MEMEX
Measuring Manufacturing Excellence

Memory Upgrade
Fanuc 16 & 18 A/B/C Series CNCs

Installation Instructions

Memex Inc.
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Burlington, Ontario Canada L7N 3V6
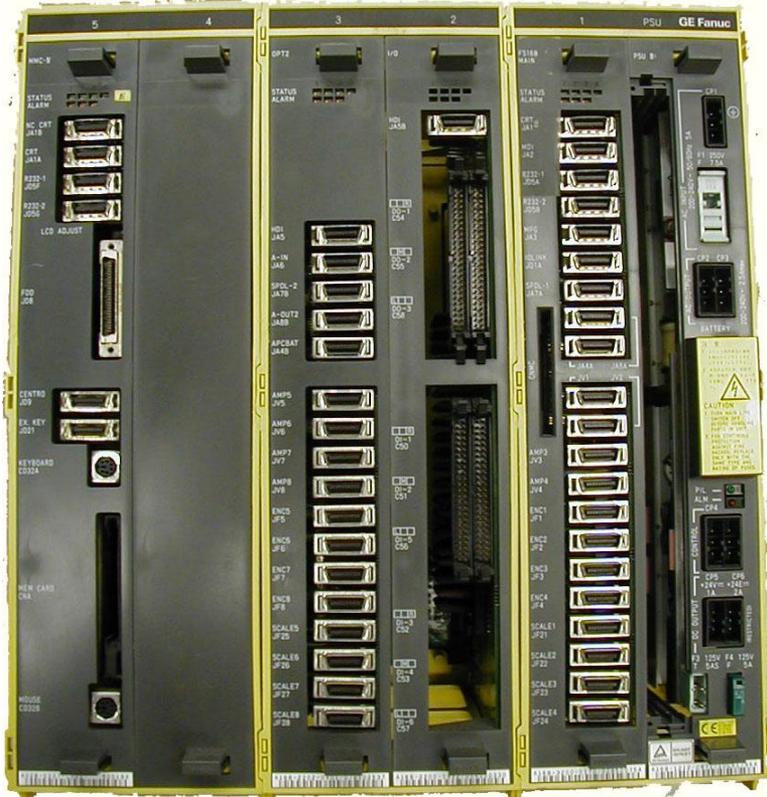Phone: 905-635-3040 Fax: 905-631-9640
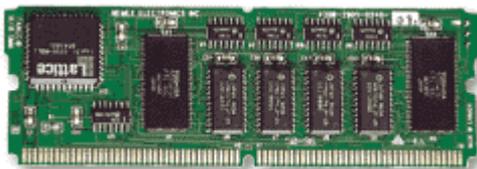www.memexoee.com

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PLEASE NOTE

This manual is a guide – Memex assumes no liability for the use of this manual.
Please read the manual carefully and consult the Fanuc™ manual or Memex
technical support if in doubt. Always take care and observe all safety rules.
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Fanuc 16B Control

Fanuc 16/18 A SRAM Memory Module

Introduction

Thank you for purchasing the Memex Memory Upgrade Kit for the Fanuc 16 and 18 series controls. At Memex we invest a great deal of effort in the design, manufacture and testing of each unit we build, and back it with a three-year limited warranty. We are confident you will find this upgrade significantly improves your CNC machining operations.

General Information

The installation procedure is straightforward and relatively easy to complete – backup the parameters and programs, swap the memory module, and restore the parameters and programs. All that's needed are some basic skills and hand tools. Estimated time required: 1 hour.

The 16-A and 18-A controls can be upgraded to a maximum of 1MB of SRAM (1280 meters). The 18-B and 18-C can be upgraded by 768KB (1920 meters) and the 16-B and 16-C can be upgraded by 2.25MB (5120 meters). The SRAM-based memory is resident on a Single In-Line Memory Module or "SIMM" that is located on the Main CPU board. This "CPU" board is one of the grey slots in the yellow plastic box, next to the power supply at the right side. The CPU board, once removed, can keep the SIMM powered for over 30 minutes via a "MAXCAP" backup capacitor.

IMPORTANT: Please see "Applicable CPU Boards" on page 17. This SIMM must not be installed in a board not listed in the table. If the intended CPU board is not listed, please contact Memex Technical Support. Contact information is listed on page 18 of this manual.

