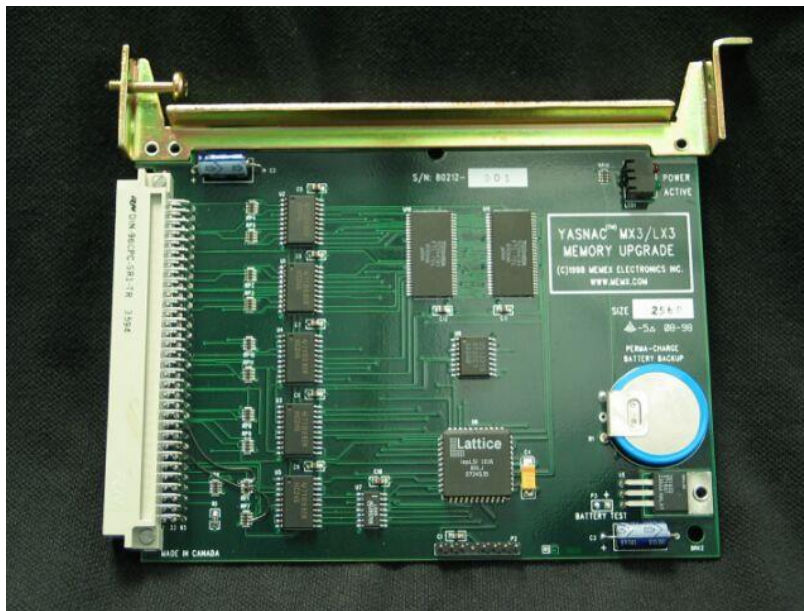




MEMEX YASNAC MX3/LX3 MEMORY INSTALLATION MANUAL



Memex Inc.
105 – 3425 Harvester Rd.
Burlington, Ontario Canada L7N 3N1
Phone: 905-635-1540 Fax: 905-631-9640
www.memex.ca

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CHAPTER 1: INTRODUCTION

The Yasnac MX-3 for mills and LX-3 for Lathes has two distinct memory boards. All system data including Tool Offsets and Parameters are stored in the JANCD-MM20 memory board. Additional part program data is stored in the JANCD-MM21 memory board. This MM21 board is plugged into the control's Masterboard JANCD-MB20E at the position labeled "CND". It is the third board to the left of the Power Supply module.

The available Yasnac original memory boards are as follows:

<u>BOARD</u>	<u>MEMORY OPTION SIZE</u>
MM20	20M, 8k, 66 feet of tape
MM20	40M, 16k, 131 feet of tape
MM21-1	80M, 32k, 262 feet of tape
MM21-2	160M, 64k, 492 feet of tape
MM21-3	320M, 128k, 1049 feet of tape
MM21-4	640M, 256k, 2099 feet of tape
MM21-5	1280M, 512k, 4199 feet of tape
MM21-6	2560M, 1024, 8399 feet of tape (1 Megabyte) = our MX-3



A Yasnac MX3 Control

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CHAPTER 2: BACKUP YOUR CONTROL

Before starting the installation, power on the control and verify that the machine tool is in good working order. If the control has a system error, or the memory is inoperable, you will have to replace your memory board with the new MX-3 memory, and restore the information from existing backup sources.

Important!

Check and backup if necessary the following memory contents: NC parameters, Diagnostic Tooling information, Tool Offsets, and Part Programs (if needed). In upgrading the Part Program memory with our MX-3 memory board, only the part programs need to be backed up - although it is recommended that a full backup of all the control's data be backed-up. If you have an existing smaller MM21 board and it is removed from the control, it will only retain the Part Program data for about 20 minutes. For this reason, it is essential that the Part-Programs be backed up properly on the computer via the RS-232 serial port. Use the following procedures to save the data on a computer. If in doubt, consult your Yasnac manuals, as they are your ultimate authority on your particular version of control.

1. Set up your computer to receive data through its COM port and connect it to your Yasnac control. Set the communication parameters on your PC for 7 data bits, and the stop bits and baud rate as determined by the applicable parameters for your control (Interface 1 or 2). Please refer to the “**Yasnac Mx3 Technical Summary**” section in the back of this manual for the appropriate parameters.
2. Note: If you have any macro programs (O9000 series), you will need to check that they have also been punched at this time. To get a directory go to the ALM screen and page down 2 times or until you see the directory.
 - In MDI mode, hit SET, then 6219, then Cursor down to get to the Parameter Write Enable variable #6219 – type 4 then WR (write) to set;
 - In PRM screen, type 6021 then Cursor down to find parameter #6021. Hit INSRT key to jump to binary side, then make sure bit 7 = 0 (0 + WR) and bit 3 = 1 to get the O9000s to be unprotected and punchable (e.g. #6021 = 0xxx 1xxx where x is original value). Also check #6022 = xx1x xxxx for editing display effective so one can see the 9000s.
 - Unprotect the O8000 files (if applicable) by setting parameter #6004 = xxx0 0xxx.



