**MEDICAL DEVICES**

### Autotransfusion Products

<table>
<thead>
<tr>
<th>Order-No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9025401</td>
<td>Fresenius C.A.T.S®™, 230V/50Hz</td>
</tr>
<tr>
<td>9025081</td>
<td>Fresenius C.A.T.S®™, 120V/60Hz (USA)</td>
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<tr>
<td>9029071</td>
<td>Vacuum pump Bora, 45 l/min, 230V/50Hz for C.A.T.S®™</td>
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<tr>
<td>9029081</td>
<td>Vacuum pump Bora, 45 l/min, 115V/60Hz (USA) for C.A.T.S®™</td>
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<tr>
<td>9050201</td>
<td>Vacuum regulator, Fina VAC 800, 1 each</td>
</tr>
<tr>
<td>9029161</td>
<td>USB-Mo.U.S.E data transfer to PC</td>
</tr>
<tr>
<td>9029151</td>
<td>USB-Mo.U.S.E data transfer to PC</td>
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<tr>
<td>9029061</td>
<td>Vacuum pump Bora, 45 l/min, 115V/60Hz (USA) for C.A.T.S®™</td>
</tr>
<tr>
<td>9029071</td>
<td>Vacuum pump Bora, 45 l/min, 230V/50Hz for C.A.T.S®™</td>
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### Technical information

**Wash Programs:**
- **RCC Flow**
- **High Quality Wash**: 20 – 40 ml/min
- **Low Volume Wash**: 25 ml/min
- **Quality Wash**: 20 – 45 ml/min
- **High Flow Wash**: 30 – 70 ml/min
- **Emergency Wash**: 15 – 150 ml/min

**Transfer Programs:**
- **Blood Flow**
- **Blood Transfer 190**: 190 ml/min
- **Blood Transfer 350**: 350 ml/min

**Delivery Flow Rates:**
- **Red Blood Cell Pump**: 0 – 350 ml/min
- **Blood Transfer 350**: 350 ml/min
- **Transfer Programs**: Blood Flow
- **Emergency Wash**: 50 – 100 ml/min
- **Low Volume Wash**: 25 ml/min
- **High Quality Wash**: 20 – 40 ml/min

### References


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C.A.T.S® plus is the only autotransfusion device on the market using continuous blood flow technique. The C.A.T.S® plus continuous flow concept is a patented technique for washing blood in various types of surgeries, which makes it possible to use one set only, for all applications independent of the bleeding volumes. More than 2 million patients have been treated with Fresenius C.A.T.S® devices.

- Ultrafast processing
- Complete fat elimination
- Consistently high haematocrit
- Lowest cell trauma
- Volume independent
- One set for all applications
- Low volume wash

Other application areas where C.A.T.S® is being used:

- Trauma
- Obstetrics
- Transplant
- Paediatrics
- Vascular surgery
**Washing Solution**
(e.g. normal saline)

**First Separation Phase**
- Initial separation stage
- Blood is concentrated to haematocrit of approx. 80%
- Most of the blood plasma, cellular debris, white blood cells, platelets, anticoagulant and other unwanted constituents are separated out
- Complete removal of non-emulsified fat

**Washing Phase:**
- Red blood cells are resuspended with saline
- Further removal of blood plasma

**Second Separation Phase**
- Final separation stage
- Red cells are packed to a haematocrit concentration of 60–65%
- Used saline is removed
- A camera (red cell sensor) is used for monitoring the red cell concentrate filling level

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*The chamber is depicted upside down for illustrative purposes.*
**C.A.T.S®plus** – the full range of benefits

- **Complete fat elimination**
  - The continuous washing process eliminates non-emulsified fat originating in bone marrow or subcutaneous tissue.

- **Plasma sequestration**
  - Fully automatic procedure for separating patient blood into packed red cells, platelet rich plasma and platelet poor plasma.

- **Ultrafast processing**
  - The emergency wash program produces up to 100 ml of packed red cells per minute (uninterrupted operation).

- **Easy and safe set up**
  - The easy, safe set up and automatic functions guarantee fast and safe handling, even in critical situations.

- **Consistently high haematocrit**
  - The innovative technology and resulting continuous process gives C.A.T.S®plus an edge on consistently providing autologous red cell concentrate with consistently high haematocrit.

- **Data transfer management**
  - C.A.T.S®plus optionally includes a dedicated bar code scanner and USB stick that can easily be used to transfer data to a computer or hospital management system.

- **One set for all applications**
  - The continuous process allows users to perform quantitative processing with no leftover blood – ideal for low volumes and paediatric use.