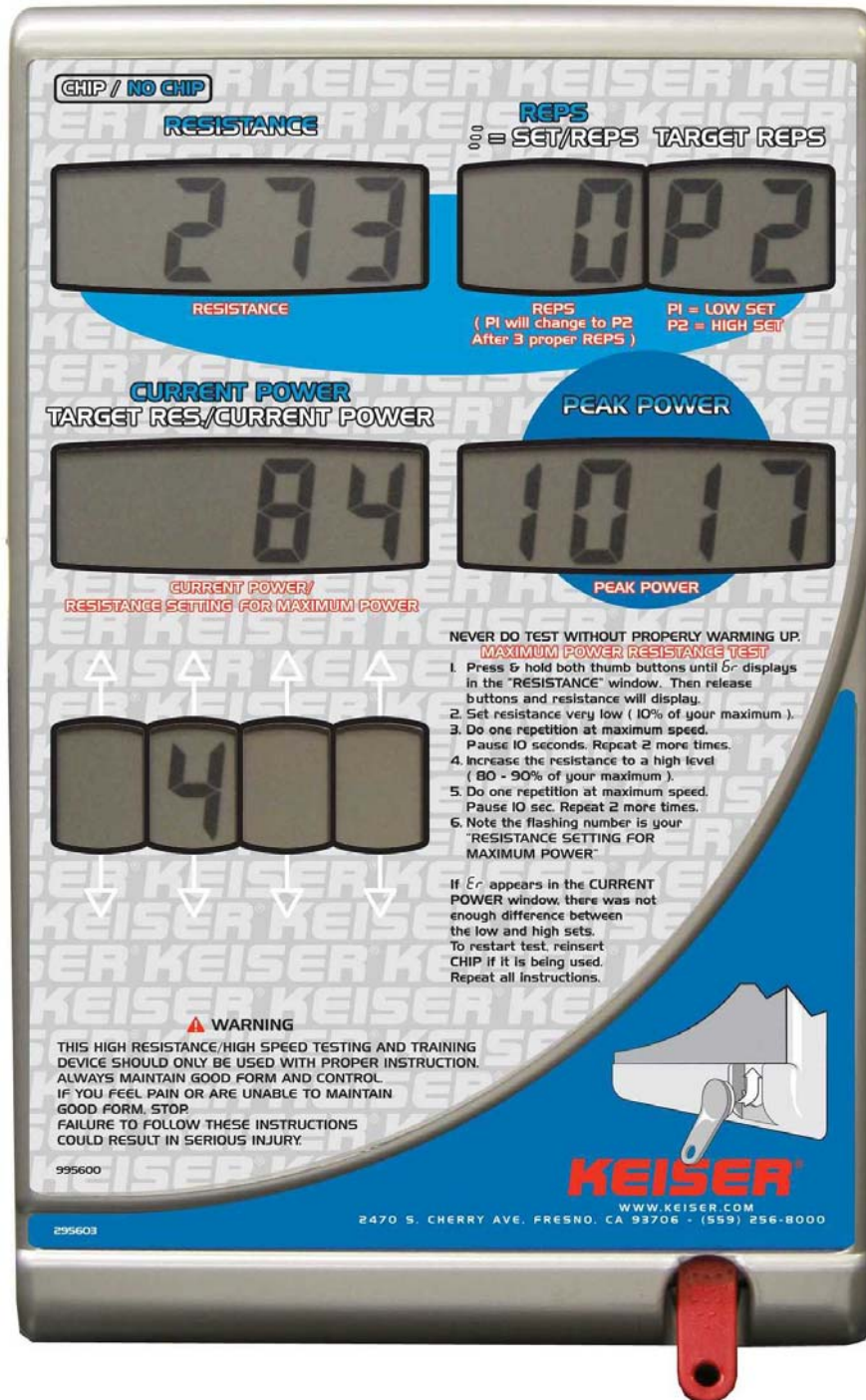


KEISER®

Chip System PC Software

Operation and Installation Manual



Introduction

This manual describes the installation and operation of the PC software, which is provided with the Keiser Chip System. For operation of the Keiser Chip System, see the Keiser Chip System Operation Manual. The Keiser Chip System is designed to be an electronic replacement for a hand written exercise card by storing selected information about a user's recent workouts to be used in setting the exercise machine on the next visit. The PC software detailed in this manual allows the data saved in a user's Chip to be viewed and stored for analysis. The installation and use of this program assumes the operator has mastered basic computer skills with the Windows operating system. The version of the software presented at this time, provides data collected from the key for analysis by the user. This software does not attempt to analyze the collected data. A Microsoft Excel worksheet template is provided as an example of one possible way to deal with the collected data.

