

# PROCEDURE

**Title:** MTS Tipmaster Maintenance and Dispenser Maintenance

**Procedure #:** 2015BLOODBANK64

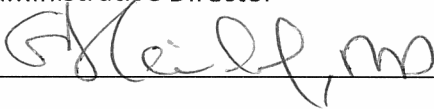
Institution: Highlands Regional Medical Center

Address: 3600 Highlands Avenue, Sebring Florida 33870

Prepared by: Anita Smith

Date: 6/5/2015

Title: Laboratory Administrative Director

Accepted by:  Date: 6-5-15

Title: Laboratory Medical Director

Date Patient Testing Implemented: 11/1/2008

Review of procedure every two years

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

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Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

Discontinued testing date: \_\_\_\_\_



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Policy Name: Tipmaster Procedure

Department: Blood Bank-Lab

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**PURPOSE:**

To ensure tipmaster is operated as manufacturer intended.

**POLICY:**

It is the policy of Highlands Regional Medical Center to perform operation and maintenance of tipmaster in accordance with manufacturer's directions.

**PROCEDURE:**

1. Set the intended volume by turning the volume selector.
2. Push the filling lever down to the first stop.
3. Attach a pipette tip firmly to the instruments.
4. Immerse the tip approximately 3mm into the sample solution.
5. Pull up on the filling lever to its uppermost position to fill the tip with solution.
6. Withdraw the tip from the sample solution. **Do not wipe the tip.**
7. To dispense, press the Dispense Knob down until it stops.
8. **Caution:** Dispense the first delivery of sample solution back into its reservoir or waster in order to prime the tip properly and to reach maximum accuracy.
9. **Press the dispense knob down.** This operation dispenses the preselected volume of sample.

**CLEANING TIPMASTER:**

Recommended every 5000 to 10000 dispenses (about every 2 months at HRMC) or when contaminated.

1. Unscrew the barrel assembly at the black cylinder (see **diagram in package insert**) from the handle by turning the black cylinder clockwise.
2. Carefully pull the barrel assembly away from the handle.
3. Check the inside of the barrel assembly for debris or residue. Use cleaning wire to remove debris.

**REPLACING OF RINGS**

Recommended every 35000 to 40000 dispenses (about 1 year at HRMC)

1. Follow 1 – 3 above.
2. Slide the white plastic piston off of the stainless steel plunger. The piston holds one O ring on each end (see **diagram in package insert**) at the top is a lip. This identifies the top (lip) and the bottom (no lip) of the piston.
3. Slide the O ring retainer off of the stainless steel plunger.
4. Remove both O rings from piston using the cleaning wire
5. Place a new O ring into the recess of each end of the piston.
6. Place the piston not the black cylinder bottom end first.
7. Replace O ring retainer onto the black cylinder and over the piston by sliding the guideposts through the three holes in the O ring retainer. The three raised pegs on the O ring retainer are to be facing down when placing onto the black cylinder.
8. Apply a small amount of silicon grease to the stainless steel plunger; use the cleaning wire to apply the grease.
9. Attach entire barrel assembly back onto the handle by sliding the stainless steel plunger through the O ring retainer and through both O rings inside the piston



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10. Screw the barrel Assembly onto the handle to tighten
11. After the above maintenance perform a quality check (see package insert that follows)

**PROCEDURE NOTES:**

Refer to Tipmaster insert for diagrams and troubleshooting information.

**REFERENCES:**

ID-Tipmaster repetitive dispense pipetor insert PK No. 147-C Rev. Date 7/28/2004



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**Policy Name:** MTS Dispenser

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**PURPOSE:**

The MTS dispenser is a manually operated dual action repeating dispenser intended to aspirate and dispense pre-determined volumes of liquid utilizing a positive displacement spring loaded plunger with a dual routing valve system.

**POLICY:**

MTS dispenser is used to dispense specific volume (0.5ml and 1.0ml  $\pm 5\%$ ). A calibration check should be done as part of daily quality control schedule and after each repair.

**PROCEDURE:**

1. All dispensers are shipped set at the proper dispense volume (0.5ml and 1.0 ml)
2. For the highest precision in dispensing, the plunger button should be operated with consistent strokes. Avoid allowing the button to “snap” back.
3. Before using prime the dispenser by flushing fresh diluent a minimum of one time into a waste receptacle.

**CALIBRATION CHECK:**

1. Dispense fluid 10 times into a clean, dry 10.0 ml graduated cylinder.
2. Record volume.

Acceptable:	Model 9610	4.75 – 5.25 ml
	Model 9612	9.50 – 10.50 ml

3. NOTE: Calibration of the MTS dispenser is set by the manufacturer and cannot be adjusted. If the dispenser does not meet the required criteria during calibration check, contact Ortho.

**CLEANING:**

1. Remove dispenser from diluent bottle. Dispense fluid from outlet line until it is empty.
2. Rinse and decant the inside of the cap with 70% isopropyl alcohol.
3. Rinse and decant the inside of the cap with deionized or distilled water.
4. Aspirate with 70% isopropyl alcohol a minimum of 15 times through the dispenser into the waste receptacle.
5. Remove dispenser from the 70% alcohol solution.
6. Dispense the remaining alcohol solution in the outlet line until empty.



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7. Wipe the inlet tubing with soft cloth so as not to contaminate the deionized or distilled water with the alcohol solution.
8. Flush the dispenser with the deionized or distilled water a minimum of 20 times into the waste receptacle.
9. Remove the dispenser from the water and empty the outlet line.
10. Wipe dry the inlet tubing and outer dispenser surface with a soft clean cloth.
11. Prime the line a minimum of one time with the appropriate diluent before using.

