CO₂ Insufflation
The advantages of CO₂ insufflation during surgical interventions

CO₂ has been used as a medical gas for many decades. Carbon dioxide is not only a cost-efficient alternative but, as an endogenous gas, is well tolerated and also quickly absorbed.

CO₂ gas is non-combustible and thus ideal for use in HF surgery. The option of also connecting the insufflators to the hospital’s existing central gas supply ensures smooth functioning.
The tried and tested CO₂ insufflators ENDOFLATOR® and THERMOFLATOR® from KARL STORZ offer users optimal convenience combined with maximum patient safety.

Because the actual value and set value displays are positioned clearly side by side, precise monitoring of insufflation is quick and easy both with the ENDOFLATOR® and the THERMOFLATOR®. The set values can be set precisely using touch buttons and thus optimally adapted to the patient’s specific conditions.

In the event of a loss of gas during the intervention (e.g., due to an instrument change or during smoke evacuation), the automatic pressure regulation feature prevents the pneumoperitoneum from collapsing by means of an electronic control.

As a further safety measure, the safety system SECUVENT®, which is integrated in both models, guarantees constant intra-abdominal pressure conditions. Any overpressure is immediately detected, indicated by visual and acoustic warnings and reduced automatically without the user having to intervene.

Via SCB (Storz Communication Bus), the insufflators from KARL STORZ can be integrated simply and in a user-friendly manner into the intelligent OR of the future, OR1™. Integration means that all safety-relevant data can be displayed in the video image to make operating for the surgeon a highly ergonomic and pleasant working experience. In combination with an SCB-supported camera system, this function can also be used without an SCB computer.

Together with an IMAGE 1 HUB™ HD control unit and an IMAGE 1 H3-Z camera head, the insufflators can even be operated directly via the preprogrammed camera head buttons. To this end, the following functions can be programmed on the buttons:

- Gas on/off
- Setting as well as activation/deactivation of flow values
- Setting as well as activation/deactivation of pressure values
- Volume reset

At KARL STORZ we set great store by compatibility and, for this reason, customers have the option of retrofitting their ENDOFLATOR® or THERMOFLATOR® with an SCB module.
The smooth user interface is ideal for wipe-down disinfection and thus, in terms of hygiene, the insufflators meet the very highest of standards.

Flow properties

For optimal flow results, the complete insufflation chain and not just the device itself must be taken into account. Many factors within the chain serve to considerably reduce the flow set on the device. Right at the start of the insufflation chain, the filters significantly lower the flow. The LUER lock represents a further bottleneck which reduces the flow to a maximum of 18 l/min. Additional instruments and endoscopes in the trocar all serve to reduce the flow further.

With the corresponding high-flow accessories, such as the HICAP® trocars from KARL STORZ and the filters from mtp, a maximum flow of 30 l/min can be easily achieved over the entire insufflation chain right up to the patient.
The CO₂ ENDOFLATOR® is an insufflation device for universal use in endoscopic examinations and operations. With its CF classification, this insufflator can also be used without any difficulty in cardiac surgery.

**Electronic CO₂ ENDOFLATOR® 264305 08-1**
Set consisting of:
- 264305 20-1
- 400 A
- 204001 43
- 204000 30
- 200901 70
- mtp

Electronic ENDOFLATOR® with integrated SCB module
Mains Cord
Silicone Tube, sterilizable
Universal Wrench
SCB Connecting Cable
Sterile Filters, package of 10
THERMOFLATORTM

The high-flow insufflator from KARL STORZ can be used in the fields of laparoscopy, proctology and thoracoscopy.

Through combination with the new HICAP® trocar, the maximum flow of 30 l/min can be achieved easily even when an endoscope and instruments are used.

The CO₂ gas can be preheated accordingly using the OPTITHERM® heater in order to prevent patient hypothermia during longer interventions.

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**THERMOFLATORTM 264320 08-1**

Set consisting of:

- **264320 20-1** THERMOFLATORTM with integrated SCB module
- **400 A** Mains Cord
- **20 4000 43** Silicone Tube, sterilizable
- **20 4000 30** Universal Wrench
- **20 0901 70** SCB Connecting Cable
- **mtp** Sterile Filters, package of 10
- **20 4320 30** OPTITHERM® Gas Heating Element with connecting cord, autoclavable
The optimal combination for CO₂ insufflation in laparoscopy and proctology

The following combination is recommended for...

**High-flow CO₂ insufflation in laparoscopy**

- VERESS needle 26120 JL
- HICAP® trocar 30103 HA/HC/HP

**CO₂ insufflation in proctology**

- Video operation rectoscope 24941 T/TK, 24942 T/TK
The optimal combination for CO₂ insufflation in the field of gastroenterology and vascular surgery

The use of air as an insufflation gas in the field of gastrointestinal endoscopy is extremely common. According to numerous studies, however, there is a significant reduction in the amount and degree of post-intervention pain when CO₂ gas is used instead of air during an examination.

KARL STORZ now offers you the opportunity to connect all KARL STORZ videoscopes with working channel to the CO₂ insufflators in order to fully exploit the advantages of insufflation with CO₂ gas and, in turn, significantly enhance both patient satisfaction and comfort.

Due to its CF Classification the ENDOFLATOR can also be used in vascular surgery, for example in combination with a vein retractor for vessel harvesting.

The following combination is recommended for...

Electronic ENDOFLATOR® 26 4305 08-1

....CO₂ insufflation in gastroenterology

Video gastroscopes 138xx/139xx

13991 SIA Irrigation and insufflation adapter for connection to the working channel of flexible videoscopes with KARL STORZ irrigation and insufflation devices

Vein retractor 492015 FC
# Overview

**THERMOFLATOR®** and **Electronic ENDOFLATOR®**

<table>
<thead>
<tr>
<th>Feature</th>
<th>THERMOFLATOR®</th>
<th>Electronic ENDOFLATOR®</th>
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<tbody>
<tr>
<td>Article number</td>
<td>264320 20-1</td>
<td>264305 20-1</td>
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<tr>
<td>Set pressure</td>
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<td>0 – 30 mmHg</td>
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<tr>
<td>Gas flow</td>
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<td>0 – 20 l/min</td>
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<td>Med. CO₂</td>
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<tr>
<td>Connection option</td>
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<td>Central gas supply / cylinder</td>
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<tr>
<td>Modes</td>
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<td>intermittent flow</td>
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<td>Display</td>
<td>Digital and bargraph display</td>
<td>Digital and bargraph display</td>
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<tr>
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<td>SCB, SECUVENT® valve, VERESS mode</td>
<td>SCB, SECUVENT® valve</td>
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<td>Heater</td>
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<tr>
<td>Temperature</td>
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<tr>
<td>Dimensions in mm</td>
<td>305 × 155 × 233</td>
<td>305 × 155 × 233</td>
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Overview
Areas of application

<table>
<thead>
<tr>
<th></th>
<th>THERMOFLATOR® 26 4320 20-1</th>
<th>Electronic ENDOFLATOR® 26 4305 20-1</th>
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<tbody>
<tr>
<td>Laparoscopy</td>
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<td>Thoracoscopy</td>
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<td>Proctoscopy (TEO™)</td>
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<td>Endoscopy of the upper and lower gastrointestinal tract</td>
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<td>Endoscopic vein harvesting</td>
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<td>●</td>
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<tr>
<td>Open, endoscopically assisted cardiac surgery</td>
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<td>●</td>
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