

**MDM Metrosoft S.a.s.**  
di DENI Ing. M. & C.



*APPLICATIONS MANAGER*  
User's Guide

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# INTRODUCTION

The origin of this Software is due to the necessity of the creation of a standardized software environment, that we have named “MetroSoft environment”, for the CMM CATRIM produced by MDM MECATRONICS.

The name “*Applications Manager*” has been chosen to indicate that this main software is the *Manager* of single dedicated software (*Application*) .

The introduction of *Applications Manager* has these advantages :

1. Procedures of installation and setup for different Applications are similar and may be easily done by the same operator without MDM MetroSoft assistance.
2. Selection of all the Applications through the same menu, without necessity of DOS.
3. In case of CNC CATRIM possibility, if desired, of a movimentation :
  - forbidden for applications that do not require it.
  - activable for applications that need movimentation (i.e. for OFF-LINE, STATISTICS, METROSPLINE, METROPATCH) .
4. For CNC CATRIM possibility of hardware diagnostics and of initial reset procedure without switching out electrical feeding.
5. A more complete file management, and particulary :
  - the possibility of inserting files in more than one directory
  - the new options COPY, ERASE and RENAME .

# 1. PROGRAMS INSTALLATION

## 1.1. APPLICATIONS MANAGER INSTALLATION

Installation procedure of *Applications Manager* :

1. Insert the disk labeled **SETUP** into the drive (A: or B: )  
Type: **A:SETUP** and press Enter. Installation procedure will start.  
At the beginning of installation procedures messages of the windows will be displayed in Italian language.
2. With Window N. 1 it will be required the path where to install the *Applications Manager*, and where consequently will be inserted almost all the files and applications connected to it.

Window N. 1



Of default it will be proposed path : **C:\180** .

- for confirming it press **OK** key.
- for changing it give a new path and press **OK** key at the end .

If, for example, a preceding version of **MIX** is already installed in directory **C:\180** and it is necessary to maintain it, a new path, for example **C:\180NEW**, must be selected.

Obviously, selecting **Cancel** (**ESC** key), Setup procedure will be stopped.

3. If **OK** key has been previously pressed all the files necessary will be automatically copied.

At the end of this procedure, in cases described in the following a) point, Window N. 2 will be displayed :

Window N. 2



File **NEW.CFG** contains values of various parameters, that will be described at paragraph 4.2. .

- a) The message will be displayed in following cases of SETUP installation :
- first installation
  - new installation in a directory different from the original (C:\180).
  - new installation in th original (C:\180) directory, but in case of and old (with number lower than 16) release of MIX .

In these cases **OK** key must be pressed , but after it will be necessary to assign desired values of parameters as indicated at point N. 4 of this paragraph.

- b) The message will not be displayed if, during installation, File NEW.CFG will be found and the File will not be changed .

4. It will be displayed the Window N. 3:

Window N. 3



If necessary, i.e. in case of point 3.a), *Applications Manager* could be setted.as indicated at paragraph 4.2.

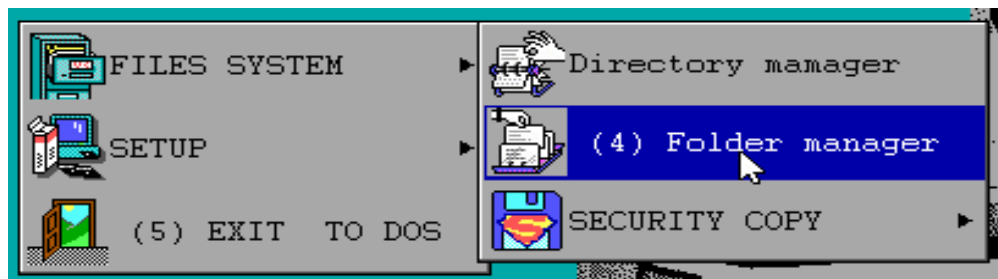
From this moment it is possible to have phrases in windows in English language (see paragraph 4.2.1. ).

5. After MENU configuration it will be displayed the Window N. 6, with which applications (programs) can be installed following procedure of paragraph 1.2. of next page .

If, with window N. 6 displayed, **ESC** key will be pressed, none application will be installed and program will come back to DOS.

At this point, writing “MIX” and pressing **RETURN** key, will be displayed Window 4, where are listed only Utility options and none Application .

