

The information included in this table has been supplied by the Manufacturers and is accurate at the time of publication

Section 1: Requirements					
	Fresenius CATS	Haemonetics 5/5+	Medtronic Autolog	Sorin BRAT	Sorin Electa
Click on the company title for a full technical specification					
Recommended anticoagulant (Name/volume/weight) & rate of administration	Heparin (30,000 IU / 1,000ml) ACD-A	Heparin (30,000 units / 1000mls) ACD	Clinician choice Heparin ACD	<ul style="list-style-type: none"> • 30,000 IU in 1 litre of normal saline (0.9 NaCl) • ACD-A • Std. flow-rate 1 drop/min (to be adjusted according to the bleeding) 	<ul style="list-style-type: none"> • 30,000 IU in 1 litre of normal saline (0.9% NaCl) • ACD-A (1:7, ACD-A:Blood) • Std. flow-rate 1 drop/sec (to be adjusted according to the ongoing bleeding)
Speed of processing (ml/min):	Standard: 35ml Processed Red Cells continuously produced at 35ml per minute without interruptions	Standard: 300-500mls /minute	Standard: 135ml Red Blood Cells approximately 3 minutes or 1500ml initial blood volume will be fully processed in less than 15 minutes	Standard Prog. for 250 ml bowl <ul style="list-style-type: none"> • Prime 400 ml/min • Wash 800 ml/min – 1000 ml • Empty 600 ml/min Parameters can be adjusted anytime	Optimized Prog.(Popt) for 225 ml bowl <ul style="list-style-type: none"> • Prime 400/300ml/min • Wash 500 ml/min – 1000 ml • Empty 400 ml/min Parameters can be adjusted anytime
	Emergency (fastest): 100ml Processed Red Cells continuously produced at 100ml per minute without interruptions	Emergency (fastest): 1000 mls/min	Emergency (fastest): 2 minutes / cycle	Emergency parameter recommended for 250ml bowl <ul style="list-style-type: none"> • Prime up to 1300 ml/min • Wash up to 1300 ml/min • Empty up to 1300 ml/min Parameters can be manually adjusted anytime	Emergency Prog. (Purg) for 225 ml bowl <ul style="list-style-type: none"> • Prime 400ml/min • Wash 800 ml/min – 1000 ml • Empty 300 Parameters can be manually adjusted anytime

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	Fresenius CATS	Haemonetics 5/5+	Medtronic Autolog	Sorin BRAT	Sorin Electa
Minimum process volume (ml)	15 to 30ml	None –manual process Automatic setting machine defaults to a reservoir volume of 200-800 mls dependant on bowl size.	Depends on incoming Hct of the blood Assuming an incoming Hct of e.g. 25% this would infer a minimum process volume of 550mls-600mls	The filling of 135ml bowl requires approx 400ml of salvaged RBC	The filling of 55ml bowl requires approx. 35ml of salvaged RBC
Standard wash volume (ml saline/ml blood)	Ratio ranges from 7:1 to 1:1 dependant on which wash programme is selected	1000mls Safety feature of CS5+ will not allow reduction of saline wash until process established	250mls	135 = 700ml 135 = 1500ml (ortho protocol) 250 = 1000ml Wash volume can be manually adjusted anytime	Max wash volume variable according to the bowl and the program used. Using Popt: 55=300ml, 125=900ml, 175=1000ml, 225=1000ml Wash volume can be manually adjusted anytime

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	Fresenius CATS	Haemonetics 5/5+	Medtronic Autolog	Sorin BRAT	Sorin Electa
Average Hct of product	Constant 65%	55%	45-70% Hct Range	Std protocol 59.7% ± 6.8 Lo Vol protocol 57.4±1.9	55 - 65%
Standard washing efficiency (% clearance of anticoagulant + evidence)	95%	98%	99% +/- 0.2	>95%	98,5 - 99,5% Heparin elimination (Ref. Hansen E., NATA 2007 presentation)
Integral vacuum pump	Yes	No Smart Suction Harmony availability for all machines.	Yes	Yes Adjustable range: 50-300 mmHg (increment of 25 mmHg)	Yes Adjustable range: 0-300 mmHg (increment of 10 or 50 mmHg) Booster function for emergency
Automatic recognition of bowl size	Not applicable	Yes	1 size bowl	No	Yes Optical digital bar code sensor
Data management system	Yes	Yes	No	Yes <ul style="list-style-type: none"> • Printer available • PC Download using the integral RS232 serial port 	Yes <ul style="list-style-type: none"> • Printer available • USB/Smart Card • PC Download using the integral RS232 serial port