<div align="center">

FANUC 16MB (0010) FROM NOTE:
If you have a Fanuc 16MB with a CPU Main Board of A16B-3200-0010, then you will need a Memex FROM Board (SKU-2471) rather than the normal SRAM card described here.

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Installation Considerations

The memory upgrade should be conducted with care. Never install or remove a board with the control power on (the main power can be on, but not the control). Take care when handling circuit boards, as they are static sensitive. Keep the boards in the anti-static bag provided. Do not place the SIMM in any other slot on the Fanuc CPU board. Do not force, drop or otherwise mishandle the boards during the installation procedure.

About this Manual

This manual explains how to install the Memex Memory Upgrade Kit for the Fanuc 16 or 18 control, and consists of the following sections:

Installing the Memex Memory Upgrade explains how to install the Memex Memory Upgrade Kit into the Fanuc 16 or 18 CNC. It consists of sections regarding backing up the control's memory contents to both a memory PC card (formerly known as a "PCMCIA" card) and a computer, removing the existing CNC memory module and installing the new one, changing some settings to use the new memory size, and restoring and verifying the control.

Fanuc 16 & 18 Technical Summary provides brief summaries of the procedures to punch and read data, critical parameters and their settings, serial port and cable configuration information, applicable CPU boards and memory modules, and PC card backup file naming conventions.

Technical Support provides contact information for technical support and customer service.

Appendix A: Parameter Records provides tables for manually recording critical parameters before performing the memory upgrade. These parameters must be re-entered manually before restoring the parameter backups after the memory upgrade. *It is critical that they be copied down accurately.*

Installing the Memex Memory Upgrade

Backup All Parameters

For the 16-B, 16-C, 18-B and 18-C controls, the Memex Memory Upgrade kit can optionally include an SRAM PC card that allows you to easily backup your existing CNC settings. The process backs up all parameters into non-volatile memory on the card. The card may then be kept as a safety backup of the pre-upgrade configuration in case a quick reversal of the upgrade is ever required, or updated after the upgrade to facilitate a quick restore of the new configuration in the event of any parameter change or loss.

Backup to PCMCIA SRAM Card

This step is only for the 16-B, 16-C, 18-B and 18-C controls. If installing in a 16-A or 18-A, please skip to "*Record Settings & Options*" on page 4.

Before starting the installation, power on the control and verify that the machine tool is in good working order. If the control has an SRAM system error and is inoperable, then you will have to replace your SIMM with the new one, and restore the information from existing parameter backups.

1. Home the machine before performing the memory upgrade.

2. Insert the supplied SRAM PC card into the main CPU slot 1, facing left. It goes in only a short way and can be done with the power ON or OFF.

3. Power ON the control holding down the two right-most soft keys under the monitor. The SYSTEM MONITOR SERVICE MENU screen should appear.

4. If the card has not been used in a Fanuc before, cursor down and select #5 to format it.

5. Select the SRAM DATA BACKUP line and press SELECT to change to the Backup screen.

Note: If the CNC has an Option board that also has SRAM, it needs to be backed up as well. An intermediate menu will appear in this case. Select each line and backup up the files indicated (if present).

```
BOOT SLOT  CONFIGURATION   60M1-09

 NO.    BOARD        F-ROM         SRAM
 0.     MAIN         4MB           1.0 MB
 3.     OPT3                       128 KB
 4.     LCB                        512 KB

           *** MESSAGE ***
   SELECT SLOT AND HIT SELECT KEY
  [SELECT]  [YES]  [NO]  [UP]  [DOWN]
```

Sample Optional Intermediate SRAM Backup Menu

To start use DOWN and select MAIN to see the screen below:

```
SRAM DATA BACKUP
[BOARD: MAIN]
1.      SRAM BACKUP (CNC -> MEMORY CARD)
2.      RESTORE SRAM (MEMORY CARD -> CNC)
END

SRAM SIZE:  1.0 MB (BASIC + OPTION)
FILE NAME:  SRAM1_0A.FDB
SRAM1_0B.FDB
```

6. Using the soft keys, select SRAM BACKUP. It will ask you if you want to save the SRAM settings. Press YES to save the necessary files.

7. Back out of that menu by using the soft keys to select END. (Once at the main menu you can check the contents of your SRAM card by selecting MEMORY CARD FILE DELETE and checking out what files are available for deletion - obviously back out of this menu without deleting anything after looking.)

