

## SyncPlus® – Adaptable non-invasive ventilation

When using non-invasive ventilation, synchronized ventilation enhances patient comfort. SyncPlus® is a built-in function of Carina®, incorporating automatic leakage compensation, automatic cycle learning technology and a multi-sense trigger.



D-405983-2015

One of the major challenges of non-invasive ventilation is to create an optimum synchronization between the ventilator and a mostly awake patient despite the fact that there are constantly changing and steady leakages.

An optimum synchronization is generated by an early identification of every spontaneous breath. To reach such accordance between ventilator and patient it is necessary to constantly adapt the settings of the ventilator. This is time consuming and requires a high level of medical knowledge.

To allow individualized and comfortable non-invasive ventilation, Dräger Carina provides the integrated function SyncPlus as an automatic support for the patient's spontaneous work of breathing.

**SyncPlus is a combination of:**

### **Automatic Leakage Compensation**

Automatic leakage compensation enables the automatic adaption of the ventilator in case of changing leakages during a non-invasive ventilation. This prompt responsiveness makes it possible to reach and deliver the necessary volume for the patient. Based on this smart function it is possible to minimize the problem of auto-triggering which can be caused by leakages.

### **Cycle Learning Technology and Multi-Sense Trigger**

With SyncPlus, trigger sensitivity is constantly adapted to the patient's actual work of breath. Dräger Carina screens the breathing of the patient and automatically reduces the trigger for the following breath. With its unique combination, it incorporates flow, pressure and flow gradient into a balanced trigger detection algorithm.



D-36741-2015

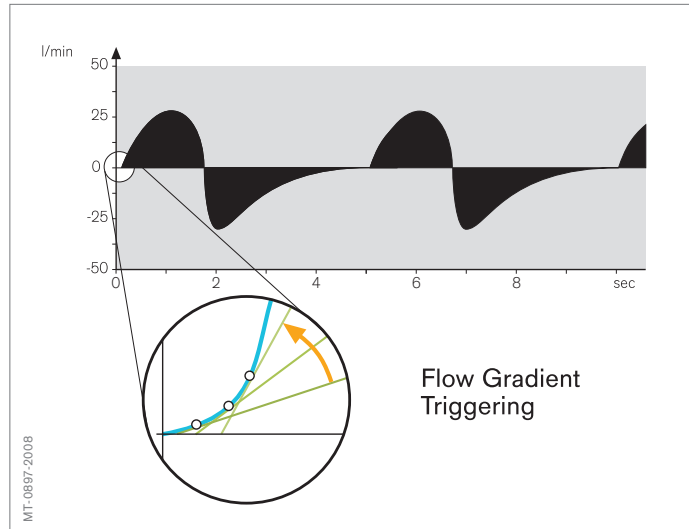
Dräger Carina® – equipped with the function SyncPlus enables synchronized ventilation with a high patient comfort.

Ultimately, this improves patient tolerance to ventilation which improves the likelihood of successful NIV treatment. SyncPlus reduces the possibility of false triggers or 'ineffective efforts' not recognized by the ventilator.

**Due to the unique SyncPlus algorithm, SyncPlus quickly and conveniently adapt the needs of each individual patient while even weak and spontaneous breaths will be recognized and be supported by the Dräger Carina.**

#### The main benefits of SyncPlus at a glance

- High patient comfort despite leakages or changed ventilation settings
- Decreased work of breathing
- Decreased need for caregiver intervention
- Adaptable with masks and invasive ventilation



## TECHNICAL DATA

Trigger setting	Normal, Sensitive, OFF
Multi-sense trigger criteria	Flow gradient, Flow rate, Pressure
Leakage compensation	Max. 50L/min (Leak alarm criteria)
Cycle learning	Definition of in- & expiratory time, based on previous 3-4 breaths
Available modes	Available in all ventilation modes except CPAP

SyncPlus is a standard function for Carina.

SyncPlus is applicable for both mask- and invasive ventilation.

#### CORPORATE HEADQUARTERS

Drägerwerk AG & Co. KGaA  
Moislinger Allee 53–55  
23558 Lübeck, Germany

[www.draeger.com](http://www.draeger.com)

#### Manufacturer:

Drägerwerk AG & Co. KGaA  
Moislinger Allee 53–55  
23558 Lübeck, Germany

#### REGION DACH

Drägerwerk AG & Co. KGaA  
Moislinger Allee 53–55  
23558 Lübeck, Germany  
Tel +49 451 882 0  
Fax +49 451 882 2080  
[info@draeger.com](mailto:info@draeger.com)

#### REGION EUROPE

Drägerwerk AG & Co. KGaA  
Moislinger Allee 53–55  
23558 Lübeck, Germany  
Tel +49 451 882 0  
Fax +49 451 882 2080  
[info@draeger.com](mailto:info@draeger.com)

#### REGION MIDDLE EAST, AFRICA

Drägerwerk AG & Co. KGaA  
Branch Office  
P.O. Box 505108  
Dubai, United Arab Emirates  
Tel +971 4 4294 600  
Fax +971 4 4294 699  
[contactuae@draeger.com](mailto:contactuae@draeger.com)

#### REGION ASIA / PACIFIC

Draeger Medical  
South East Asia Pte Ltd.  
25 International Business Park  
#04-27/29 German Centre  
Singapore 609916, Singapore  
Tel +65 6572 4388  
Fax +65 6572 4399  
[asia.pacific@draeger.com](mailto:asia.pacific@draeger.com)

#### REGION NORTH AMERICA

Draeger, Inc.  
3135 Quarry Road  
Telford, PA 18969-1042, USA  
Tel +1 800 4DRAGER  
(+1 800 437 2437)  
Fax +1 215 723 5935  
[info.usa@draeger.com](mailto:info.usa@draeger.com)

#### REGION CENTRAL

**AND SOUTH AMERICA**  
Dräger Panama Comercial  
S. de R.L.  
Complejo Business Park,  
V tower, 10th floor  
Panama City  
Tel +507 377 9100  
Fax +507 377 9130  
[contactcsa@draeger.com](mailto:contactcsa@draeger.com)

Locate your Regional Sales  
Representative at:  
[www.draeger.com/contact](http://www.draeger.com/contact)