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	Fresenius CATS	Haemonetics 5/5+	Medtronic Autolog	Sorin BRAT	Sorin Electa
Clinical use	Recommended for: Cardiac / Vascular, Orthopaedic, Transplant and other cases where blood can be salvaged for processing and reinfusion	Recommended for: All surgical procedures when blood loss is anticipated (and a transfusion may be necessary).	Recommended for: General; Cardiovascular; Orthopaedic; Vascular; Plastic/Reconstructive; Obstetric/Gynecologic; Neurosurgical; Postoperative treatment areas	Indications for use: • Preoperative sequestration • Intraoperative blood salvage • Postoperative blood salvage	Indications for use: • Preoperative sequestration • Intraoperative blood salvage • Postoperative blood salvage
Clinical use continued	Caution in: Relative contraindication in sepsis, malignancy, presence of amniotic fluid. Also if contaminated with agents not suitable for reinfusion.	Caution in: Obstetrics, Malignancy, Bowel, Refer to Contraindication Table.	Caution in: Caesarean Sections – refer to NICE guidelines See AABB standards for Contraindications e.g. Cancer; Gross contamination; using haemostatic agents.	The use of blood processed by the device may be contraindicated under some circumstances (see American Association of Blood Banks. <i>Standards for Blood Banks and Transfusion Services</i> . 18th ed. Bethesda, MD: American Association of Blood Banks, 1996:L2.600 & J8 300). The responsibility for the use of the device in all cases belongs solely to the physician in charge.	The use of blood processed by the device may be contraindicated under some circumstances (see American Association of Blood Banks. <i>Standards for Blood Banks and Transfusion Services</i> . 18th ed. Bethesda, MD: American Association of Blood Banks, 1996:L2.600 & J8 300). The responsibility for the use of the device in all cases belongs solely to the physician in charge.

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Section 2: Disposables					
	Fresenius CATS	Haemonetics	Medtronic Autolog	Sorin BRAT	Sorin Electa
Basic components: Method of Sterilisation Shelf life	Ethylene Oxide 3 years	Ethylene dioxide 5 years	Ethylene Oxide 3 years	Reservoir, Vacuum Line, Aspiration & Anticoagulation Line, Processing set with bowl, Waste Bag, Connection adapter set Ethylene Oxide 3 years	Reservoir, Vacuum Line, Aspiration & Anticoagulation Line, Processing set with bowl, Waste Bag, Connection adapter set Ethylene Oxide 3 years
Available via central purchasing authorities	No	Direct sales only	Yes NHS Logistics, NHS Supply Chain,	Welsh Health Supplies	Welsh Health Supplies & NHS Logistics
Suction assembly: packaged separately: Minimum purchase (units per case)	Yes 8	Yes 20 units /case	Yes – BT725 Suction Anticoagulant line and BT133 vacuum line. Minimum purchase = 10 units per box.	Yes Min Qty 12	Yes Min Qty 10
Reservoir: volume (ml) filter pore size (µm) packaged separately: Min purchase (units per case)	3 Litres 120µm or 40µm Yes 8	3000mls 150 microns Yes 4	Yes - EL240 4000ml Reservoir; 40 micron screen (20 micron also available) Minimum purchase = 6 units per box	<ul style="list-style-type: none"> • 2 different reservoir available: 30 µm Filtered Reservoir & 120 µm Gross Filtered Reservoir • 3 litre volume • 12 unit per case 	<ul style="list-style-type: none"> • 1 reservoir available: 40 µm Filtered Reservoir • 4 litre volume • 6 units per case

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	Fresenius CATS	Haemonetics	Medtronic Autolog	Sorin BRAT	Sorin Electa
Processing set: Bowl/Belt: standard bowl size packaged separately: Min. purchase (units per case)	One standard size washing chamber Yes 8	Bowl 225mls Yes 8	Yes – ATL2001 Wash Set (including bowl; waste bag; holding bag) Minimum purchase 6 units per box	Two configurations available: 1. Procedure Set including Centrifuge Bowl Set & Blood Collection Reservoir 2. Centrifuge Bowl Set & Blood Collection Reservoir available separately • 2 Bowl size available: 135, 250 ml 2 complete 4 separate	Two configurations available: 1. Complete Set including Wash Set & Collection Set – 3 pcs per case 2. Wash Set & Collection Set available separately – 6 pcs per case • 4 Bowl size available: 55, 125, 175, 225 ml - 10 pcs per case
Other components available: Varied bowl sizes	Not applicable – one processing set for all volume requirements	Yes 125 ml and 70ml	None	• Disposable accessories available: Reservoirs, Collection Sets, Aspiration & Anticoagulation Line • 2 Bowl size available: 135, 250 ml	• Disposable accessories available: Reservoirs, Collection Sets, Fluid Collection bags, Irradiation Kit (for Tumour Surgery), Microaggregate filters • Disposables for pre- operative sequestration • 4 Bowl size 55, 125, 175, 225
ACD-A solution shelf-life: Minimum purchase (units per case):	Not available	Yes 2 years 10	Not available	Not available	Not available
Additional reinfusion bags Minimum purchase (units per case):	Yes 20	Yes 40	Yes 24	Yes 10	Yes 50