8. On the main screen, go to the bottom and select END, then press YES to leave this area and reboot the control. The files backed up to the SRAM card may be checked via a notebook PC's PC card slot. Filenames should match the ones listed on page 18.

CAUTION: *Never initialize the **Flash** memory from the SRAM boot screen.* - It will clear your operating system files, including your ladder. It is OK to initialize the **SRAM** card however. If you would like to see what files are already on the SRAM card, you can select the "Delete Files" menu item, view them, and then exit without deleting anything.

Record Settings & Options

Settings

1. Using the forms on page 20, record the SETTING ("Handy") screen data. (To display the parameters, Press the SYSTEM , PARAM soft keys. To skip to specific parameters, enter the number of the parameter to be displayed and press NO.SRH. The screen can also be changed using the cursor or page key.)

2. Write down the serial port settings in parameters 20, 100-103, 111-113 and 121-123. (131-133 if using Channel 3, i.e. RS-422 link.)

3. Using the forms on pages 20-24, record the NC Service Parameters, PC Parameters, and Data Tables.

Manual Backup to Computer

1. If not already connected, connect the CNC to a PC with a serial data cable *(see "Standard Fanuc Serial Cable", page 16)*. You will need a communications program (such as a DNC system or at least a terminal program) to download and upload the parameters. Make sure the software's communications settings match the CNC's.

NC Parameters
2. Get the computer ready to receive the NC data.
    *   Select EDIT mode.
    *   Press softkeys SYSTEM PARAM OPTR > PUNCH EXEC

Pitch Error Compensation
3. Get the computer ready to receive the Pitch Error Comp. data.
    *   Confirm that EDIT mode is selected.
    *   Press SYSTEM > PITCH OPTR > PUNCH EXEC

Macro Variables
4. Get the computer ready to receive the macro variables.
    *   Confirm that EDIT mode is selected.
    *   Press OFFSET > MACRO OPTR > PUNCH EXEC

Part Programs
5. Set parameter 3202.4 and 3202.0 to 0 to *unprotect* part programs in the 8000 series and 9000 series. Get the computer ready to receive part programs.
    *   Confirm that EDIT mode is selected.
    *   Press PRGRM >
    *   Type O-9999 and press PUNCH EXEC.

Tool & Work Offsets
6. Get the computer ready to receive the Tool Offset data.
    *   Confirm that EDIT mode is selected.
    *   Press OFFSET OPTR > PUNCH EXEC.

    Get the computer ready to receive the Work Offset data.
    *   Confirm that EDIT mode is selected.
    *   Press WORK OPTR > PUNCH EXEC

PMC Data
7. The PMC communications settings are separate from the normal serial port settings. Set them to match the settings for other serial communications so the PMC data can be easily backed up.

To set the communications settings and output the data:
- Select MDI mode.
- Press OFFSET/SETTING, then the SETTING softkey.
- Cursor to PARAMETER WRITE and input a 1. Ignore alarm.
- Press SYSTEM key, then softkeys PMC PMCPRM KEEPRL .
- Cursor to K17 and set bit 1 to 1 (change no other bits).
- Select EDIT mode.
- Press < > I/O.
- Set the parameters to match those of the normal I/O channel.
- Fort CHANNEL NO, input 1 for channel 1.
- For DEVICE, press softkey FDCAS
- For KIND DATA, press softkey PARAM.
- For FUNCTION, press softkey WRITE.
- For FILE No, enter the file name @PMC and press INPUT.
- Press softkey EXEC. The PMC parameters will be output.
- After output finishes, set PARAMETER WRITE back to 0
- Press RESET to release alarm 100.

Once downloaded this PMC file must be edited before it can be reloaded. Load the file just downloaded into an editor and delete the 12 or so characters before the first percent sign (these are feed characters and will cause a 930 System Alarm if present when file is reloaded).

> NOTE: On some Makino machines the PMC parameters may be locked with LOCK RELEASE. Type MSYS or PRO then INPUT. Also on some Makino machines the M231 code can be used to copy the PMC data into program 06666.
>
> ·   In MDI mode, press PROGRAM M   2   3   1 INSERT
> ·   Press CUSTOM then PARAM or MS
> ·   Press MENU PAGE then LOCK RELEASE
> ·   Type P R O or M S Y S then INPUT
> ·   Press CYCLE START
>
> The PMC data will now be written to part program O6666. Backup this program to the computer the same way as other part programs.

