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1 INTRODUCTION

This program was written and compiled using Borland Turbo C1 V2.01. The interface program is designed to run on IBM PC XT/AT and PS/22 or greater and most compatibles; running on DOS version 3.0 or greater. The following files must be present in the disk provided by Panametrics:

1. PANAMETR.EXE
2. PANAMETR.FOR
3. PANAMETR.HLP
4. INSTALL.BAT
5. TRIP.CHR
6. ATT.BGI
7. CGA.BGI
8. EGAVGA.BGI
9. IBM8514.BGI
10. PC3270.BGI
11. HERC.BGI
12. BRUN30.EXE
13. PANMETR.EXE

Note: Some Hercules graphics cards will **NOT** work properly with this program.

The following is an explanation of the notation used in this manual.

When a command needs to be entered via the keyboard, an instruction will state "Type 'command'". For example: Type "PANAMETR" tells the user to enter the word PANAMETR. Capital letters are not necessary, unless otherwise stated. [KEYNAME] refers to a specific key on the computer keyboard. For example: [ESC] for the ESC key.

PC-AT refers to IBM PC-AT and compatibles
PC-XT refers to IBM PC-XT and compatibles

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2 INSTALLATION

2.1 To install the interface program on a hard drive

1. If the directory does not exist, create it. For example:

   The program is to be installed onto:

   X:\INTERFAC, where X = C, D, E, or F (your hard drive letter)

   a. Type "X:" to make that drive the active drive.

   b. Type "MD INTERFAC" [ENTER]

2. Type "X:", where X=C, D, E or F (your desired hard drive).

3. Type "CD INTERFAC" [ENTER] to enter the INTERFAC directory.

4. Type "A:" or "B:" depending on which drive your floppy containing the Interface Program resides.

5. Type "INSTALL X" where X=C, D, E or F.

2.2 To Install The Interface Program on a Floppy Disk

From A to B:

1. Insert a formatted disk in drive B.

2. Insert the interface program disk in drive A and type "A:" to change the working disk/directory to drive A.

3. Install the program by typing "INSTALL B", or

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3 HARDWARE SET-UP

1. Take the appropriate RS232 cable for PC-AT (9-Pin Female), PC-XT (25-Pin Male "D") or IBM PS/2 (25-Pin Female "D").

2. Attach cable to serial comm port 1 or serial comm port 2, of the PC.

3. Connect the modular telephone style jack of the above cable to the slot in the bottom right of the Model 26DL or Model 22DL gage.

   or

   Connect the 25-Pin Female "D" connector to the back of the Magna-Mike.

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4 GAGE SET-UP

The default communication parameters for the 22DL, 26DL and the Magna-Mike 8000 are:

Baud Rate = 1200
Word Length = 7
Number of Stop Bits = 2
Parity = N

These parameters are set at the factory, and can be restored simply, if changes were made.

To restore the default parameters for:

- The 26DL -- enter the SP-4 mode and press key 2 (numeric 2). (See section 4.14 of the 26DL Manual.)
- The Magna-Mike -- enter the SP-4 mode and press key 1 (numeric 1). (See section 5.2 of the Magna Mike 8000 Manual.)
- The 22DL -- each parameter must be changed manually.(See Appendix VII of the 22DL Manual.)

To view or change individual communication parameters for:

- The 26DL use the SP-2 mode. (See section 5.3 of the 26DL Manual.)
- The Magna-Mike use the SP-3 mode. (See section 5.2 of the Magna-Mike 8000 Manual.)
- The 22DL use the SP-2 mode. (See Appendix VII of the 22DL Manual.)

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5 SQC USERS START UP

If you do NOT intend on using this program through SQC then skip to the OPERATION section of this manual.

1. Make the directory in which your SQC is installed your current directory.
2. Invoke SQC by typing "SQC" and press [ENTER] at the prompt.
3. Insure that your SQC configuration is correct. Press [F2] to enter the SQC "Master" Menu.
4. Press [F7] to enter "Data Collectors" Menu.
5. Press [F2] to get to the "Interface Alliance Partners" section of the "Data Collectors" menu.
6. Press [F4] to start the Panametrics Interface Program.
7. Start at Step (C) of the "Operation" section, and continue on.

