

The HAEMONETICS® MCS®+ 8150: A Brief Overview For Supervisors and Recruiters



Automated Red Cell Collections

Collections supervisors and donor recruiters play a crucial role in the success of an automated red cell program. As you assume this responsibility, you may have some questions and concerns about automated collections and your role in the program. This brochure will provide the information you need to fully understand the workings of the Haemonetics MCS+ 8150, donor eligibility requirements, and how donor groups should be introduced to



automated red cell collections.

There's no denying that the addition of automated collections adds a degree of complexity to your program. The good news, however, is that once the automated collections plan is implemented, the changes to your daily routine will be minimal. This brochure is designed to help minimize disruption during implementation and ensure the smooth addition of automated technology to your Blood Center.

What's inside:

- Who's eligible to donate?
- Safety Information
- How the MCS+ works
- Process Validation
- Daily QC
- Preventative Maintenance
- Haemonetics Customer Care Center
- Product Quality
- Donor Conversion

Basic Machine Information

The 'MCS' in the MCS+ 8150 name stands for Mobile Collection System. The machine was designed to be used in either a



fixed site or mobile collection setting. The machine weighs 56 pounds and when open, stands 26.5 inches high by 21.5

inches wide by 21.5 inches deep. When in use, the machine should be situated so that the pumps are roughly the same level as the donor's heart. This ensures that the pumps work at their maximum efficiency.

The MCS+ does not require a dedicated circuit and can share an outlet with another piece of equipment. If you experience frequent power outages or surges, you may want to consider

the use of a surge protector.

You will find that automated red cell donors will be your best recruiters. For this reason, it's recommended that you place your machines in or near your Whole Blood (WB) collection area. This gives WB donors exposure to automated collections, resulting in new automated RBC donors.



Produced by:

Haemonetics
400 Wood Road
Braintree, MA 02184

***Advancing
technology to
meet patient
transfusion
needs.***

Who is eligible to donate?

There are two basic protocols available on the MCS+. An RBCP protocol collects one RBC unit and a plasma unit. The second protocol collects two units of RBC's and is called the 2RBC or double red cell protocol.



The 2RBC protocol, at the setting of 200 mls per unit, collects a total blood volume of approximately 466 mls (400 mls of RBCs plus 66 mls of plasma). You'll notice that this is less volume than you collect from a WB donor in a 500 mls bag

Since we are collecting a higher percentage of red cells, there are specific eligibility standards for 2RBC donors. The eligibility requirements include height, weight, and hematocrit. In order to donate the donor must meet all three requirements: height, weight, and hematocrit.

The hematocrit requirement is the same for all donors. The height and weight requirements differ for men and women. The minimum requirements are:

2RBC Eligibility Requirements		
	Male	Female
Height	5'1"	5'5"
Weight	150	175
Hematocrit	40%	40%

Safety Information.....

This section is designed to answer procedure safety questions you, your staff, and your donors may have. More detailed information and references are available on request.

Question 1: *Compared to WB donation, what is the relative safety of automated RBC procedures?*

Response: Compared to WB donation the relative safety of automated RBC procedures is equivalent to or safer than the WB procedure. Based on published data, as well as empirical observations, the number of moderate and severe reactions is lower in automated RBC procedures.

Question 2: *Compared to WB donation, what exercise levels can automated donors tolerate, especially 2RBC donors?*

Response: There is no difference in exercise tolerance to 2RBC donation compared to WB donation.



Changes in heart rate and blood pressure are no different in donors giving two units of red cells versus those giving one unit of red cells (RBCP and WB). High levels of aerobic activities (those exercises that achieve a maximum heart rate) are not recommended for either 2RBC, RBCP or WB donors on the day of donation (post-donation).

Question 3: *Do donors giving 2RBC risk becoming iron deficient?*

Response: Years of experience with blood donations have shown that blood donors in general do not become iron deficient. 2RBC donors have no greater risk of iron deficiency, because the waiting period between 2-unit RBC donations is twice as long as the waiting period between 1-unit donations.

Question 4: *Aren't reactions more frequent with 2RBC donations?*

Response: Several years of experience have shown that the reaction rates are the same or lower than those for WB donors, even in first time donors. Recent studies have shown that the moderate to severe reaction rate is significantly lower.

For the complete 2RBC Safety Information Packet, contact your Haemonetics Account Manager.

How the MCS+ LN8150 Works

The MCS+ was designed to be easy to use. The basic collection process is simple:

- A single-use, sterile disposable set is loaded on the MCS+. This takes an experienced operator less than 5 minutes. Bags of anticoagulant, additive solution, and saline are attached to the collection set.

- When the operator is ready for a donor, the Prime process is started. At the end of Prime, which takes about four minutes (90 seconds for the filtered 2RBC protocol), the MCS+ is ready for collection.