Also backup CAP data and Graphics & Animation parameters if present: Edit mode, press OFFSET key, then CAP TL > PUNCH.

Upgrade Memory Size Option Parameters

Certain NC parameters contain bits that must match the size of memory installed, and must therefore be upgraded before being restored. A safe and convenient way to do so is to use the software included with the upgrade kit.

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Note: FS16/18A maximum memory is when P9921.0-4=0 + P9943.6=1. For FS16/18C, max is P9921.0-4=0 + P9943.6=0 + P9953.0=0 + P9953.1=1. Note that FS18C needs software version "BDBA Ver 0001" for 2 meg 5120 Meters (which is available from us if needed) – otherwise max is 1280 Meters (with BDB1 Ver 00xx).

Note: For FS16A MAPPS on a Mori Seiki, get "D" Params in Custom Key, Input, type "76543210" Input and Yes (to write Parameters), "95" Change D453 & D458 bits, Input decimal as binary.

Note: For FS16/18 Sub-Memory – P9950.1=320, P9950.0=640, P9950.5=1280 + P9949.7=Add. Sub-Memory for PP/S Edit2 Option

Note: If you have trouble clearing the Additional SRAM and still get Parity Alarms, you can download a blank 512k SRAM backup file from our web site at:

http://www.memex.ca/products/SRAM2_5D.FDB

This file can be renamed to whatever the control can read in the restore screen. This file copied and renamed the number of times necessary will effectively erase (write to all zeros) the Additional SRAM Card.
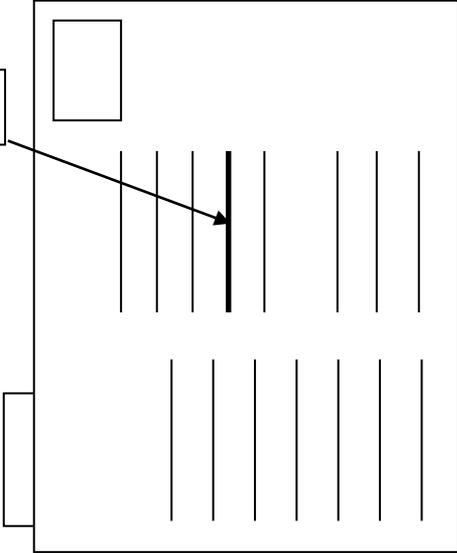
If you have a simple controller (no Option or Loader boards) holding down RESET + DELETE will clear every board.

Fanuc CPU Card Layout Examples
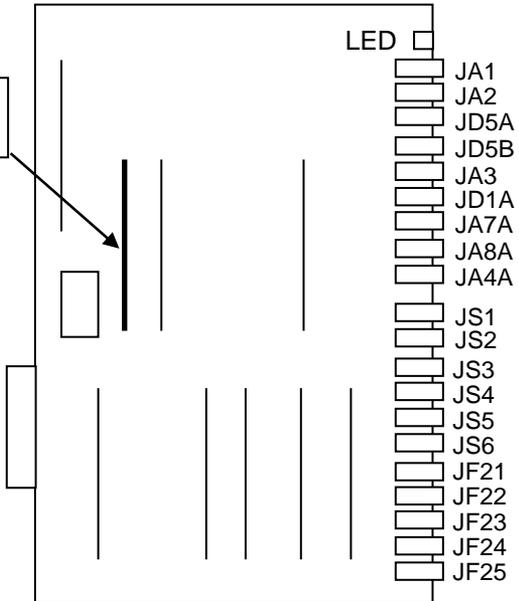
(See Maintenance Manual for other CPU models)

A16B-2201-0800

SRAM
Module

A16B-3200-0190

LED

SRAM
Module

JA1
JA2
JD5A
JD5B
JA3
JD1A
JA7A
JA8A
JA4A

JS1
JS2
JS3
JS4
JS5
JS6
JF21
JF22
JF23
JF24
JF25

Install the New Memory Module

Make sure that there is a current backup of NC Parameters, Pitch Error Compensation, Offsets, PMC Parameters and Part Programs as explained in "Backup All Parameters" starting on page 2. *The following steps will delete all data from your control.*

Remove CPU

1. With the Fanuc control powered off and the Emergency Stop button depressed, access the main masterboard. Find Slot 1, second from the right, labelled as the Main CPU board. Locate the tabs on the top and bottom. Squeeze the tabs and carefully pull the board out. The unit can often be removed with all the cables attached if the shield clamps are loosened beforehand. If not, carefully label the cables and the points they connect to so they can be correctly reconnected later, and remove cables as necessary.