To convert data manually into the SQC format, please refer to the supplemental SQC instructions packet.

> Note: The program must be on the same directory as SQC.

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6 OPERATION

1. On the PC, enter the directory to which you installed the interface program.

2. At the prompt type "PANAMETR" and press [ENTER].

3. The Panametrics logo will appear. Press any key, and the Main Menu will appear.

4. Select option by moving the highlight bar with the arrow keys and pressing [ENTER]. You can also select an option by pressing the letter corresponding to that option (i.e. [H] for Help).

6.1 COLLECTING DATA

1. Make sure the communication parameters are the same for the gage and the PC. See GAGE SET-UP.

2. To view/change Communication parameters on the PC:

   Select the "Device" option from the "Program Options" menu. The "Device Options" menu should appear.

   Select your gage. Magna-Mike users don't have this option. Select the "Communications Set-Up" option. The following screen should appear:

```
Following parameters MUST be the SAME on the gage

Baud Rate:                                          1200
Parity (N/O/E):
Word Length:
Nos. of stop bits:
Serial Port com1/com2 [1/2]:

Choose from 150,300,600,1200,2400,4800,9600 <ENTER> to accept
```


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Note: For the Magna-Mike the "Device Options" menu does not exist. Choosing "Device" will lead directly to the "Gage Operation Options" menu.

Select the "Data Collection" option. The next screen should be the following:

```
Enter filename to receive data:



Enter filename '.TXT' not needed. <ENTER> to accept.
```

Enter a filename to which the data will be stored. The filename can not be greater than 8 alphanumeric characters long. No directory or drive prefix may be added. The file will exist on the current directory. The extension should not be included, the program will automatically add the ".TXT" extension.

Echoing to the screen allows you to see the data as it is being sent by the gage.

Note: At Baud rates above 4800 bits/sec, if spurious characters are seen in the received data stream, it is recommended that the user acquire the data again by setting the parameter CHARACTERS ECHOED TO SCREEN to No (N).

```
                SERIAL PORT ERROR

1.  Switch gage ON if it is OFF.
2.  Check cable connections between PC and GAGE.
3.  Ensure cable is in proper comm port on PC.

Retry by hitting SPACE BAR.  Any other key to quit.
```


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6.2 REMOTE GAGE SET-UP

Remote gage set-up allows the user to enter calibration/set up parameters via the keyboard of the PC. The values are stored in a text file. Thus, multiple gages can be set with the same parameters.

1. Follow the instructions for collecting data up to and including in selecting the "Device" in Part 3.

2. Select "Remote Gage Set-up" from the "Gage Operation Options" Menu.

3. The first screen is a list of set-up files (".SU"), if any exist; and a request for a filename.

```
Listing of setup files:

NAOMI.SU        NOV.SU        DEC.SU        TAILOR.SU
PIPES.SU        STEEL.SU      ALUM.SU


              Turn gage on and put it in MEAS mode.
Filename:
File to stored or download setup parameters. <ENTER> to accept.
```

Enter a filename, from a list of existing files or a new filename no more than 8 alphanumeric characters long. Do NOT include drive path or directory. Do NOT include an extension. The program will automatically put .SU at the end of the filename. If a previously created file is selected, the program will automatically send that file to the gage, and the file will be printed on the screen. Step 4 will be bypassed.

4. Enter desired values and press [ENTER]. Just pressing [ENTER] sends 0000, except for Velocity. A value must be entered for Velocity. The high and low alarm values are available on the 26DL only. The Velocity and Diff values are not available for the Magna-Mike 8000.

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2. Select a File Option.