Installation

This software is compatible with Windows 95, Windows 98, Windows NT, Windows 2000, and Windows XP. Operation with PC emulators running on other operating systems is not supported. The target PC must have a free serial port or USB port available. When the software is ordered, the end user must select between USB or serial interface for the reader device. If the serial device is selected, the Chip reader dongle needs to be connected to the free serial port before the software installation is started. The software may be provided on a CD rom disk or downloaded from the Internet. In the case of the CD, insert the CD into the CD rom drive on your PC and the setup program will start automatically. If for some reason it does not, browse to the CD with Windows Explorer and start the 'setup.exe' program located at the root level of the CD. If you have downloaded from the Internet, you will get a 'setup.exe' program. Follow the prompts on the screens provided by the install program. If you are replacing or upgrading an existing installation, it is not necessary to install the iButton drivers a second time. Once these steps have been completed, double clicking on the shortcut icon that has just been created will start the Chip System Program. Note to those upgrading from a previous version, data files were stored in a folder named "A420" by previous versions. These files are not moved or altered by the install program. To be able to keep the user database from a previous version, copy "ecardindex.kidx" and the "data" folder from the "A420" folder to the "Echip" folder. Once the new version is installed and operational, the previous version may be removed from the computer by deleting the A420 folder.

Operation

The Keiser Chip System PC software saves the data that is stored in the Chip in text files with a file extension of ".CSV". Any text editor, Microsoft Excel, any other database or spreadsheet program that can interpret comma separated values files can open these files. The files for each user are always named "ChipData.csv" and are stored in a folder with the users name located under the "Data" folder within the "EChip" folder. The first time a Chip is connected to the system, it will prompt for the users name. This name will be used to create the folder in which this users data will be saved. For example if a key is assigned to a user named John Doe, the data from this key will be saved in "C:\A420\Data\John Doe\ChipData.csv", assuming that the software was installed into the default location.

The Keiser Chip System PC software tracks the date and time data is downloaded from a Chip by the Chip serial number. The next time a Chip is inserted into the PC reader, only data newer than the last download date is added to the data file. A Chip may be re-assigned to a different user by selecting the “Manage Users” dropdown menu item or the “Manage Users” ICON on the top of the program window. See Figure 1.

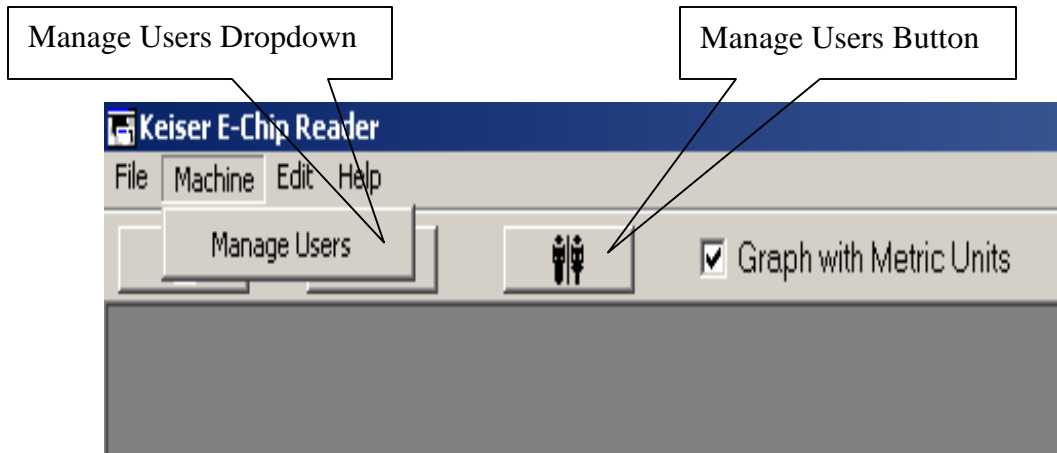


Figure 1

The software will not allow a user name to be assigned to two keys at the same time. If it is necessary to assign a new key to a user, it will be necessary to rename the previous key first. If a key that already has a name assigned to it is connected to the Chip reader when the Manage Users dialog is opened, the key in question will be selected. This feature will make it easier to locate a user in a large list. The user names are alphabetized in this version. Previous versions of the Chip System Software displayed user names in the order in which they were presented to the system. When a Chip is first connected to the system, data newer than the last saved data on the Chip is saved to the data file and the Machine Fixed Data screen will pop open in the center of the screen. (Figure 2)