Install Memory Module

2. Locate the existing memory module – see diagram on page 9 or refer to your Maintenance Manual. It is labelled "SRAM". Remove it carefully by opening the small tabs and tilting it towards the back. Insert the new module the same way *(note the keyway)*. It should click into place. Now put the CPU board back into its slot and make sure all cables are correctly connected, well seated and secured.

Initialize Memory Module

3. With the RESET + DELETE keys depressed, power on the control, and keep the RESET & DELETE keys depressed until you see the memory starting to clear. This will clear the entire memory module. If the control will not power on at this point, check that main power is restored and the cabinet door interlock is bypassed. The control may take a few seconds to clear the entire memory. Alternatively, try powering on with RESET + DELETE to delete all memory on all boards (not just our Additional SRAM) – take care...

    NOTE: If you have a Loader OP3 board, it too will be cleared in this procedure. It seems that TT controls are not affected however, as the L/R switch selects the side to clear.
    The Memex Additional SRAM memory module has now been initialized and all parameters must be restored.

Restore The Control

Restore Settings & Options

Before restoring parameters from backup copy, some of the parameters recorded on pages 22-26 must be restored manually. Enter SETTING ("Handy") screen data and serial communications parameters.

Restore From SRAM PC Card or from Computer

The remaining parameters may be restored from either the SRAM PC card or the computer. Choose one of the following two options:

Option 1: Restore From SRAM PC Card

1. Before the files on the SRAM card can be restored, they must be renamed to correspond to the new memory size. See page 18 for naming conventions and instructions on renaming the backup files.

2. Insert the SRAM card into the main CPU slot 1, with the face pointing left. It goes in only a short way and can be done with the power ON or OFF.

3. Power ON the control holding down the two right-most soft keys under the monitor. The SYSTEM MONITOR SERVICE MENU screen should appear.

4. Select the SRAM DATA RESTORE line to change to the Restore screen.

9. Cursor to and select RESTORE SRAM. Press YES to restore the files.

10. Back out of that menu by using the soft keys to select END. On the main screen, go to the bottom and select END, then press YES to leave this area and reboot the control.

CAUTION: *Never initialize the **Flash** memory from the SRAM boot screen.* - It will clear your operating system files, including your ladder. It is OK to initialize the **SRAM** card however. To see the files already on the SRAM card, select the "Delete Files" menu item, view them, but then exit.

Option 2: Restore From Computer

1. Set the PWE (set parameter 8000.0 to 1).

Restore NC Parameters

2. Get the computer ready to send the NC data. Make sure its serial communications settings match the CNC's corresponding settings.
    *   Select EDIT mode, and turn the Program Protect key OFF.
    *   Press SYSTEM PARAM OPTR > READ EXEC .
    *   Send the data from the computer.
    *   Power the CNC off & back on after upload finishes. Alarm 300 is normal at this stage if Absolute Pulse Coders exist.

Restore PMC Data

3. Get the computer ready to send the PMC data. Make sure the CNC is ready to receive the PMC data - see "PMC Data" on page 7. Note that some machine tools require that the Ladder be stopped before all the Data Tables can be loaded. If so, press SYSTEM, PMC, RUN/STOP, >, STOP. If the control has special options, such as a 5th axis table, you might need to power on holding "-" & "." and then select a boot without the ladder running.

    Load the PMC data as follows:
    *   Press OFFSET SETTING .
    *   Select MDI mode and set PWE on (set #8000.0 to 1).
    *   Press SYSTEM PMC PCMPRM KEEPRL .
    *   Set K17 bit 1 to 1 (change no other bits in K17).
    *   Select Edit mode. If required, set #K900 to 10.
    *   Press < or > to find I/O . For CHANNEL NO, input 1 .
    *   For DEVICE, select FDCAS .
    *   For DATA KIND, press PARAM .
    *   For FUNCTION, press READ . For FILE NO, press 2
    *   Press < SPEED and check serial settings for FDCAS.
    *   Press EXEC and send PMC data from the computer.