Window N. 4

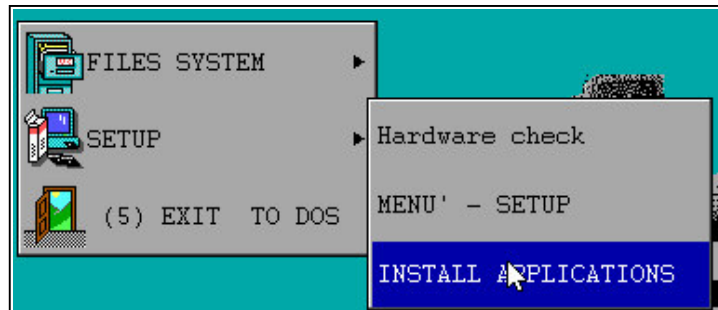


6. In case of a CATRIM CNC it is necessary insert in the File AUTOEXEC.BAT the command "MIX AZZERA". If in the File AUTOEXEC.BAT it would be inserted the command "AZZERA .... " it is necessary cancel it.

## 1.2. APPLICATIONS INSTALLATION

At the end of the installation of the *Applications Manager* or selecting the option " Install Applications " of the Window N. 5 .

Window N. 5

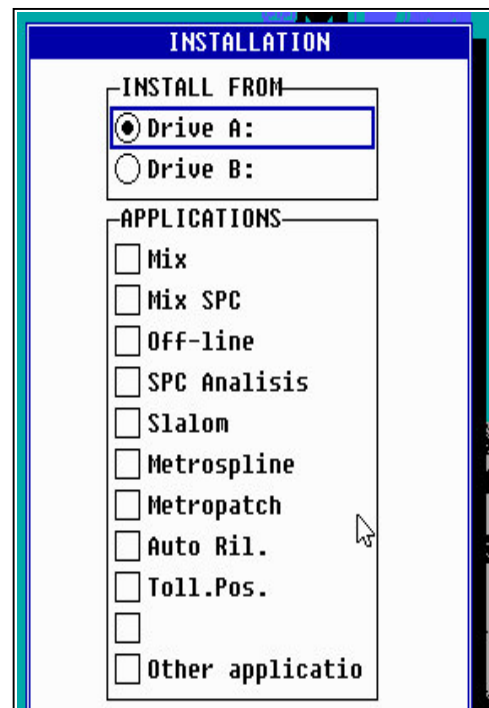


it will be displayed Window N. 6.

Window N. 6

The procedures for installing one or more application are the following:

1. Select the drive from which install the application (A: or B:).
2. Select through ARROW keys the box of every application to be installed, and activate it (box with cross) with ENTER or SPACE key.
3. Confirm with the ESC key.
4. Insert the requested diskette and confirm with ENTER or SPACE key.
5. For some program is required the installation directory, therefore must be given an answer to this question and go on.
6. Wait for the end of the installation and, if requested, configure the application.
7. In case of selection for installation of more than one program, at the end of every installation it will come back to point N. 4.



At the end of the installation in the menu will be available the new options and the new installed program.

## 2. USE OF THE MAIN MENU

The use of the main menu of start is very simple and immediate.

It is possible move in the menu using the Mouse or the Keyboard; therefore we have two cases.

### 2.1. SELECTION THROUGH MOUSE

If the Mouse is activated, after program loading it will appear an arrow that we will call “**cursor**”.

Moving the cursor on the menu the label under the cursor will change colour (from grey it become blue); the correspondent option is actually activated.

If a label has a small arrow on the right of the writing, it means that this has a submenu.

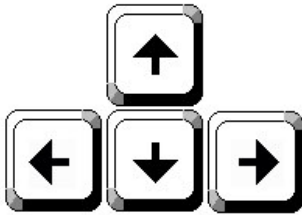
Moving the cursor on this option, it automatically opens the submenu with all his options, and obviously, going with the cursor above these, they too twill be activated.

For running a selected application or utility, it is sufficient push anyone button of the mouse.

### 2.2. SELECTION THROUGH KEYBOARD

As for the mouse, the label activated has a blue contour and a grey writing.

Using the keys cursor it is possible move and activate the different options.



As for the mouse, if a label has a small arrow on the right of the writing, it automatically opens the submenu.