- A single 17 gauge needle is placed in the donor's arm. This needle is smaller than the 16 gauge needle used for WB collections.

- Whole blood is collected and mixed with anticoagulant to prevent clotting.

- A series of pumps move the anticoagulated whole blood into a spinning centrifuge bowl. The donor's blood remains inside a sterile collection set and never comes in contact with any machine part.

- The heavier red cells move to the outside of the spinning centrifuge bowl and the plasma is concentrated at the center of the bowl.

- When the bowl is full, plasma starts to exit from the outlet side of the bowl into a plasma bag.

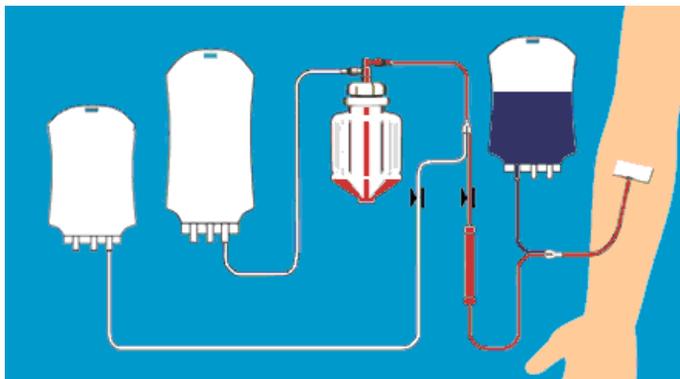
- Plasma is removed until the bowl is filled with red cells suspended in a very small amount of plasma. Red cells start to exit the bowl.

- A line sensor detects the presence of red cells and automatically stops the Draw cycle.

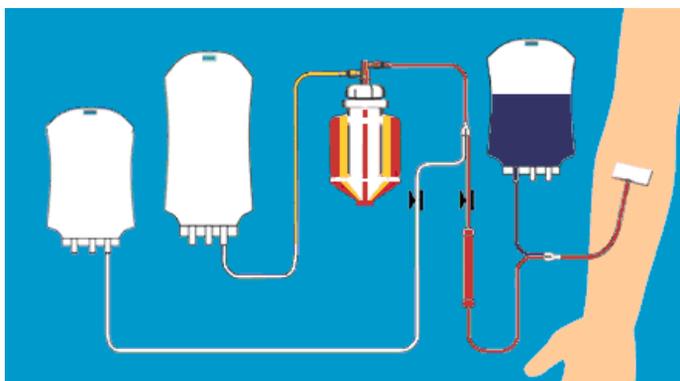
- Saline is returned to the donor to keep them hydrated and to clear the needle line to prevent clotting.

- In the 2RBC procedure, the RBCs are transferred to a product bag. The collected plasma and more saline is returned to the donor. The collection process is repeated to collect a second unit of red cells. The procedure takes about 35 to 45 minutes.

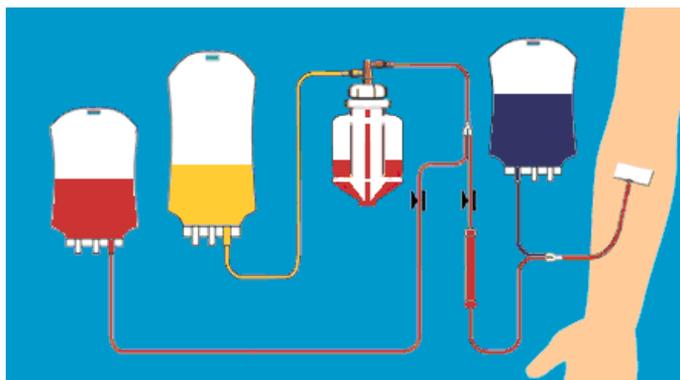
- In the RBCP procedure, some or all of the red cells are returned to the donor after the first cycle and then, more whole blood is collected and separated. When the desired amount of plasma has been collected, the red cells are transferred to a product bag. The donor is given some saline and the procedure ends. The entire collection takes about 30 minutes.



1. Whole blood is collected from a healthy donor.



2. Whole blood is separated into its components.



3. Red blood cells are collected.

Process Validation

Just like all new blood center processes, automated red cell collections using the MCS+ 8150 must be validated. Haemonetics has supplied a sample validation protocol to your Blood Center.

Blood Center personnel will determine the final validation requirements. The validation process usually includes a brief check of the machine to ensure that all parts are functioning as

expected and the quality control testing of a specific number of products. Your manager can provide more complete information about the validation requirements.

Daily QC

Two checks are run on the MCS+ each day of use. The first check is automatically performed when you power on the machine. As a series of system checks are run, the MCS+ places a 'P' for 'Pass' on the display screen as each test is

completed successfully. Should the MCS+ fail a test, an 'F' for 'Fail' will be displayed.

