

MADM™

DEPOT MAINTENANCE AND REPAIR TRAINING GUIDE



Learning Objectives

This training guide familiarizes maintainers with the requirements needed for maintenance and repair of the MADM™ device.

Overview

This Depot Maintenance and Repair Training Guide is a reference tool with a knowledge checklist for maintaining and repairing your MADM™ device when it has been returned to a depot.

The following topics are covered in this training guide:

SECTION ONE: Maintenance

SECTION TWO: Repair Procedures

SECTION THREE: Removal and Reinstallation Procedures

SECTION FOUR: Firmware Updating

SECTION FIVE: Troubleshooting Guide

Getting Started

1. To work through this Maintenance Training Guide you will need to download the following:



[MADM™ Periodic Maintenance Video](https://www.youtube.com/watch?v=bgG4OGWEghc)

<https://www.youtube.com/watch?v=bgG4OGWEghc>



[MADM™ Maintenance Video](https://www.youtube.com/watch?v=71neNmeOYWg)

<https://www.youtube.com/watch?v=71neNmeOYWg>

2. A copy of the MADM™ Service Manual is also required and can be requested on the Customer Care web page:



[MADM™ Service Manual](http://www.thornhillmedical.com/customercare)

www.thornhillmedical.com/customercare

The checklist overleaf will guide you through the relevant maintenance and system test areas of the MADM™ device. Once you have reviewed the relevant sections, mark each as complete on the checklist. Review each section as frequently as needed to ensure you are comfortable with the process steps required for each knowledge area.

You're Ready to Go!

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KNOWLEDGE CHECKLIST

MADM™ KNOWLEDGE CHECKLIST			
Trainee Name:		Date:	
Section One			
Periodic Maintenance			
	See Service Manual Section	View MADM™ Periodic Maintenance Video	Complete
System Cleaning	5.1	N/A	
Periodic Maintenance Schedule	5.2	N/A	
Cleaning of the anesthetic cartridge fitting	6.20	@ [0:12]	
Replacement of the purged anesthetic container	6.7	@ [2:14]	
Cleaning of the heater	6.23	@ [3:05]	
Functional Testing	8.3	MADM™ Maintenance Video	
Section Two			
Repair Procedures			
	See Service Manual Section		Complete
Ordering Kits	6.1		
Tool Kit	6.2		
Electrostatic Discharge Requirements	6.3		
Maintenance Procedures Sections	6.4		
Section Three			
Removal and Reinstallation Procedures			
	See Service Manual Section		Complete
Mouth Anesthetic Sensor	6.5		
Protective Caps	6.6		
Anesthetic Dial	6.8		
Front Enclosure	6.9		
I/O PCA	6.10		
Display Assembly	6.11		
UI PCA	6.12		
LCD	6.13		
Controller PCA	6.14		
Power PCA	6.15		
Input Anesthetic Sensor	6.16		

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KNOWLEDGE CHECKLIST

Section Three (Cont.)		
Removal and Reinstallation Procedures		
	See Service Manual Section	Complete
Manifold and Mixer Assembly	6.17	
Flow Sensor	6.18	
Anesthetic Pump	6.19	
Air Pump and Valves	6.21	
Manifold Chassis	6.22	
Heater	6.23	
Cooling Fan	6.24	
GUI Cable	6.25	
Rear Enclosure	6.26	
Section Four		
Firmware Updating		
	See Service Manual Section	Complete
Service Support Kit	8.2	
Firmware Updating	8.4	
Section Five		
Troubleshooting Guide		
	See Service Manual Section	Complete
MADM™ Theory of Operation	8.1	
Alarms	7.1	
Error Codes	7.2	
Startup Self-Check	7.3	
System Block Diagram	9.0	

We're Here to Help

Stay connected to MADM™ and the Thornhill Medical Team.

Customer Care is one click away

Access our Customer Care portal to find important device resources and access the Thornhill Medical team – we're here to help.

<https://thornhillmedical.com/customercare-madm/>



Training and Information in the Palm of your Hand

Download the MADM™ training app and have quick access to everything you need, exactly when you need it, no matter where you are.

<https://thornhillmedical.com/madm/training/videos/>



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