



## VPAP<sup>™</sup> Technology

Quiet comfort. More compliance.

Patients, as individuals, have different conditions and different therapy needs. Some require additional comfort measures to give them the best opportunity for long-term compliance. Some have unique lung and chestwall conditions creating breath synchronization challenges that require ventilatory assistance. VPAP<sup>™</sup> devices offer the ultimate in quiet, comfortable bilevel therapy—proven technologies combined with maximum clinical control—to help you meet the unique needs of even your most challenging patients.

#### Vsync<sup>™</sup> for reliable pressure delivery

Unique to ResMed's VPAP devices, Vsync<sup>™</sup> monitors and compensates for leak by continuously and automatically adjusting the baseline flow. This enables reliable triggering and cycling while maintaining the set pressures.





#### Trigger and cycle

Under normal conditions, the VPAP device triggers (initiates IPAP) and cycles (terminates IPAP and changes to EPAP) as it senses the change in patient flow. Patient breath detection is further enhanced by Vsync, ResMed's automatic leak management feature. Patients with very unique conditions may further benefit from adjustable trigger/cycle sensitivity settings.



# ResMed

#### **Rise time adjustment**

Rise time sets the time taken for the VPAP to reach IPAP. The greater the rise time value, the longer it takes for pressure to increase from EPAP to IPAP.

Patients with a high ventilatory demand may prefer a shorter rise time, while patients who are slow breathers may prefer a longer rise time.



#### Note:

TiControl

Cycle

window

Ti Max

Ti Min

Patient

Pressure

flow

A prolonged rise time inhibits fast pressurization; therefore, rise time should not be set longer than Ti Max or the patient's normal inspiratory time.

Ti Max limits the inspiration time for

patients who require

a longer expiration

Ti Min prevents the premature

cycling to EPAP for

inspiratory pressure

is extremely weak

patients whose

time

### TiControl<sup>™</sup> for maximum control and customized therapy

Another unique feature of ResMed's bilevels, TiControl<sup>™</sup> allows you to set minimum and maximum inspiratory time limits to accommodate individual respiratory conditions. The minimum and maximum time limits are set at either side of the patient's ideal spontaneous inspiratory time, providing a "controlled period" for the patient to breathe on their own and spontaneously cycle to EPAP. The minimum time limit is set via the Ti Min parameter and the maximum time limit is set via the Ti Max parameter. TiControl's Ti Max and Ti Min parameters play a significant role in maximizing synchronization by effectively intervening to limit or prolong the inspiratory time when required. Along with Vsync, this ensures synchronization even in the presence of significant mouth and/or mask leak.

The following table is a guide to selecting the Ti Max and Ti Min values that best correspond to the patient's respiratory rate and inspiration and expiration ratio, depending on their respiratory condition.

Patient breath (BPM)	Ttot = 60/ BPM (sec)	I:E = 1:2 (reference)	Sufficient inhalation time I:E = 1:1		Secure exhalation time I:E = 1:3
			Ti Min	Ti Max	Ti Max
10	6	2.0	1.0	2.0	1.5
15	4	1.3	1.0	2.0	1.3
20	3	1.0	0.8	1.5	1.0
25	2.4	0.8	0.7	1.2	0.8
30	2	0.7	0.6	1.0	0.7
35	1.7	0.6	0.5	0.8	0.7
40	1.5	0.5	0.5	0.7	0.7

#### Notes:

Factory default values are Ti Max = 2.0 seconds and Ti Min = 0.3 seconds.

I:E = 1:1 - Ti Min prevents the premature cycling to EPAP for patients whose inspiratory effort is extremely weak.

I:E = 1:3 - Ti Max limits the inspiration time for patients who require a longer expiration time.

Combine the S9 VPAP with ResMed's premium masks for a system that delivers more comfort and compliance.