- **READ** to view a file.
- **PRINT** to send a file to printer. Insure that the printer is ON and that everything is properly connected.
- **FILTER** to eliminate all information, from a standard file, except thicknesses and units. The new file has ".PXT" for its extention. See section 6.3.1 for more information.
- **LOTUS** to convert a file to ".PRN" to enable it to be imported into Lotus using the following command sequence in Lotus 1-2-3:

  "\" To enter Lotus command line
  "F" Files option
  "I" Import option
  "N" Numbers
  Enter a filename at the filename prompt. Lotus will default to its own directory (i.e. C:\Lotus*.PRN). change the path if the desired filename is NOT in the Lotus directory. For example:

  1. ...filename: C:\Lotus*.PRN. Press the [ESC] key twice to clear the prompt.
  2. ...filename: ___. Enter the desired path, C:\Interfac*.PRN
  3. ...filename: C:\Interfac*.PRN. Press [ENTER] to accept and select the desired file.

- **SQC** to convert a file to ".DIM" to enable it to be read by SQC Pack.4
- **DELETE** to remove a file.

3. After an option is chosen the following menu appears:

```
r                File Lists
 T   Text files (.TXT)
 F   Filtered text files (.PRT)
 L   Lotus converted files (.PRN)
 L   Lotus Conversion
 S   Set Up files (.SU)
 B   Back to File options menu
```

Select by letter or move via arrow keys and pressing <ENTER>.

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"	","Thickness"
000,001",	0.0620
000,002",	0.0950
000,003",	0.0670
000,004",	0.0950
000,005",	0.0960
000,006",	0.0700
000,007",	0.0000
000,008",	0.0650
000,009",	0.0650
000,010",	0.0650
000,011",	0.0850
000,012",	0.0000
000,013",	0.0940
000,014",	0.0940
000,015",	0.3470
000,016",	0.3490
000,017",	0.3490
000,018",	0.3070
000,019",	0.3070
000,020",	0.0220
000,021",	0.0220
000,022",	0.2130
000,023",	0.0640

"	","000",	"001",	"003"
"0",	0.0000,	0.0000,	0.0000,
"1",	0.0000,	0.0000,	0.0000,
"2",	0.0950,	0.7360,	0.0000,
"3",	0.0670,	0.2940,	0.0000,
"4",	0.0950,	0.1460,	0.0000,
"5",	0.0960,	0.1460,	0.0000,
"6",	0.0700,	0.1460,	0.0000,
"7",	0.0000,	0.0470,	0.0000,
"8",	0.0650,	0.0470,	0.0000,
"9",	0.0650,	0.1040,	0.0000,
"10",	0.0650,	0.1040,	0.0000,
"11",	0.0850,	0.0000,	0.0000,
"12",	0.0000,	0.0000,	0.0000,
"13",	0.0940,	0.0000,	0.0000,
"14",	0.0940,	0.0000,	0.0000,
"15",	0.3470,	0.0000,	0.0000,
"16",	0.3470,	0.0000,	0.0000,
"17",	0.3490,	0.0000,	0.0000,
"18",	0.3070,	0.0000,	0.0000,
"19",	0.3070,	0.0000,	0.0000,
"20",	0.0220,	0.0000,	0.0000,
"21",	0.0220,	0.0000,	0.0000,
"22",	0.2130,	0.0000,	0.0000,
"23",	0.0640,	0.0000,	0.0000,
"24",	0.0000,	0.0000,	0.0000,

- Lotus Conversion for the Magna-Mike 8000 requests the format in which the ID#'s were configured. A number (1-4) must be entered. The following shows the correlation between the numbers and the moduli:

  1 - XXX_X
  2 - XX_XX
  3 - X_XXX
  4 - _XXXX

  Where X is a digit (0 - 9)

- The SQC conversion asks you to enter the number of observations per sample and the number of digits to the left of the decimal point.

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APPENDIX I - Data Transmission Formats

The following is a brief description of the data transmission formats for the supported gages. (For more information on conversion routines refer to Section 6.3 of this manual.)

