Advantages of CATS plus

- Consistent high hematocrit
  - independent from processing speed and type of surgery

- Fastest processing time
  - 100 ml Autologous PRC / min

- Complete elimination of non-emulsified fat
  - safety for the patient

- Lowest cell trauma
  - low g-forces and short processing time of red cells

- Volume independent
  - ideal for small blood volumes
  - no partial bowls, no leftover blood

- Plasma sequestration
  - fully automatic procedure to obtain autologous platelets

- Data transfer management
  - bar code scanner + USB-Mo.U.S.E

- Easy and safe set up
  - one set for all purposes
1st Separation Phase
• Initial separation stage
• Blood is concentrated to an hematocrit of approx. 80%
• Separation of the majority part of blood plasma, cellular debris, white blood cells, platelets, anticoagulant and other unwanted constituents
• Complete removal of non-emulsified fat

Washing Phase
• Here the red blood cells are resuspended with saline
• Further removal of blood plasma and other soluble components

CAISplus more
The contin...
than saving cells

Continuous washing process

2nd Separation Phase
- final separation stage
- Packed Red Cells – PRC – are concentrated to an hematocrit of > 50%.
- used saline is removed
- the PRC filling level is monitored by a camera (PRC sensor)
...only C.A.T.S delivers

A new performance standard

Need blood fast? C.A.T.S (Continuous AutoTransfusion System) sets a new performance standard! Fresenius has developed innovative technology that is revolutionizing autotransfusion.

Intraoperative autotransfusion has traditionally been accomplished utilizing bowl systems. Now, C.A.T.S allows you to set new standards for performance.

Advances in “washing chamber” technology are replacing batch processing in favor of continuous washing and processing.
- No stopping to fill or empty bowls
- Fastest processing time

Due to the volume independent blood processing the same set can be used in all applications from pediatrics to trauma.

3. Shulman G: Quality of processed blood for autotransfusion, JECT 2000, 32(11):1-9 (English)
## Technical Information

The Fresenius C.A.T.S offers three types of fully automated programs for washing, transferring blood and for Plasma Sequestration.

### Wash Programs: PRC 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**: 50 – 100 ml/min

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

### Plasma Sequestration (PSQ) Programs:
- **PSQ From Blood Bags**
- **PSQ Direct Draw**

### Delivery Flow Rates:
- **Red Blood Cell Pump**: 0 – 190 ml/min
- **Shed Blood Pump**: 0 – 350 ml/min
- **Washing Solution Pump**: 0 – 400 ml/min
- **Centrifuge Speed**: 1400 – 2400 RPM
- **Anticoagulant Removal**: > 95% (HQW)
- **Power Supply**: 230 V AC, +6 – 10%, 50 Hz / 120 V AC, +/- 10 %, 60 Hz
- **Operating Conditions**: 15°C – 27°C
- **Dataport**: RS 232, 2400 Baud

### Weight & Dimensions:
- **Cabinet**: 68 kg, (H x W x L) 51 cm x 42 cm x 70 cm
- **Cabinet with cart**: 96 kg, (H x W x L) 88 cm x 42 cm x 88 cm
- **Safety**: IEC 601-1-2, 0750-1/12.91, Class 1, CF, IPX1
- **EMC**: EN 60601-1-2 (IEC 601-1-2)
- **Immunity**:
  - Immunity to radiated RF electromagnetic fields according to EN 61000-6-2 and EN 61000-4-3 + A1
  - Immunity to electrical fast transients according to EN 61000-6-2 and EN 61000-4-4 + A1 + A2
  - Immunity to conducted disturbances induced by RF fields according to EN 61000-6-2 and EN 61000-4-6 + A1
  - Immunity to power frequency magnetic fields according to EN 61000-6-2 and EN 61000-4-8 + A1
  - Immunity to voltage dips and voltage interruption according to EN 61000-6-2 and EN 61000-4-11 + A1

### Autotransfusion Products

<table>
<thead>
<tr>
<th>Order-No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>9005401</td>
<td>Fresenius C.A.T.S&lt;sup&gt;plus&lt;/sup&gt;, 230V/50Hz</td>
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<tr>
<td>9005081</td>
<td>Fresenius C.A.T.S&lt;sup&gt;plus&lt;/sup&gt;, 120V/60Hz (USA)</td>
</tr>
</tbody>
</table>

- **9029151** USB-Mo.U.S.E data transfer of wash protocols to PC
- **9029161** Scanner f. C.A.T.S<sup>plus</sup> data entry for lot numbers and patient ID
- **9108411** ATH Collection Reservoir Holder, 1 each
- **9050011** Vacuum pump Bora, 45 l/min, 230V/50 Hz with pump holder f. C.A.T.S<sup>classic</sup>
- **9029071** Vacuum pump Bora, 45 l/min, 230V/50 Hz f. C.A.T.S<sup>plus</sup>
- **9028091** Vacuum pump Bora, 45 l/min, 115V/60Hz (USA) with pump holder f. C.A.T.S<sup>classic</sup>
- **9029061** Vacuum pump Bora, 45 l/min, 115V/60Hz (USA) f. C.A.T.S<sup>plus</sup>
- **9050021** Vacuumregulator, Fina VAC 800, 1 each
- **9005101** AT1 Autotransfusion set, 8/case
- **9108471** ATR 120 Collection Reservoir, 8/case
- **9108481** ATS Suction Line, 8/case
- **9108451** ATP Post OP Set, 8/case
- **9005141** PSQ Plasma Sequestration set, 16/case
- **9005151** PSQ-DD Plasma Sequestration Direct Draw set, 8/case
- **9005161** Reinfusion Bag with Y-adapter, 1000 ml, 20/case
- **9005201** Reinfusion Bag, 1000 ml, 20/case
- **9108401** ATY Y-adapter, 8/case
- **9006281** Waste bag, 10 liter, 5/case
- **9108551** ATV sterile vacuum line, 12/case