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	Fresenius CATS	Haemonetics	Medtronic Autolog	Sorin BRAT	Sorin Electa
Y-connectors Minimum purchase (units per case):	Yes 8	Yes 6	Yes 20	Yes 10	Yes Available in the connection adapter set (Cardio Set) 5
QC sampling kit Minimum purchase (units per case):	No	No	BT926 Y Connector (20 units per case) BT945 Transfer Spike (20 units per case)	Yes 25	Yes 25 -
Other (specify): Minimum purchase (units per case):	Post Op Set 8	Waste Bags 10	Waste Bags 10	<ul style="list-style-type: none"> • Hematocrit sensor (Crit-Line) available separately 	<ul style="list-style-type: none"> • Microaggregate filters 20-40 µm Box 25 • Printer rolls • activAT System: to produce autologous thrombin serum • Whole blood separation system for platelet gel production

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Section 3: Customer Service					
	Fresenius CATS	Haemonetics	Medtronic Autolog	Sorin BRAT	Sorin Electa
Machine purchase options: lease purchase available(please describe)	Yes Contact Fresenius Kabi for details	<ul style="list-style-type: none"> • Capital sale • Rental • Use Plan 	<ul style="list-style-type: none"> • Capital sale • Lease • Use Plan 	Use plan	Use plan
Machine trials:	Yes Please contact Fresenius Kabi for details	As per requirement of the Trust and agreed between Haemonetics and relevant hospital management	Available for trial/evaluation. A machine will be left on loan for the trial period agreed by both parties. Each trial/evaluation is tailored to meet the customer needs whenever possible.	To suit Trust evaluation but typically 2 demonstration cases	To suit Trust evaluation but typically 2 demonstration cases
Helpline access/prompt response	Yes Telephone: 0845 054 0612	Office hours for Customer Service queries. Technical and sales support extended to outside office hours	Response time to first call = 2 hours. Product specialist Service engineer Customer Services	Contact sales rep / office for out of hours call 08702 385460	Contact sales rep / office for out of hours call 08702 385460
Training & educational support	On site and off site options available	Training support provided to hospital as per contract agreement and dependant on needs of that Trust/department	Product Specialist to train the key users on the operation of the Medtronic Autolog Machine to fulfil the National Competency Agreement Framework. Quick reference guides available for ease of set up. Clinical paper support (if required) to help Trust generate protocols.	On site training and support in line with National guidelines Off site training can be arranged	On site training and support in line with National guidelines Off site training can be arranged

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	Fresenius CATS	Haemonetics 5/5+	Medtronic Autolog	Sorin BRAT	Sorin Electa
Maintenance contracts	Please contact Gamidor Technical Services on 0845 054 0616	Level 1- 48 hour, replacement of all parts, annual service Level 2- annual service, 48 hour call out, parts paid by customer Level 3- annual service, all other costs chargeable	Comprehensive Warranty Plan (fully comprehensive) Planned Preventative Maintenance (one-off service) In-House maintenance options available on request.	A full range of options are available normally customers require either Fully comprehensive or a Part extra contract	A full range of options are available normally customers require either Fully comprehensive or a Part extra contract
How many UK based engineers do you have?	Nine	These are dedicated to Cell Saver / hospital Service and call outs only and not other medical devices	One	Four	Four
What is your average response time to call outs?	24-48 Hours	48 hours	2-72hours	Telephone response within 2hrs. Engineer within 48hrs on site. Service Loan machine supplied if required.	Telephone response within 2hrs. Engineer within 48hrs on site. Service Loan machine supplied if required.
Are software upgrades freely available?	Yes	Yes	Yes	Safety upgrades are free. upgrades are free to customers with service contracts and are made at time of service	Safety upgrades are free. upgrades are free to customers with service contracts and are made at time of service
Can disposables be ordered by a call-off order?	Yes	Yes	Yes	Yes	Yes

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How quickly can disposables be shipped?	Next day	Same day Mostly overnight but within 48 hours to UK customers. Uk warehouse based in Banbury, Oxford.	Normal delivery is 2-3 days. Emergency next day delivery available	Next day delivery	Next day delivery
Do you provide a cell salvage service for one-off cases?	No	Our preference is to utilise a Cell Salvage Service provider for all one off cases as they have more flexibility	No	Yes	Yes