The second daily check tests the weigher arm. In this test, a calibrated weight is placed on the

the weigher arm and the weight (in grams) is displayed on the screen. The displayed weight must be within the range your center has selected.

Preventative Maintenance

The MCS+ Operator's Manual includes a recommended cleaning and maintenance schedule. Your blood center will determine the appropriate

schedule and each operator will be trained to perform each suggested maintenance item. An annual preventative maintenance check performed by a

Haemonetics Field Service Engineer is also recommended and can be scheduled through the Customer Service Line.

Haemonetics Customer Care Center

As we mentioned earlier, the MCS+ is simple and easy to operate and is designed to provide dependable, reliable service. If the disposable set is loaded correctly and a good phlebotomy is performed, procedural problems are minimal. Because the donor is given saline during the procedure, fewer moderate to severe donor reactions are seen than with Whole Blood.

Even so, at some point the operator will experience problems with a procedure or with the MCS+. Each operator will be trained to handle common troubleshooting situations. When a problem is encountered during a procedure, the MCS+ notifies the operator by an audible alarm. This alarm can be silenced by pressing the 'MUTE' button on the display panel. The MCS+ will also display

a message indicating the type of problems and suggestions for resolution. The Operator's Manual includes a section describing each message and how to resolve it.

Should you need additional help during a procedure, Haemonetics provides technical support Monday through Friday, 7:30 AM till 8:30 PM (EST). After-hours coverage is available via an answering service. The service will typically connect you with the after-hours support person within a few minutes. The Customer Care Center can be reached by calling 1-800-537-2802. By selecting the Clinical Support option from the menu, you will be connected with someone who can help resolve procedural problems. When you call, you'll be asked for the machine's serial number (located on the back panel of the MCS+), the type of procedure being run and any

messages that the MCS+ has displayed. Haemonetics supplies stickers with the Customer Care Center number. These can be placed in a readily accessible place (many centers place them on the machine screen for easy access).

The Customer Care Center provides other services as well. Different options will allow you to request machine repair by a Field Service Engineer or order disposable collection sets. The status of a disposable order can also be checked using this option. This number will also allow you to report a product complaint by connecting you to the Complaint Handling Department. Minor disposable problems can also be reported using the Quality Card included in each collection set.

Product Quality

The MCS+ produces red cell and plasma products of the highest quality. During training, the operator will learn the proper collection technique to ensure the collection of products that meet or exceed your QC standards. As a supervisor, there are several things you should monitor:

- Good phlebotomy technique is key.
- The donor draw speed should remain at 70 mls/minute unless slowed due to flow issues.
- The machine should be placed such that the pumps are at approximately the same height as the donor's heart.
- The MCS+ should be situated so that the RBC product bags hang

freely and undisturbed from the weigher arm during collection.



- Once the RBC unit has been collected, the tubing should be stripped and mixed according to your BSD's. If samples are to be

collected for QC testing, it is imperative that the unit be mixed for the proper amount of time.

- If the MCS+ displays a 'QC' message at the end of the procedure, the RBC product should be clearly marked. This will keep units collected during incomplete procedures from being included in monthly QC.
- Any flow problems, machine alarms, or procedural problems should be documented on the donor record. This will allow proper documentation in the event a unit fails quality control testing.

Donor Conversion Training

Now that you have your machines placed, your BSD's written, and your staff trained, your program needs donors to be successful. Each operator will be trained in a technique called Donor Conversion. This is a simple way to educate donors about automated red cell donations and an effective way to ask them to participate in the program.

Not all donors will say yes right away, so the training also discusses donor 'concerns' and how to handle them. Donor conversion should take about two minutes and should ideally be done by the receptionist or in the screening booth to make sure that all eligible donors are asked about participating in automated red cell collections. Here's how it works:

- Review the donor record to see if the donor meets the weight requirement. The donor's blood type is also reviewed to make sure it's one of the types you're targeting for automated red cell collections.

• Discuss his/her blood type with the donor. This educates the donor about why their RBCs are needed and how they help area patients. This helps to build rapport with the donor and to emphasize their importance to area patients.

- Introduce automated red cell donations.
- Give three benefits of automated RBC donation. These benefits include:

- Smaller needle
- Saline replacement
- Less trips to Blood Center
- Less paperwork
- Fewer needle sticks
- Fewer telemarketing calls

• Ask the donor to participate in the automated program.

• Provide any additional information the donor requests or counter any concerns. For

example, if a donor says "I'm afraid of getting a disease from the machine", explain to the donor that their blood is always kept within a sterile disposable set. The set is opened only when needed, used once, and then thrown away.

• After providing the needed information, ask the donor if they would like to donate an automated red cell product.

• If the donor is still unsure after you have provided more information three times, continue with the donor's originally scheduled donation (for example, WB).

• Place the donor, if possible, near another automated RBC donor to give them more exposure to the process.

• Touch base with the donor after donation to see if they are interested in an automated donation next time.