On some Makinos the PMC data is restored via program O6666. If it was backed up via O6666, restore O6666 from the computer and call it up in Memory mode, then

*   Press CUSTOM then PARAM or MS
*   Press MENU PAGE then LOCK RELEASE
*   Type P R O or M S Y S then INPUT
*   Press CYCLE START

PMC parameters will be written into the registers. Lock the parameter register by pressing LOCK RELEASE. Turn power OFF and ON, and then delete O6666.

Restore Pitch Error Compensation
4. Get the computer ready to send the Pitch Error Comp. data. Confirm EDIT mode is selected.
   - Press SYSTEM $>$ PITCH OPTR $>$ READ EXEC.
   - Send the data from the computer.

Macro Variables
5. Upload the Macro Variables as a part program. Execute the program in Memory mode and then delete it.

Restore Part Programs
6. Set parameter 3202.4 and 3202.0 to 0 to *unprotect* part programs in the 8000 and 9000 series.
   - Confirm EDIT mode is selected.
   - Press PRGRM OPTR $>$ READ EXEC.
   - Send the part programs from the computer.

Restore Offsets
7. Get the computer ready to send the Tool Offset data.
   - Confirm EDIT mode is selected.
   - Press OFFSET OPTR $>$ READ EXEC.
   - Send the Tool Offset data.

   Get the computer ready to send the Work Offset data.
   - Press WORK OPTR $>$ READ EXEC.
   - Send the Work Offset data.

8. Reload CAP data and Graphics & Animation data if present.
   - In Edit mode, press OFFSET CAP TL $>$ READ

9. Reset Absolute Pulse Encoders, if necessary.
   - Power on holding P & CAN
   - Manually home the machine.
   - If Alarm 300 persists, then:
       Select MDI mode and set PWE on (set #8000.0 to 1).
       Press SYSTEM PARAM. Set #P1815.4 to 1 on all axes.
       Reset PWE (#8000.0 to 0) and power the control off & on.
       Manually home the machine again. Set PWE.
       Press SYSTEM PARAM. Set #P1815.4 to 1 on all axes.
       For Relative Position, set #P3104.3 to 1.
       Reset PWE. Press RESET.

Verify The Control

Once the upgrade is completed, including the reloading of all parameters, test the machine via the following procedure.

IMPORTANT: *Do not move the machine until you are sure all parameters have been restored.*

- Change to either MDI mode or Program mode.
- Home all axes, tool changers and pallets.
- Check spindle functionality through all speeds and gear ranges.
- Check Clockwise and Counter-clockwise spindle rotation with M3 and M4 commands.
- Check the tool changer. Be sure that the tool received was the tool requested and that the carousel rotates in the proper direction.
- Check the pallet changer (if applicable). If the machine requires special custom macros for a pallet changer or tool changer, be sure that they are present.

Option: Update SRAM PC Card
Now that the control is set to work with the new memory size, the SRAM PC card can either be updated with the new parameters to act as a safety backup of the new configuration (refer to "Backup to SRAM PC Card" on page 18), or kept as is as a convenient means of restoring the control to the previous (pre-upgraded) state.

A PCMCIA Type II SRAM Card

Installation Checklist:

- Check machine - Power ON and check for problems before you start.

- Backup settings, options, parameters and programs.

- Power OFF.

- Depress EMERGENCY STOP.

- Change SIMMs.

- Power On the Control holding $\boxed{O}$ & $\boxed{\text{DELETE}}$ to clear all.

- Set PWE to enable.

- Restore settings.

- Restore parameters & part programs.

- Check the parameters and machine operation thoroughly.

Complete.