Part Programs

3. Make the computer ready to receive the data.
 - Select EDIT Mode.
 - Press **PROG** to display the Program Screen.
 - Press **RESET** **O** **-** **9** **9** **9** **9** **OUT**

All of the programs will be punched out. Please check this.

NC Parameters

5. Make the computer ready to receive the data.
 - Select EDIT Mode.
 - Press the **PRM** key to display the Parameter Screen.
 - Press **RESET** **OUT**

The Parameters will be punched out.



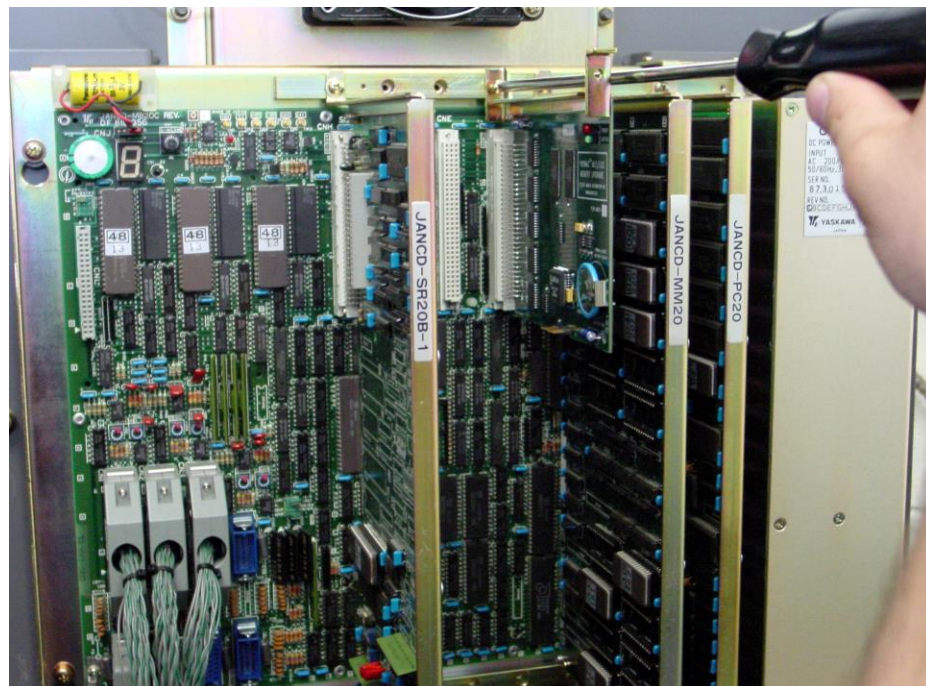
Tool Offsets

6. Make the computer ready to receive the Tool Offset data.
 - Confirm that EDIT Mode is selected.
 - Press **[OFS]** to display the Tool Offset Screen.
 - Press **[RESET]** **[OUT]**

The Tool Offsets will be punched out.

Tooling Data

7. Write down the Tooling Data from the Diagnostic Screen. Record parameters between, and including the following: 8600 - 8700
 - Press the **[DGN]** key to display the Diagnostic Parameter Screen.
 - You can use the **[↓]** (cursor) key to advance the Diagnostic number.
 - Write down the Diagnostic values.
 - Repeat the last two lines to record the remaining diagnostics.



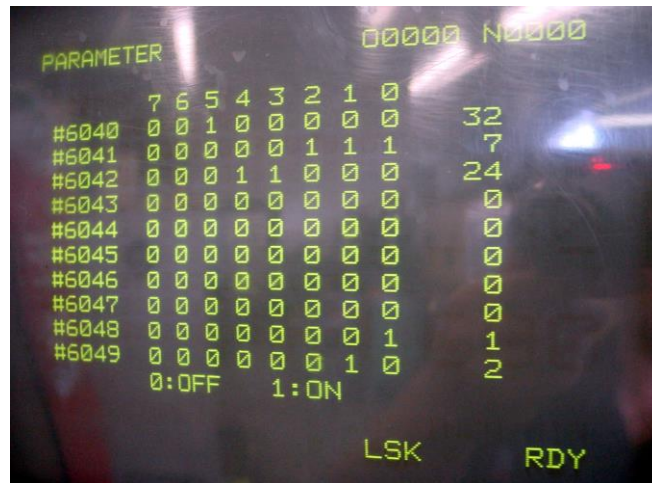
CHAPTER 3: YASNAC MX-3 INSTALLATION PROCEDURE

Time Needed:	About 1 hour
Tools Needed:	1 Philips Screwdriver 1 Small Slot Screwdriver
Components:	1 Memex MX-3 memory board 1 Set of Instructions
Controls:	Yasnac MX-3, LX-3

Important!

