sub>2</sub>O)
- Based on Oxygenation index
- Based on Pressure Volume Curve (this can be less reliable and may be difficult to identify in some patients)
- P High >35 cm H<sub>2</sub>O may be necessary in morbid obesity or in other conditions associated with low chest wall compliance
- P High >25 cm H<sub>2</sub>O consider use of non-compliant circuit

### P LOW

- ALWAYS Set at 0cmH<sub>2</sub>O (correct setting of T low will create intrinsic PEEP)

### T HIGH

- Set at 4-6 seconds\* (average around 5 secs)

### SHORTER IF:

- No Spontaneous Breathing
- High PaCO<sub>2</sub> at the beginning
- Poor diffusing capacity

### LONGER IF:

- Spontaneous Breathing
- Normal PaCO<sub>2</sub>
- Good Diffusion
- Weaning

## T LOW

- Titrate to maintain constant end expiratory lung volume
- Assess and adjust using end expiratory flow waveform measurement
- Freeze waveforms and set T low at 75%\* of Peak Expiratory Flow



Freeze Waveform & Measure Peak Expiratory Flow



Set T Low at 75% PEFR

## OTHER SETTINGS:

- Tube Compensation 100% (if available)
- Pressure Support 0

## TROUBLE-SHOOTING?

### OXYGENATION (LOW SPO<sub>2</sub>)

- Optimise end-expiratory or release lung volume
- Re-assess release volume to ensure T-PEFR is 75%
- If oxygenation poor and T-PEFR < 50%, decrease release time until T-PEFR 75%
- Optimise gas exchange surface area by adjusting mPaw
- Increase P<sub>high</sub> and T<sub>high</sub>, alone or simultaneously
- Pay attention to hemodynamics (fluid status and right heart function)

### VENTILATION (HIGH PCO<sub>2</sub>):

- Avoid over sedation
- Re-assess release volume to ensure at 75% T-PEFR
- Increase alveolar ventilation (preferred method) increase P<sub>high</sub> or P<sub>high</sub> and T<sub>high</sub> simultaneously
- Increase minute ventilation—decrease T<sub>high</sub> and increase P<sub>high</sub> simultaneously

### WEANING:

- Simultaneously reduce P<sub>high</sub> and increase T<sub>high</sub> for a gradual reduction of mPaw and to increase the contribution of spontaneous to total minute ventilation.
- Progress to CPAP with ATC when P<sub>high</sub> 16 and T<sub>high</sub> 12–15 sec (APRV = 90% CPAP)
- Wean CPAP (ATC) and consider extubation when CPAP 10-12cm H<sub>2</sub>O

\*in restrictive lung disease









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