Using the right arrow it is entered this submenu and these applications or utilities may be performed.

For running the execution it is sufficient to push the RETURN key on the active option.

Some options have a number between parenthesis on the left of the writing.

This means that this option has the key of rapid choice, for starting the execution of that option; it is enough to push this number (i.e. for coming back to DOS, key 5 must be pressed).

### 3. SELECTION TYPE MENU

The selection type menu are very used in *Applications Manager* and is therefore necessary explain their operation modality.

These menu may be classified in two different categories depending on the type of selector that points out their activation or their non-activation.

#### 1. Single selection menu :

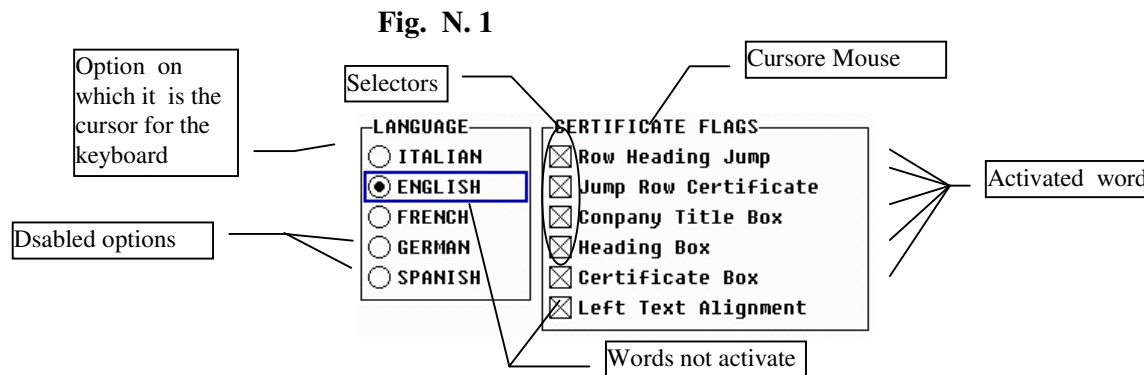
Is the menu in which only one option at a time could be active (ex. the selection of a language),. For this menu the selector is :

- a circle with a black little ball in the center for point out that it is active
- an empty circle for the contrary.

#### 2. Multiple selection menu :

Is the menu in which each single item could be active or not-active, independently from the others (i.e.. the CERTIFIED FLAG), that' s why menu the selector is a square with a X for point out that it is active and an empty square for the contrary.

For both the types of menu it could happen that some options are written in grey instead that in black; this means that this option cannot not be activated, it is a disabled option (i.e. a language that has not yet been translated).



#### 3.1. MENU SELECTION THROUGH MOUSE

For activating an option in the single selection menu, must be “clicked” the corrispondent label on the selector : automatically will be disabled the option that before was active.

For enabling or disabling an option in the multiple selection menu, must be “clicked” the corrispondent label and the label will be reversed (if the option was enabled it will be disabled and vice versa).

For both the types of menu, “clicking” on the label of the option, the Cursor will be put on it.

#### 3.2. MENU SELECTION THROUGH KEYBOARD

Using the cursor keys it is possible to move inside different menu, and change menu.

- **Arrow on** enables the cursor keyboard to go **Up** .
- **Arrow down** enables the cursor keyboard to go **Down**.
- **Arrow right** or **TAB** selects next menu.
- **Arrow left** or **SHIFT +TAB** selects preceding menu.

For activating an option in the single selection menu, it is sufficient to push **ENTER** or **SPACE** keys when the cursor keyboard is positioned on the selected option and automatically will be disabled the option that before was enabled.

For enabling or disabling an option in the multiple selection menu, it is sufficient to push **ENTER** or **SPACE** keys when the cursor keyboard is positioned on the correspondent label and the label will be reversed (if the option was enabled it will be disabled and vice versa).

## 4. CONFIGURATION APPLICATIONS

### 4.1. GENERALITY

Most MetroSoft applications require some parameters Setup.

For these parameters it is necessary to provide a configuration.

For the configuration of an application will be displayed a Window entitled "SETUP."

In this Window there are different *Selection Menu*, with which are setted the desired parameters : these menus are used friendly, as explained in the **CHAPTER N. 3**.

In every application's Setup is available a menu for the selection of the desired language.