1. Before starting the installation, power on the control and verify that the machine tool is in good working order.
2. Make sure that you have a current backup of the NC parameters, Tool Offsets and Part Programs. For instructions on downloading your control's information, refer to Chapter 2 entitled "Backup Your Control" in this manual.
3. Enable the parameter write enable (if not on already):
 - Select MDI Mode.
 - Press the **SET** key to display the Settings Screen.
 - Use the **↓** (page down) key to display Parameter P6219.
 - Enter **4** then **WR** to enable the parameters.
4. Check REGEN enable parameter #6047 as bits 7, 2 and 1 must be on (the parameter should look like "1xxx x11x" where "x" is the original value). Keep notes of all bits changed of course. (NB: Use INSERT key to change to the bit area, then cursor and 1 or 0 to WRite.)
5. Enable the new memory.
 - Press the **PRM** key to display the Parameters Screen.
 - Press the **↓** (page down) key to display Parameter P6041 for an MX3 Mill or P6039 for an LX3 Lathe.
 - Press the **INSERT** to edit P6041 (or P6039), then use the **↓** (cursor) key to select the appropriate bits.

- Enter a **1** or a **0** , then **WR** to set D3, D2, D1, D0 to 0111.
- Press the **INSERT** to finish editing P6041 or P6039.



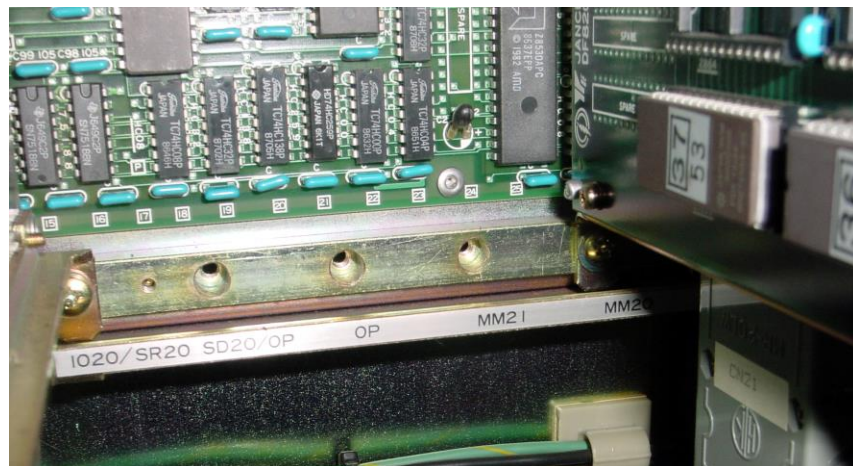
6. Protect the secure parameters.
 - Press the **SET** key to display the Settings Screen.
 - Use the **↓** (page down) key to display Parameter P6219.
 - Enter **0** then **WR** to protect the parameters (or leave it the way it was in the beginning).
7. Inspect the Memex MX-3 memory board for any damage during that may have occurred during shipping.
8. With the Yasnac control powered off and the Emergency Stop (E-STOP) button depressed, gain access to the main masterboard. Find the MM21 memory board (if present) on the masterboard in connector, and carefully remove it with a Philips screwdriver. Carefully place the old MM21 board in the anti-static bag supplied, and set it aside.