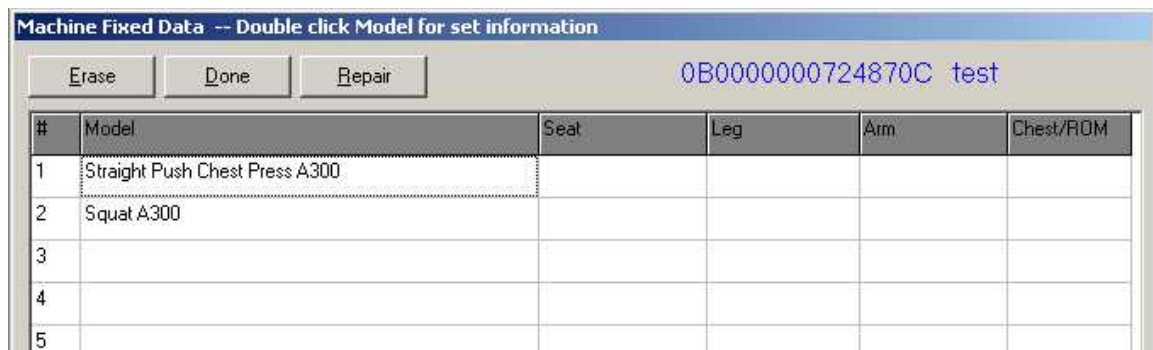


Figure 2

This screen shot was taken with a Chip that has been inserted in two different machines. Neither of these machines has had any seat settings made on either machine. To view the individual set data for a particular model of exercise machine, double click on the machine model row for the machine you wish to view. A new window will open with the data for this machine. (Figure 3)

Set Data																	
Done		Visit Time is 240 minutes												<input type="checkbox"/> Details			
Visit	Set	Date	Time	Resistance	Reps	Model	LPower	LVel	LForce	LPos	UPower	UVel	UForce	UPos	Loc	PeakPwr	Work
1	1	08/31/2005	01:47:03	114 Lb	PwrTst	1335	817	3.169	131.7	0.3807	979	1.874	261.1	0.378	1		
1	2	"	01:54:21	85 Lb	10	1335										984	2344
1	3	"	01:55:57	115 Lb	10	1335										752	2867

Figure 3

The columns of data displayed are as follows:

1. Visit is the visit number this data was collected within. A visit is multiple workouts that occur within a four-hour period.
2. Set is a count of the sets that have occurred on this machine within a four-hour period. The Visit and Set number are computed from the time stored in this Chip for this workout set.
3. Date is the date the workout occurred. Date and time are corrected for time zone properly when the exercise machine software version is Version 4.05 or newer. On older versions, date and time are the date and time the machine is programmed for.
4. Time – see date
5. Resistance. On a normal workout this is the resistance that the machine was set at when the Chip was removed from the machine. When a power test has been done, this is the resistance setting for maximum power that the machine displayed at the end of the test. If an error occurred, such as the resistance or velocity did not change enough between the low resistance reps and the high resistance reps, this window will show Er 1, Er 2 or some similar message to indicate that conditions for a proper power test were not met.
6. Reps shows the number of repetitions that were completed when the Chip was removed. In the case of a power tests, the number of repetitions is meaningless, so the message PwrTst displays. On recent models of exercise machines the user may reset the reps count while the key is in place. If this happens, only those reps that occur after the reset will be counted.
7. Model is the Keiser model number of the machine on which this test was done.
8. LPower is the peak power that the best of the three low resistance repetitions produces.
9. LVel is the velocity that was produced at the point of peak power by the best of the three low resistance repetitions during the test.
10. LForce is the force that existed at the point of the peak power during the best of the three low resistance repetitions.
11. LPos is the range of motion or position at which the peak power for the best of the three low resistance repetitions occurred.
12. UPower is the peak power detected for the best of the three high resistance repetitions.
13. UVel is the velocity that was produced at the point of peak power by the best of the three high resistance repetitions.
14. UForce is the force that existed at the point of the peak power during the best of the three high resistance repetitions.
15. UPos is the range of motion of position at which the peak power for the best of the three high resistance repetitions occurred.