If one of these languages is written in grey, the language is not in that moment available and cannot obviously be selected.

### 4.2. APPLICATIONS MANAGER SETUP

Let us describe how to configure the *Applications Manager*.

#### 4.2.1. LANGUAGE

The desired language is chosen, as before explained, with a Selection Menu.

#### 4.2.2. HEADING

It is possible select two different headings that will then be used in the printings of different MetroSoft programs, i.e. MIX (see MIX USER'S GUIDE on page 67).

The heading with the active selector is obviously the one selected.

Pushing the F1 key (SETUP) it is possible to set inside these parameters :

- type of printing
- colour background of the *Logo* (in case is installed a colour printer)
- colour of the first layer of the *Logo* (in case is installed a colour printer)
- name of the file for the *Heading*.

For defining this name it is necessary to push the F1 key (CHANGE) inside the window "HEAD SETUP"

- name of the file for the *Logo* company.

For defining this name it is necessary push the F2 key (CHANGE) inside the window "HEAD SETUP"

For both *file names* (of *Heading* and of *Logo*), another Window NAMED FILE INT will be opened where all the Headings and Logos are visualized; by selecting one of these and pushing ENTER key it is possible to assign them to the definite heading.

Pushing ESC will be displayed a Window for the substitution or addition of labels of the Certificate heading. It is possible to select Addition menu from Substitution menu by pushing the TAB key or SHIFT+ TAB.

Pushing ESC again it will be displayed again the Window of the SETUP of the *Manager Applications*.

### 4.2.3. AXIS CONTROL

With this configuration is possible to select the type of machine's movement :

1. MANUAL
2. INDEX 3AX, with movement of axis motorized & controlled by CNC board
3. GALIL, with movement of axis motorized & controlled by CNC GALIL type board (still in development)

In case that *Applications Manager* is installed on a computer not connected to the machine it is necessary to select the MANUAL option, otherwise some problem will be verified.

In case N. 2 it is necessary to select the INDEX 3AX option and after, pushing the F2 key (SETUP), it is possible to setup parameters for the numerical control.

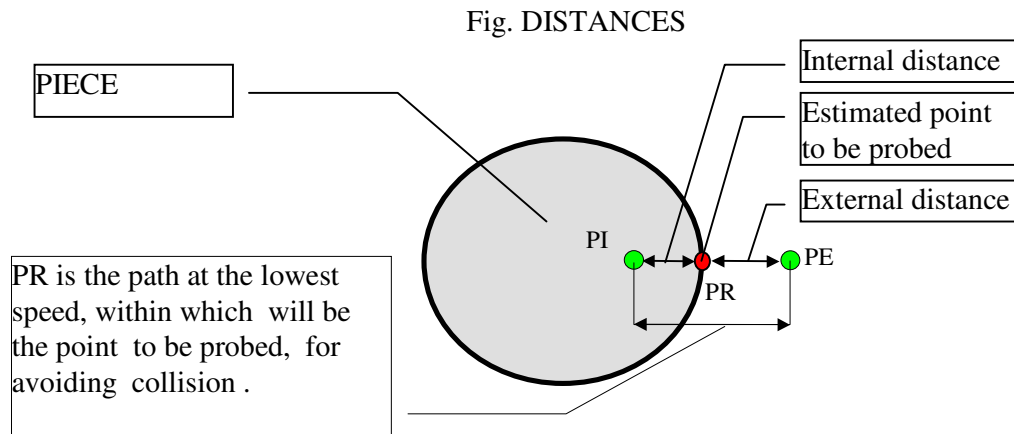
It will be displayed window "CNC- SETUP" with the following options :