Fanuc 16/18 Technical Summary

Punching

NC Parameters   EDIT mode; SYSTEM PARAM OPTR > PUNCH EXEC

Pitch Error Compensation   EDIT mode; SYSTEM > PITCH OPTR > PUNCH EXEC

Macro Variables   EDIT mode; OFFSET > MACRO OPTR > PUNCH EXEC

All Programs   EDIT mode; PRGRM > O–9999 PUNCH EXEC

Offsets   EDIT mode; OFFSET (or WORK) OPTR > PUNCH EXEC

Reading

NC Parameters   EDIT mode, Protect key off; SYSTEM PARAM OPTR > READ EXEC

Pitch Error Compensation   EDIT mode; SYSTEM > PITCH OPTR > READ EXEC

All Programs   EDIT mode; #3202.4 & .0 = 0; PRGRM OPTR > READ EXEC

Offsets   EDIT mode; OFFSET (or WORK), OPTR > READ EXEC

Initializing

Erase *Entire* Memory   Power On holding O & RESET with Write Protect Key off

Typical Serial Communications Parameter Settings

NOTE: For Channel 3, see Parameter Manual, Fanuc #62450E, section 4.2 (5).

Parameter	Description	Setting
0020	I/O Channel	0 or 1 = Chan. 1, 2=2
0100.1	Tape Vertical Check – all channels	0 = No TV Check
0100.3	EOB format in ISO code – all chan.	1 = CR, LF, LF (0 = LF)
0100.5	DNC Handshake method – all chan	1 = DC3 when buffer full
0100.7	Treatment of Null code – all chan.	1 = Ignore Nulls (0 = alarm)
0101.0	Stop Bits – Channel 0	0 = 1, 1 = 2 stop bits
0101.3	ISO or ASCII Input code – Chan. 0	0 = Auto-select (1 = ASCII)
0101.7	Feed output – Channel 0	1 = no feed (0 = feed output)
0102	Device Type – Channel 0	0 = RS232C with DC codes
0103	Baud Rate – Channel 0	10=4800,11=9600,12=19200
0111-0113	Same as 0101-0103 but for I/O Channel 1	
0121-0123	Same as 0101-0103 but for I/O Channel 2	

Applicable CPU Boards

16-A	16-B	16-C
A16B-2200-0900	A16B-3200-0110	A16B-3200-0190
	A16B-3200-0170	
18-A	**18-B**	**18-C**
A16B-2201-0080	A16B-2202-0860	A16B-3200-0210
	A16B-3200-0160	

Available Memory SIMM

16-A	16-B	16-C
A20B-2900-0530 (256KB)	A20B-2900-0350 (256KB)	A20B-2900-0350 (256KB)
A20B-2900-0541 (512KB)	A20B-2900-0351 (768KB)	A20B-2900-0351 (768KB)
A20B-2900-0540 (1MB)	A20B-2900-0352 (2.25MB)	A20B-2900-0352 (2.25MB)
18-A	**18-B**	**18-C**
A20B-2900-0530 (256KB)	A20B-2900-0350 (256KB)	A20B-2900-0350 (256KB)
A20B-2900-0541 (512KB)	A20B-2900-0351 (768KB)	A20B-2900-0351 (768KB)
A20B-2900-0540 (1MB)	A20B-2900-0352 (2.25MB)	A20B-2900-0352 (2.25MB)

Standard Fanuc Serial Port: (DB25 Female)

1 = Frame Ground	6 = Data Set Ready
2 = Transmit Data	7 = Signal Ground
3 = Receive Data	8 = Carrier Detect
4 = Ready To Send	20 = Data Terminal Ready
5 = Clear To Send	25 = +24 DC Volts

Standard Fanuc Serial Cable

Computer		Fanuc DB25F
PC 25-pin Female	to	DB25 Male (Pin)
Tx – 2	-	3 – Rx
Rx – 3	-	2 – Tx
RTS – 4	-	5 – CTS
CTS – 5	-	4 – RTS
SG – 7	-	7 – SG
FG – 1	-	No Connection
PC 9-pin Female	to	DB 25 Male (Pin)
Tx – 3	-	3 – Rx
Rx – 2	-	2 – Tx
RTS – 7	-	5 – CTS
CTS – 8	-	4 – RTS
SG – 5	-	7 – SG
FG – (D-shell)	-	No Connection

Fanuc Protocol: E,7,x

The standard serial communications protocol for Fanuc controls is always Even Parity and 7 Data Bits. Stop Bits are either 1 or 2, as set via parameter 101, 111 or 121, depending on the channel used. (see "Typical Serial Communications Parameter Settings" on page 16).