16. Loc or location defines the units of measure for the data in the Force velocity and position columns. It has the following possible meanings:
 - 0 Units of measure are SI units measured at the clevis of the air cylinder.
 - 1 Units of measure are linear SI units measured at the handle. ROM is in Meters, Velocity is in Meters per second, Force is in Newtons.
 - 3 Units of measure are rotary SI units measured at the handle. Rom is in Radians, Velocity is in Radians per second, Force is in Newton-Meters.
 - 5 Units of measure are linear Imperial units measured at the handle. ROM is in Inches, Velocity is in Inches per Second, Force is in Pounds.
 - 7 Units of measure are rotary Imperial units measured at the handle. ROM is in Degrees, Velocity is in Degrees per Second, Force is in Foot-Pounds.
17. PeakPwr is the highest power value achieved while the chip was inserted in the machine in watts. This column will only appear for exercise machines with V7.73 or newer firmware.
18. Work is the work in Joules for all the reps of the exercise. This column will only appear for exercise machines with V7.75 or newer firmware.

When a new key is first inserted into the reader connected to the PC, you will be prompted for a user name to save this user's data by. A Name Assignment Window will open up (Figure 4). The best way to deal with assigning user names to keys is to insert the key into the key reader adapter attached to the PC before using it in a machine. If the key has never been used before, the name assignment window shown in Figure 5 will appear. Once a name is assigned, each time this key is used in any machine connected to this PC in the future, data will be saved in a directory named by this user's name. It is not possible to assign more than one key to the same user name. It is possible to re-assign a key to a different user. To do so, click on the Manage Users button on the toolbar portion of the main screen (Figure 5). If the key you wish to re-assign is connected to the Chip reader dongle when you click on the Assign Users button, the assign users window will open with the key in question highlighted. Double click on the highlighted line or press the enter key to change the name of the user assigned to this key. If you know which user a key is assigned to, you may locate and change the name without attaching the key to the reader. If you intend to use a single key for many users and rename it between each use, be cautious about the capitalization of the name and the number of spaces. We recommend that you erase a key when assigning it to a different user. Failure to do so will result in data from the different users being mixed up in their data files. If a key has been changed to a different user and you wish to change back to an original user, the name needs to be entered exactly the way it was the first time. User names need to be formatted in such a way that Windows may use them as the name of a directory (folder). Punctuation in names is not allowed. The fourth release software now sorts keys by name. Previous versions would leave the list in the order the key was first used. Currently there is no way to delete a key from the list.

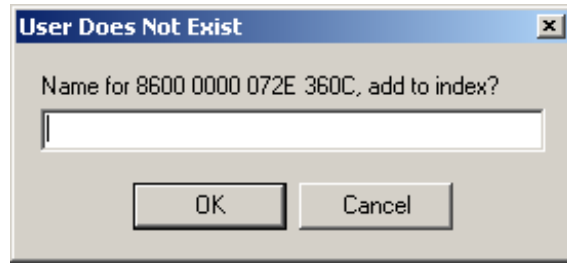


Figure 4

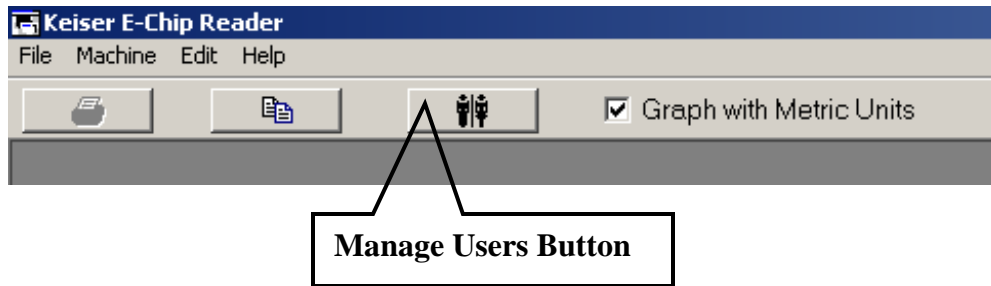


Figure 5

Data File Format

This software package keeps track of the time and date data was last saved for each user (Chip). When a Chip containing saved data is inserted into the reader, the software compares the last saved time with the time of data within the key and saves only that data which is newer to the data file. It then updates the last saved time stamp in its database. It is important to keep the time set correctly on the PC and the exercise machines for this to operate properly. The data file is a comma separated data file, which can be opened by any text editor, many database programs, or any spreadsheet program that understands this common file format. The columns of data in the file are as follows.