- PROBE JUNCTION
  - The program points out the type of connection for the head, that could be:
    - ⇒ 5 Ways Block ; original of the MDM Mecatronics
    - ⇒ PH9/PH10 Renishaw rotary head
- BAUD RATE CNC
  - Speed of transmission of series between the Computer and the Numerical Control
- OPTION
  - ⇒ **Disable TL1**
    - If this option is activated :
      - the *Applications Manager*, coming back to main menu, will cause TL1 falling down and, consequently, air feed to the machine will be taken off; so is assured a good operation of the Numerical Control.
      - Going back to DOS and loading again the *Applications Manager*, zero resetting will be done again (Cap. 5.2.).
    - If this option is deactivated :
      - TL1 will be always enabled, it will be therefore possible move the machine through Jog in any-one moment, while the procedure of zero resetting will be performed only once after having switching the machine.
      - This condition could be dangerous using programs not supplied from MDM Metrosoft, as WINDOWS, NETS MANAGERS, etc. since they could interfere with the Numerical Control of the machine.
    - ⇒ **Release Axis**; this option may be used if the machine is equipped with mechanical axis release, that will allow movements like manual machine.
    - ⇒ **Rotary Axis**; if activated it points out that the machine is equipped with rotary table (application still in development).
  - **Speed Min.** (mm/min.)
    - Setup of speed towards a probing point.
  - **Speed Max.** (mm/min.)
    - Maximum speedness allowed to the machine in the interpolation between two points of path .
  - **Ext. Dist.** ( $\mu$ )
    - Distance to which MIX sets the PE point in respect of PR (See Fig. DISTANCES), if the operator sets the **Path point** before the **Probed point** at an inferior distance, MIX will consider the **Path point** as PE (holes with radius to inferior Ext. Dis.)
  - **Int. Dist.** ( $\mu$ )
    - Distance to which MIX sets the PI point in respect of PR (See Fig. DISTANCES)



- **TDVSTOP**

Parameter for the setup of deceleration ramp after the probed point during automatic movement



### 4.3. MIX SETUP

Let us see now particularly MIX SETUP.

#### 4.3.1. LANGUAGE

With the procedure described for the Selection menu, desired language may be chosen.

#### 4.3.2. CERTIFICATE FLAG

- Row heading jump  
Enables the jump of a row inside the heading board.
- Row certificate jump  
Enables the jump of a row, between two measurements, inside the certificate.
- Company title box  
Enables the printing of a box around Company title
- Certificate Box  
Enables the printing of a box around all the measurements of the certificate
- Left text alignment  
Enables the alignment to left hand of the measurement descriptions.

#### 4.3.3. PAGE JUMP

It points out the number of printed rows after which MIX sends the printing a jump of page. 0 points out that this option is disabled.

#### 4.3.4. LOOP TC2 ON

Setting parameter that fixes, after a probed point, the time to enable again the head. This time avoids, leaving the piece, to acquire not desired points, caused from the rebound of the electric contact. Higher is the number of the parameter, higher is the time.

## 5. DIAGNOSTICS & AXIS RESET PROCEDURE

### 5.1. DIAGNOSTIC WINDOWS

This option has been introduced for verifying possible hardware & software problems.

Diagnostics is composed of :

1. Window TEST CMM AXES CONTROL
2. Window CNC

In case of manual machine will be displayed Window N. 1 .

In case of CNC machine will be displayed Window N. 1 & Window N. 2.

#### 5.1.1 Window TEST CMM AXES CONTROL

On the left hand will be displayed :

- Menu of selection head:
  - Probe** ( 1..5) : it activates the correspondent Probe
  - Disable** : it disables all the Probes

On the right hand will be displayed

- **X,Y,Z** : it displays the X, Y, Z coordinates of Catrim axis boards.
- **Trigger** : it visualizes the state of the counter
  - ⇒ Red : axis count frozen
  - ⇒ Green : axis cunt in real time
- **Probe Status** : it displays the status of the probe contact
  - ⇒ Red : probe contact opened (probe deflected)
  - ⇒ Green : probe contact closed
- **Reset Axis** : it visualizes if counters have been resetted
  - ⇒ Red : counters not resetted (see Cap 5.2).
  - ⇒ Green : counters resetted.

#### 5.1.2. Window CNC

On the left hand will be displayed :

- Driver Alarm
- Air supply Alarm
- Path point push button
- Main Contactor
- Limit switch axes
- Emergency red push button
- CMM axis enable

On the right hand will be displayed :

- **X,Y,Z** : it displays the X, Y, Z coordinates of the Numerical Control.
- **OV** : OVERRIDE parameter (speed in JOG in percent)
- F1=UPDATE: it refreshes the quotas visualized with those actual
- F2=HOME: it performs procedure of automatic zero resetting (see Cap.5.2.2)

(For further information consult the CATRIM CNC USER'S GUIDE )