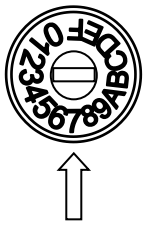
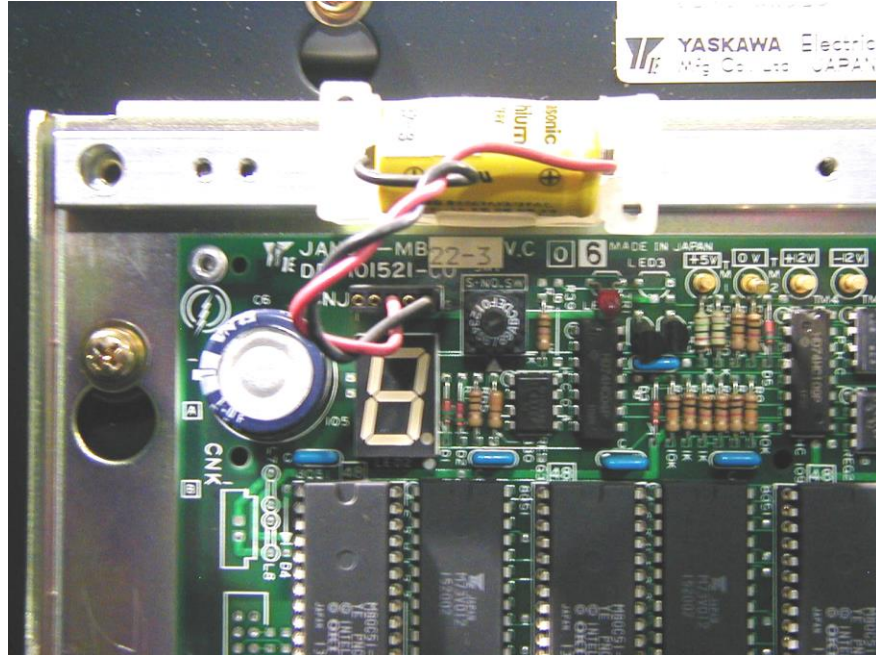
Remove the MM21 memory.



Install the MX3 memory.

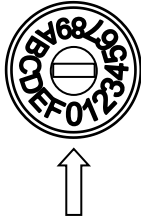
9. Install the MX3 in the MM21 “CND” slot (to the left of the MM20 board) and if necessary, remove the existing smaller MM21 board using a long Philips #2 screwdriver.





10. Locate the Rotary Switch on the upper left of the masterboard. Turn the switch to position “7” with a small screwdriver.
11. Power on the control. This will cause the control to start-up into its GENERATION screen. If the control will not power on at this point, check that the cabinet door interlock is bypassed.
12. On the GENERATION screen press **RESET** **NEXT** then **PROG** and wait for the GENERATION COMPLETE message (about 4 sec). You should see a “2560M (or 1280M) Created” message. Power off.





13. Restore the Rotary Switch to position 0. Close the electrical cabinet then power on the control.

14. Erase the new memory and initialize the directory.

- Select EDIT Mode.
- Be sure the Memory Protect Key is set.
- Press **PROG** to show the Program Screen.
- Press **INSERT** **0** **-** **9** **9** **9** **9** **ERASE** (ERS) to clear the new memory.

15. Check the Directory to verify free memory for 2560M you should see about 1 Megabyte available.



16. Reload the Part-Program data:

EDIT, PROG, RESET, O-9999, IN (IN flashes while loading)

17. Re-Protect the O9000 files again if desired:

- (Set parameter #6021= 0xxx 0xxx where x =original value & #6022 = xx0x xxx for editing display made ineffective if that was the original value.)
- Re-Protect the O8000 files again by setting parameter #6004 = xxx1 1xxx, where x = original value.

18. Congratulations – you have now successfully installed a Memex MX-3 Yasnac memory upgrade. Thank you for going with Memex Automation - we appreciate your business.





An installed Memex Mx3 Board in the MM21 (CND) slot beside the JANCD-MM20 Board.
The compact Mx3 board enables 2560 Meters or about 1 megabyte of characters
in total part program storage.

MX-3 INSTALLATION CHECKLIST (for Yasnac MX-3 Controls)

- Check Machine - Power On - Check for Machine Problems Before You Start.
- To View the Directory: Go to the ALARM screen, PAGE DOWN twice.
- Check that O9000 Part Programs are not protected – unprotected if so (#6021 = 0xxx 1xxx + #6022 = xx1x xxxx for editing display effective – so you can see the 9000s) & O8000 (#6004 = xxx0 0xxx)
- To Download Part Programs: EDIT mode, PROG, RESET, O-9999, OUT
- To Download Tool Offsets: EDIT mode, OFS, RESET, OUT
- To Download Parameters: EDIT mode, PRM, RESET, OUT
- Power Off
- Replace Memory Board
- Turn rotary switch to 7
- Power On
- Push RESET, NEXT, PROG to format memory. – see 2560M Generated Message
- Power Off
- Turn rotary switch back to 0
- Power On
- Enable the new memory:
 - Change P6219 = 4: MDI, SET, Pg. Dn. to P6219, 4, WR
 - Check that P6047 = “1xxx x11x”
 - Change P6041 or P6039: PRM, P6041 or P6039, INSERT, CURSR, enter 1 or 0, WR, INSERT
 - Reset P6219 = 0: SET, Page Down to P6219, 0, WR
- Erase memory: EDIT, KEY, PROG, INSERT, O-9999, ERASE
- Check the Directory to verify free memory (1047748 for 2560M):
- Reload the Part-Program data: EDIT, PROG, RESET, O-9999, IN (IN flashes while loading)
- Re-Protect O9000 macro files if necessary (#6021 = 1xxx 0xxx + #6022 = xx1x xxxx for editing display effective – so you can see the 9000s) & O8000 (#6004 = xxx1 1xxx)
- In the SET screen, reset parameter write enable #6219 back to 0
- Check the machine thoroughly.
- Complete.