- 1 The date as MM/DD/YYYY. The data always saves to this file in this format without regards to local settings within Windows.
- 2 The time the key was removed from the machine as HH:MM:SS where HH is from 0 to 23
- 3 The resistance that was displayed on the machine when the key was removed. If this is a power test, this column displays either the recommended resistance for maximum power or a very large number to indicate that an error in measuring the power has occurred. The error indication will produce a number larger than 65000.
- 4 The number of repetitions that have occurred for this set, or the string "Pr" in the case of a power test.
- 5 The Keiser machine model number
- 6 Seat settings for the first window
- 7 Seat settings for the second window
- 8 Seat settings for the third window
- 9 Seat settings for the fourth window
- 10 The version of the software that saved this data. This is a hexadecimal number saved as an 8 character string

- 11 The exercise machine's electronic serial number as a string. This string contains four groups of four characters. Note that keys that have been used in Keiser A420 machines will not have a valid serial number. The data in this location for those machines has no meaning. Note that A420 machines built in the factory after mid January 2005 will have a valid serial number in this location.
- 12 Low Power in Watts. This is the best peak power detected during the three low resistance repetitions of a power test.
- 13 Low Velocity LVel is the velocity that was produced at the point of peak power by the best of the three low resistance repetitions during the test.
- 14 Low Force is the force that existed at the point of the peak power during the best of the three low resistance repetitions.
- 15 Low Position is the range of motion or position at which the peak power for the best of the three low resistance repetitions occurred.
- 16 Upper Power is the peak power detected for the best of the three high resistance repetitions.
- 17 Upper Velocity is the velocity that was produced at the point of peak power by the best of the three high resistance repetitions.
- 18 Upper Force is the force that existed at the point of the peak power during the best of the three high resistance repetitions.
- 19 Upper Position is the range of motion of position at which the peak power for the best of the three high resistance repetitions occurred.
- 20 Loc or location defines the units of measure for the data in the force velocity and position columns. It has the following possible meanings:
 - 0 Units of measure are SI units measured at the clevis of the air cylinder.
 - 1 Units of measure are linear SI units measured at the handle. ROM is in Meters, Velocity is in Meters per second, Force is in Newtons.
 - 3 Units of measure are rotary SI units measured at the handle. Rom is in Radians, Velocity is in Radians per second, Force is in Newton-Meters.
 - 5 Units of measure are linear Imperial units measured at the handle. ROM is in Inches, Velocity is in Inches per Second, Force is in Pounds.
 - 7 Units of measure are rotary Imperial units measured at the handle. ROM is in Degrees, Velocity is in Degrees per Second, Force is in Foot-Pounds.
21. Peak Power in Watts. This data will only appear for exercise machines with V7.73 or newer firmware. Some older versions may fill this column with zeros
22. Work in Joules. This data will only appear for exercise machines with V7.75 or newer firmware. Some older versions may fill this column with zeros.

Not all models of Keiser exercise machine have had software defined that will produce units at the handle. In all cases the Power values are correct and the same. Those machines that do not have the software for at the handle translations developed at this time will produce a 0 in the Loc column. Also certain machines, which are dependant on the proper setting of the range limiter as a seat position value, will produce at the cylinder results with a 0 in column 20 when the range limiter value has not been entered into the key. Note that seat position settings are saved on a per machine basis in the Chip. If it is necessary to change the seat position settings, especially on those machines that depend on it for accurate at the handle translation, it is recommended that the Chip be saved to

the PC before changing the seat settings. The current seat position settings for a particular model of machine will be applied to all sets from that model when the data for that model is saved. Seat settings are saved on a per workout set basis in the data file saved on the PC. Note that data in this file are always saved in Metric SI formats regardless of the language or local settings on the PC or display mode selected. This may change in future versions. Dates are always MM/DD/YYYY, radix points are always a “.” and thousands separators are always a “,”.