SRAM PC Card File Naming Conventions

The files saved on the SRAM PC card during backup are named according to a set of naming schemes, depending upon memory module size. When performing a restore operation after a memory upgrade, files backed up from a different memory size will be ignored, since the directory looks for filenames according to the scheme for the current memory size. Therefore the backup files must be renamed to match the naming scheme of the new memory size. A computer with PC card reading capability is required to access and rename the files on the card. The naming schemes for each memory size are as follows:

Memory	PC Card Backup File Naming Scheme
256K	SRAM256A.FDB
512K	SRAM0_5A.FDB
1.0MEG	SRAM1_0A.FDB, SRAM1_0B.FDB
1.5MEG	SRAM1_5A.FDB, SRAM1_5B.FDB, SRAM1_5C.FDB
2.0MEG	SRAM2_5A.FDB, SRAM2_5B.FDB, SRAM2_5C.FDB, SRAM2_5D.FDB, SRAM2_5E.FDB

Example: When upgrading from 1 Mb to 2 Mb, the files on the card would be renamed from "SRAM1_0A.FDB" and "SRAM1_0B.FDB" to "SRAM2_5A.FDB" and "SRAM2_5B.FDB". The three remaining files in the 2 Mb naming scheme will be created by the control.

Memex Technical Support & Service

In case of technical difficulty with the memory upgrade procedure, please contact your Memex dealer, or call Memex Inc Technical Support. Page 21 of this manual may be used to record technical information, service advice, etc. as needed.

If you have any other questions or concerns, need answers to technical questions, or need information about Memex products and/or services, please contact your local Memex dealer, or contact Memex Inc. directly at:

Memex Inc.

2 – 880 Laurentian Drive,
Burlington, Ontario Canada L7N 3V6

Phone: 1-905-635-1540   Fax: 1-905-631-9640
www.memex.ca

sales@memexoee.com
support@memexoee.com

Notes:

Fanuc System 16/18 Machine Parameter Worksheet

Company: _____ Machine No.:_____ Date:_____

Fanuc Software Version: _____ Main CPU Board No.:_____

Setting Data Screen

Parameter Write		Type Format	
TV Check		Sequence Stop (Program No.)	
Punch Code		Sequence Stop (Sequence No.)	
Input Unit		X Axis Mirror	
I/O Channel		Y Axis Mirror	
Sequence No.			

Serial Communications Parameters

Note: Grey area (#131-132) are for Channel 3, normally used for RS-422 link.

All Channels		Channel 0		Channel 1		Channel 2		Channel 3	
Par.#	Value	Par.#	Value	Par.#	Value	Par.#	Value	Par.#	Value
20		101		111		121		131	
100		102		112		122		132	
		103		113		123		133	

PLC Service Parameters

Par.#	Value	Par.#	Value
9900		9925	
9920		9926	
9921		9927	
9922		9928	
9923		9929	
9924		9930	

Appendix A: Parameter Records

PC Parameters

Timers				Spare		Counters			Keep Relays	
No.	Data	No.	Data	No.	Data	No.	Preset	Current	No.	Data
1		21				1			1	
2		22				2			2	
3		23				3			3	
4		24				4			4	
5		25				5			5	
6		26				6			6	
7		27				7			7	
8		28				8			8	
9		29				9			9	
10		30				10			10	
11		31				11			11	
12		32				12			12	
13		33				13			13	
14		34				14			14	
15		35				15			15	
16		36				16			16	
17		37				17			17	
18		38				18			18	
19		39				19				
20		40				20				

"No. of Data" row 0 indicates how many data tables there are. The remaining rows in that column indicate how many entries are in each table. Page down through each table and record all the data in each, using the form on the next two pages - photocopy the form before starting, if more are needed.

Data Tables

No.	Parameter	No. of Data	Offset	Special	Table No. 0
0	- - - - -		- - - - -	- - - - -	- - - - -
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

No.	Data	No.	Data	No.	Data	No.	Data
0		0		0		0	
1		1		1		1	
2		2		2		2	
3		3		3		3	
4		4		4		4	
5		5		5		5	
6		6		6		6	
7		7		7		7	
8		8		8		8	
9		9		9		9	
0		0		0		0	
1		1		1		1	
2		2		2		2	
3		3		3		3	
4		4		4		4	
5		5		5		5	
6		6		6		6	
7		7		7		7	
8		8		8		8	
9		9		9		9	
0		0		0		0	
1		1		1		1	
2		2		2		2	
3		3		3		3	
4		4		4		4	

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5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0

5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0

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