CHAPTER 4: Yasnac MX3 Technical Summary

Communication settings:

Check the Input Device:

	<i>Input Device 1</i>	<i>Input Device 0</i>
RS-232 Interface 1	Parameter 6003, D1 = 0	Parameter 6003, D0 = 1
RS-232 Interface 2	Parameter 6003, D1 = 1	Parameter 6003, D0 = 0

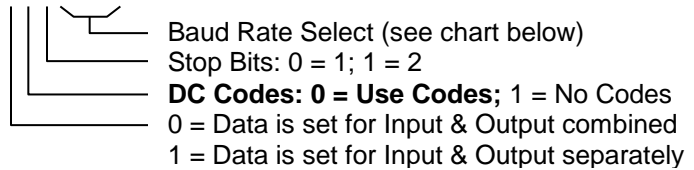
Check the Output Device:

	<i>Output Device 1</i>	<i>Output Device 0</i>
RS-232 Interface 1	Parameter 6003, D5 = 0	Parameter 6003, D4 = 1
RS-232 Interface 2	Parameter 6003, D5 = 1	Parameter 6003, D4 = 0

Check the Port Settings:

	<i>Input Baud Rate Select</i>	<i>Output Baud Rate Select</i>
RS-232 Interface 1	Parameter 6026	Parameter 6028
RS-232 Interface 2	Parameter 6027	Parameter 6029

RS-232 Parameters 6026 – 6029 Definition: XXXXXXXX



- Parameter 6026: Settings for Input on RS-232 Interface 1
- Parameter 6027: Settings for Input on RS-232 Interface 2
- Parameter 6028: Settings for Output on RS-232 Interface 1
- Parameter 6029: Settings for Output on RS-232 Interface 2

Baud Rate Chart:

Baud	Bit 3 – D3	Bit 2 – D2	Bit 1 – D1	Bit 0 – D0
50	0	0	0	0
100	0	0	0	1
110	0	0	1	0
150	0	0	1	1
200	0	1	0	0
300	0	1	0	1
600	0	1	1	0
1200	0	1	1	1
2400	1	0	0	0
4800	1	0	0	1
9600	1	0	1	0

Notes:

1. Editing Large Files:

- The maximum size of a file that can be editing in normal EDIT mode is about 32k characters. To edit a larger one, switch to MEM mode, search for the desired line and then switch back to EDIT mode to make an edit to the part program.
- Note that if you have soft keys and have trouble loading larger files into the memory (greater than 32k), it may be the sub function editing option related problem – check parameter 6076 bit 4 and set it to a 1 to enable normal editing functionality.

2. DripFeed TAPE Mode Instructions:

- Assuming the serial cable and DNC software work properly (checkout www.memex.ca if software is needed), put the mode select into TAPE mode and put Single Block on. Hit Cycle Start to get the light on, then send the desired file serially to the CNC (some code will be read and the system should wait for Single Block to be removed). Once you are back at the machine tool, set the Feedrate Over-ride to a safe slow position and release Single Block. You will be drip-feeding at this point.
- Note: Make very sure that the flow control on the serial line is OK before this procedure as no data can be lost or a crash will result. We usually set a small delay between each line to guarantee reliable data transfer. We recommend testing serial communications in Edit mode (going IN and OUT before drip-feeding).

3. Error Messages:

- If the MM21 (or our Mx-3 board) is not installed or working properly, once with get a various messages such as:

```
GENERATION COMPLETE  
UNMATCHED MM21  
PROG 80M GENERATED
```

Or

```
328: Unsuitable MM21
```

Check the board, options & the written procedure carefully, and then contact us if needed.

Note that the Memex Mx3 board does not use the main battery power as it is non-volatile with a “Perma-Charge” Lithium Rechargeable battery system on-board (which should be 2.6 to 3.2 VDC normally).



Memex Inc.

105 – 3425 Harvester Road
Burlington, Ontario
Canada L7N 3N1

Phone: 905-635-1540 Fax: 905-631-9640

Sales: (905) 635-3041
Support: (905) 635-3042

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