22DL

The 22DL can only send data in the standard format (as shown below) which is easily converted.

```
   ID#  THICKNESS  UNITS    FLAGS    SU#
 00001     00.021   IN         M      01
 00002     00.061   IN         M      01
 00003     00.122   IN         M      01
 00004     ------             ML     01
 00005     ------             ML     01
 00006     00.304   IN         M      01
 00007     00.303   IN         M      01
 00008     00.017   IN         M      01
 00009     00.605   IN         M      01
 00010     00.605   IN         M      01
OK
 SU#    VELOCITY    ZERO     DIFF

 01   0.0913 IN/US  0106     00.000 IN
OK
```


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F3:

```
THICKNESS
  +00.048
  +00.148
  +00.147
  +00.148
   LOS
   LOS
  +00.297
  +00.296
  +00.744
  +00.136
```

MAGNA-MIKE

The Magna-Mike 8000 has three data transmission formats. "All Data" Is the standard format; "No Sutbl" sends all but the set-up table; and "Thk Only" sends thickness readings only. "All Data" and "No Sutbl" can be converted using the Lotus or SQC conversion routines. "Thk Only" **cannot** be converted to Lotus or SQC.

All Data

```
   ID#  THICKNESS  UNITS    FLAGS    SU#
 01 01    0.2400    in       --       1
 01 02    0.2400    in       --       1
 01 03    0.2400    in       --       1
 01 04    0.2385    in       --       1
 01 05    0.2400    in       --       1
 02 01    0.2385    in       --       2
 02 02    0.2400    in       --       2
 02 03    0.2385    in       --       2
 02 04    0.2400    in       --       2
 02 05    0.2400    in       --       2

SU#   LO-ALM   HI-ALM   UNITS   PID    BID
 1    0.0000   -.---      in    1       3
 2    0.0010   -.---      in    1       3

OK
```


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APPENDIX III - HELP FILE

FILE:

READ: Prints a chosen file to the screen a page at a time.

PRINT: Sends a file to a line printer.

FILTER: A selected Panametrics data file is stripped of all data except thicknesses and units. This option creates a new file with the extension ".PXT". The gage must do a range send or send all using the standard format.

LOTUS CONVERSION: Converts a Panametrics '.TXT' file into a '.PRN' file for importation to Lotus123 spreadsheets. The gauge must do a range send or send all using the standard format.

SQC CONVERSION: Converts a Panametrics '.TXT' file into a '.DIM' file for use with the SQC Pack. The gauge must do a range send or send all using the standard format.

DELETE: Deletes the selected file.

DEVICE:

22DL: Sets up communications with the series of 22DL thickness gages.

26DL: Sets up communications with the series of 26DL thickness gages.

Magna-Mike: Sets up communications with the Magna-Mike.

REMOTE GAGE SET UP: Here the user is given the opportunity to enter calibration/set up parameters via the keyboard of the PC.

The following parameters:

- velocity value
- diff value
- alarm values (for 26DL only)

can be entered remotely. These values are stored in a text file with a '.SU' extension. These parameters are automatically sent to the gage once they are entered in the PC.

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NON-FATAL ERRORS:

"Can not open PANAMETR.HLP":	The file is not on the current directory. Add file to directory.
"Error opening file...":	Either the file does not exist in the current directory or access to file was denied by DOS.
"Error renaming file...":	This error occurs because a file already exists with that particular name.
"Error deleting file.":	This is a DOS error. The file does not exist or it can not be simply deleted.
"Error creating file...":	This is a DOS error. A file with that name already exists or the directory is full. SQC
"Improper Configuration.":	This error occurs if the program is not on the same directory as SQC or if something is wrong with SQC.
"Cannot Create 'DIM' file.":	This error will appear if there is bad data from the configuration of SQC or an illegal filename was entered.
"Error updating global variables.":	This could occur due to bad data, a bad filename or from a DOS error. The bad data could be caused by a corrupted data file.
"Error closing file.":	This could occur due to bad data, a bad filename or from a DOS error. The bad data could be caused by a corrupted data file.

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