## 5.2. RESET PROCEDURE

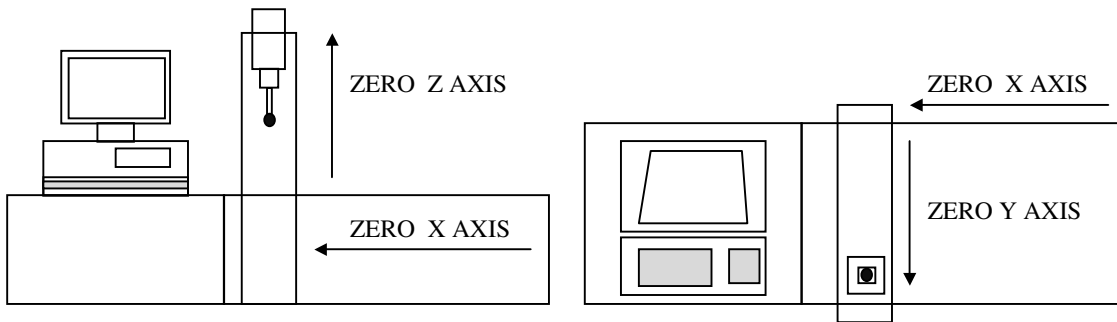
After having switched on CATRIM (either Manual or CNC), it is necessary to reset axes counters.

The procedures are different for Manual and for CNC CATRIM.

### 5.2.1. MANUAL CATRIM RESET

The axis X, Y, Z of the machine must be manually driven in proximity of the 0 machine ( see ZERO Fig.) and the "RESET AXIS" button must be pushed.

Fig. ZERO



### 5.2.2. CNC CATRIM RESET

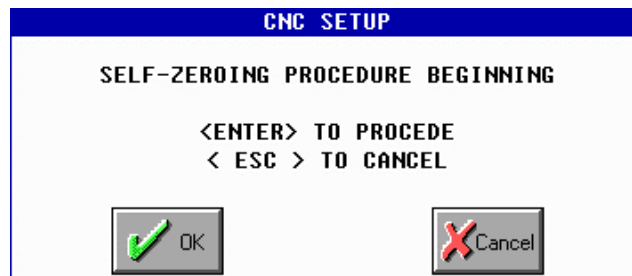
After boots computer procedure it is programmed an automatic reset sequence, with these steps :

Wait the end of the procedure of reset hardware of the file cards axis.



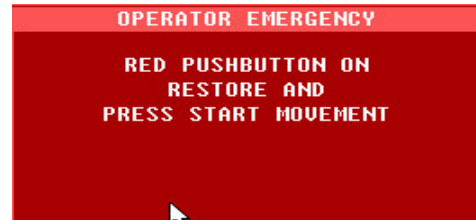
If the operator wants to go on with reset sequence, he must choose OK, otherwise Cancel.

In this last case cannot be used all the programs that require CATRIM movement.



## Window N. 9

In the case EMERGENCY red button has been pushed, will be displayed this window.  
Follow the indications and unlock the button.



## Window N. 10

If START button has not been pushed, compressed air is not supplied, and will be displayed Window N. 10.  
Push START button (see CATRIM CNC USER'S GUIDE)



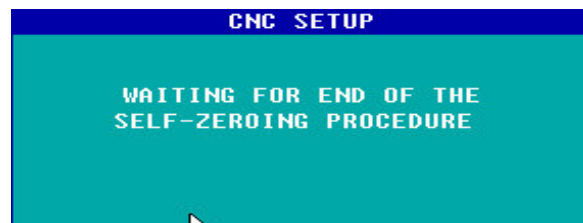
## Window N. 11

It is requested to move manually (by joy-stick) the axes in safety position.  
To gain time it is better to drive, through Joy-stick, axes in proximity of the ZERO Machine (see Fig. ZERO).  
With ESC command automatic Zero procedure will be performed.



## Window N. 12

After this procedure compressed air feed will be interrupted and will be displayed root menu, through which MDM programs will be available.



## 6. FILE SYSTEM

*Applications Manager* is structured with a Files management that is divided in :

- Index management
- Cards management
- Safety Copies

With these tools it is possible to catalogue better programs and data measured through MIX and through other applications.

### 6.1. INDEX MANAGEMENT

Using the option of the Menu *Index management* it will be displayed a window divided in two parts : Index Name and correspondent Index Directory.