**PROCEDURE NOTES:**

1. To prevent reagent contamination, do not use dispenser for reagent recirculation.
2. The removable filter should remain in the Recirculation Port (see diagram).
3. The use of sodium hypochlorite should be avoided as the S antigen is sensitive to trace amounts of chlorine.
4. In case of malfunction, immediately stop dispensing. Clean the dispenser according to the above procedure.
5. Pipette malfunction can cause errors most commonly by bent or corroded plungers, leaking seals or damaged plastic housing or tubing.

**REFERENCES:**

Rygiel, S.A. et al. (1985) *Transfusion* 25,274-277.

**CATALOG NUMBER:**

MTS9610     0.5 ML  
MTS9612     1.0 ML

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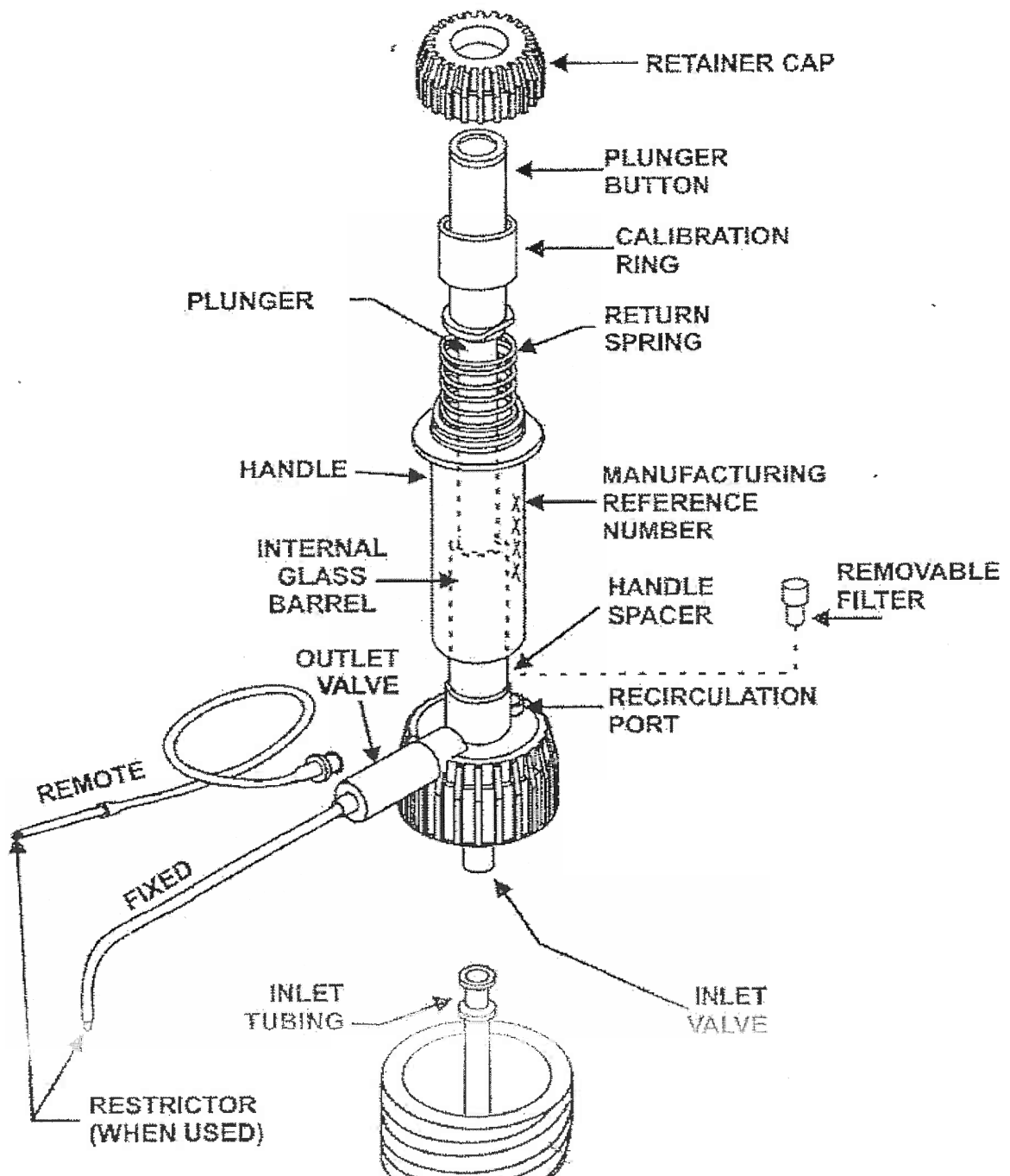
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Figure 1





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Reviewed by	Reviewed Date	Reviewed by	Reviewed Date
<i>[Signature]</i>	5-28-15		
<i>[Signature]</i>	5-29-15		

Initial Implementation Date: \_\_\_\_\_

Reviewed by: *Christal Pindal* Date: 2-3-14  
Department Supervisor

Reviewed by: *Angela Lanster* Date: 2/25/14  
Department Adm. Director

Reviewed by: *NA* Date: \_\_\_\_\_  
Department Chief Technologist

Reviewed and Approved by: *[Signature]* Date: 3/10/14  
Department Medical Director



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<i>[Signature]</i>	8-6-14		
<i>[Signature]</i>	5-28-15		
<i>[Signature]</i>	5-29-15		

Initial Implementation Date: \_\_\_\_\_

Taken out of Service: \_\_\_\_\_

Reason: \_\_\_\_\_

Reviewed by: *Bowen* Date: 7/10/13

Department Supervisor

Reviewed by: *Angela Lanster* Date: 7/8/13

Department Adm. Director

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_  
Department Chief Technologist

Reviewed and Approved by: *[Signature]* Date: 7/8/13  
Department Medical Director