#### 6.1.1. INDEX NAME

Any title may be assigned to Index Name, so that it is possible to remember what it contains (i.e. "Check pipes program" for the cards containing pipes control).

This Name will appear in Index List of the option *Cards Management*.

#### 6.1.2. INDEX DIRECTORY

In the Index Directory must be assigned the drive and the **Path** (ex. C:\PIPES) correspondent to the label Index Name.

If it in this field is inserted :

- the root Directory (ex. C:\ or D:\)
- a not valid Directory (ex. C:\\PIPES)
- a Direcorey already present in this window

in case of exit it will be displayed an error message.

If it is assigned a not existing Directory it will not be displayed any error : this Directory will be created from *Cards Management*.

The Index Name MAIN and the correspondent Index Directory assigned with Setup procedure of the *Applications Manager* is always present and not modifiable.

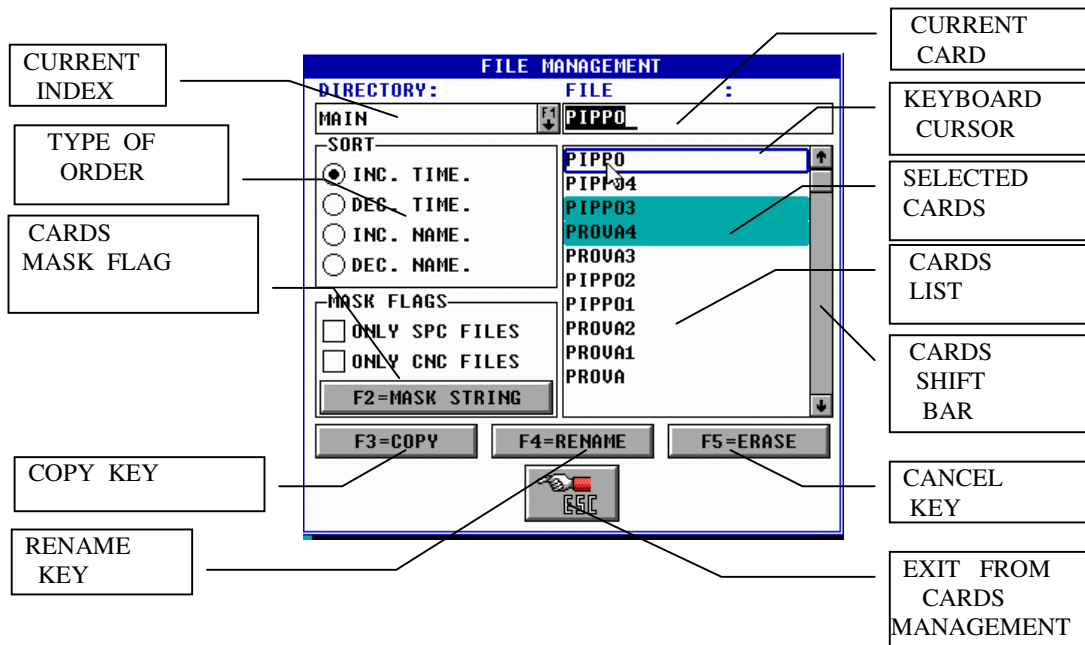
### 6.2. CARDS MANAGEMENT

The cards are, pratically, collectors containing all the components (as Autolearning procedure, CNC path, Statistics data, Positional tolerances) of the same series of measurements.

Let us analyze how to use the *Cards Management* Window.

This window contains :

- Current Index
- Current Card
- Cards list
- Type of order
- Mask system
- Commands



### 6.2.1 CURRENT INDEX

It points out the Index where are contained the Cards present in the list. Pushing F1 Index list will be available and desired Index may be selected. N.B. If it is necessary a new Index may be created with option *Index management*.

### 6.2.2. CURRENT CARD

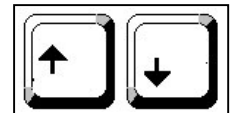
It points out the Card on which the cursor is positioned.

### 6.2.3. CARDS LIST

It visualizes the list of all the Cards of the selected Index.

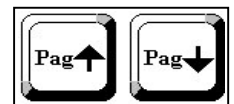
It is possible move inside the list :

- with keyboard using Arrow Up and Arrow Down keys
- with mouse, “clicking” Arrow Up and Arrow Down keys
- with mouse, “clicking” the arrows of the bar of slide



If there are many Cards it is possible scroll many Cards :

- with keyboard by using the PageUP and PageDown keys
- with mouse using the speed command of the bar of slide



With Enter key is possible to select the current Card and position on the next one. The Cards selected have a blue instead of white background.

### 6.2.4. TYPE OF ORDER

It is possible to select the order of Cards visualization.

The procedure of use is that one of an ordinary Menu to single selection (see Cap.3.).

### 6.2.5. MASK FLAG SYSTEM

In case of many Cards or in case that there is interest for only a type of Card, it is possible to use a mask of filtration.

The menu is used as the usual multiple selection menu, that can visualize :

- only the Cards with a CNC path
- only the Cards with Statistic
- only the Cards containing both preceding Cards.

Pushing the button F2= MASK STRING it is possible to type a Mask String (in the area dedicated to the current Card),so that may be visualized only the Cards that contain this string (see Example).

**EXAMPLE OF MASK STRING**

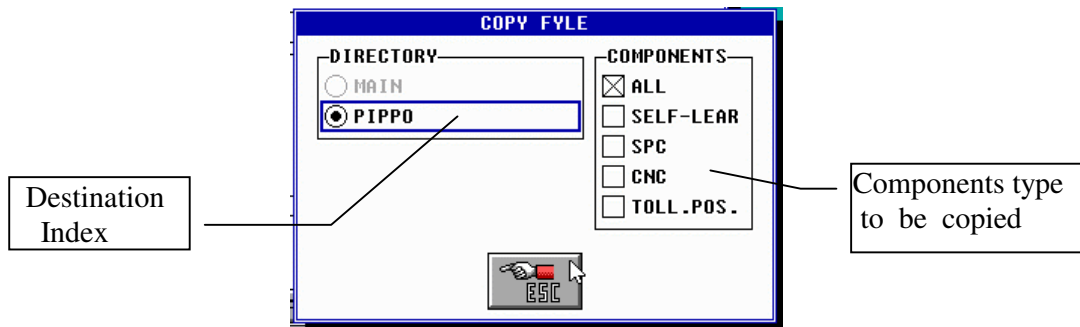
COMPLETE LIST	MASK STRING = "PO"	MASK STRING="IN"
PIPPO PLUTO PAPERINO TOPOLINO MINNI	PIPPO TOPOLINO	PAPERINO TOPOLINO MINNI

**6.2.6. COMMANDS**

This three commands are available :

1. F3=COPY

It copies a Card selected in current Index into another destination Index.  
The window asks in which Index and what components must be copied.



It is not possible to copy a Card into the same current Index; therefore this index is automatically disabled for this operation.

For aborting the command it is sufficient not to have activated components and push ESC to continue.

2. F4=RENAME

It changes the name of the selected Cards.

With this window it is asked the new name for every selected Card.



### 3. F5=ERASE

It permits to erase one of the components of the selected Card or all the Card.

For every single Card it will be displayed a window with which will required what must be erased.



For abort the operation, as for the copy, it is sufficient not to select anyone component and push ESC key for continuing.

N.B. If, instead of erasing the Card, are erased all the components one at one, the Card will remain in the Index, but will be empty, this fact could cause confusion.

In other situations could be displayed Windows very similar to that of the Cards Management. For these Windows may be done the same considerations, even if the application is different (i.e. when MIX performs a program of auto learning it will be displayed a Window similar to the Card Management Window, with which program to perform is chosen.)

## 6.3. SAFETY COPY

### 6.3.1. BACKUP

Safety copy of an Index may be done. This copy avoids to lose Index Cards in case of hard Disk problems.

The procedure anticipates how many diskettes are necessary and after these diskettes, will be requested one by one pointing out which label assign to them (First diskette label N. 1, second diskette label N. 2, ..., last diskette label "Index").

N.B. For this operation is very important use diskettes of very good quality and well formatted.

### 6.3.2. RESTORE

If a safety copy has been done with this option it is obviously possible to Restore saved data. The procedure requires first of all the diskette labeled "Index," and after, on the contrary of the backup, it is possible select only a part of the archive with the identical modalities to the copy of the files, after of that it requires the different diskettes requested for the BACKUP.

**Note :** In consideration of the importance of backup operation it is recommended :

1. To make Backup periodically
2. To use diskettes of good quality