

J-Works

Version 2.2

Written by

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Before You Start

From the Author

I have been doing load calculations for over 17 years. I firmly believe that the greatest obstacle to comfort and energy savings is correctly sizing heating and cooling equipment on a case-by-case basis. The Manual J method was developed by ACCA (Air Contractors of America) to provide an accurate method to obtain this information. This process is tedious but, compared to “guessing”, well worth the effort. J-Works was written to speed up the whole process of calculating loads for residential structures. I have tried to design J-Works to enhance my productivity, and it has. J-Works has been approved for use by the Tennessee Valley Authority as an approved software program for use in their Heat Pump Program. Please send any comments about what you would like to see in future versions and/or what you don't like about this version. Send your registration and/or comments to:

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Support

MicroWorks provides 90 days free support for all software products. This period begins from the date of registration. Registered users receive the latest version of the program and a printed manual. Registered users will also receive special rates on the upcoming Windows version of J-Works.

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Files Listing

The following files are included:

JWORKS.EXE The executable program

BLANK.WKB	The “blank” template data file
JWORKS.ICO	Windows 3.x icon for J-Works.
JWORKS.DOC	Program documentation (Word 6)
JWORKS.WRI	Program documentation (Windows Write)
JWORKS.TXT	Program documentation (text file)
REGISTR.TXT	Program registration form and instructions

Backup Disk

Make a back-up disk using the DOS diskcopy command. It is recommended that J-Works be installed onto a hard disk for speed and convenience. Make a directory on your hard disk (ex: MD JWORKS). Then change to that directory using the CD \JWORKS command. Then type COPY A:*.* to copy all program files to the hard drive.

Template

You may also want to modify BLANK.WKB file. In this file you would enter your name, company, address, and default values in the variable cells. You would then save the file as BLANK.WKB. Then each time you start the program you could go to *FILE/GET* command and retrieve the BLANK.WKB file for use to shorten your setup time.

Manual J

J-Works is intended to be used with the ACCA Manual J booklet. For assistance in obtaining this publication, contact:

Air Conditioning Contractors of America
1513 16th Street, NW
Washington, DC 20036
(202) 483-9370

Main Menu and General Guidelines

J-Works contains a top pull-down menu bar containing *Worksheet*, *Range*, *File*, *Print*, *System*, *Video*, and *Quit* options. This menu is

accessed using the / key or by clicking on the selection with the left mouse button. Use the **Esc** key to back out of each menu level.

Worksheet contains global defaults for *Printer*, *Directory*, and *Other*.

Range contains the *DeOvr* option. *DeOvr* is the deoverride procedure which returns and restores a previous cell's calculated value. To use this option, place the cursor over the overridden cell (Note: All overridden cells are denoted by yellow numbers.) and then access the *Range* and *DeOver* options. Follow the on screen prompts.

File allows you to *Get* and *Save* data in the J-Works program. Choose either option. A pop-up menu will appear with .WKB files (data files) to choose from. You may highlight one of the files or type in a different drive selection.

Print is actually not needed but included. All printing of worksheet data is handled through the print procedures in the macro menu.

System allows you to temporarily go to the DOS prompt. Typing EXIT will return you to J-Works.

Video gives you control over screen colors and display modes. (Note: Any change in *Size* will affect the formatting of the macro menu procedures. Screen display should be returned to normal size before executing the macro menu procedures.) After arriving at a desirable screen display, you may save the .VID file for future use. A .VID file keeps the display configuration information.

Quit allows you to exit the program. Save to disk the .WKB file before exiting J-Works. Type a new name to avoid overwriting any templates.

Macro Menu

A macro menu controls the screen view and printing process. Below is a description of each selection in the macro menu. Hold down the **Alt** key and press the **F3** function key.

Alt + F3 key combination evokes the pop up macro menu containing seven choices:

CFM_CALC
PRINTJ
PRINTCFM

DATA_IN
PRINTSHORT

FORMTOP
TITLE

TITLE would be the first choice from the menu in most cases. Highlight the choice and press the **ENTER** key. Enter the customer name and address information. (Note: Use a ' or " before entering a numeric label.) Enter your name and address information if necessary. Data entry locations are usually denoted by >< brackets around the data entry fields.

PgDn to the Design Conditions screen to see if default figures are appropriate for your application.

PgDn twice and check the Winter and Summer AC/HR (air changes per hour) entries to see if they need to be modified.

FORMTOP would be the next step. This brings you to the top left corner of the worksheet area. Enter the ceiling height if different than eight feet. This height will be carried to all the rooms as the default. Next, go down the Construction No. blocks modifying them and the resulting HTMs as needed. Enter the duct gain/loss percentages in decimal form (ex: 10% would be 0.10) if different from the defaults.

Now you are ready to enter the room-by-room data.

DATA_IN sets up a moving window on the right side of your screen. The stationary left window lets you maintain your orientation in the worksheet. **DATA_IN** sets the cursor in position to start data entry on the first room. (Note: If doing a whole house load only, use the first room only to enter in your data.)

Enter the name of the room, running exposed feet, and room dimensions. Most rooms are not going to be perfect squares for load calculation purposes. Figure the square footage and enter a tenth in decimal form. (ex. 245 sq. ft. would be $24.5 \times 10 = 245$.) If needed, enter ceiling height other than 8 feet.

Continue to enter data in cells for different areas of structure. Winter glass area is calculated by the program for you, so just enter the Summer glass data first. It is recommended that glass in doors be entered as window area and subtracted from door sq. ft.

Ceiling and floor sq. ft. are calculated for you. In cases where the house is two stories or more, you will have to override the default and enter in the appropriate sq.ft. for the room. (ex: first floor usually would have no attic sq. ft.)

Number of people and/or appliances is set up such that entering a 1 or decimal fraction thereof will assume that you are referencing appliances. Enter people as 2 or more for areas of use. (ex: Entering .75 would add 900 Btuh to the room. Entering .25 in another room would add 300 Btuh, for your standard 1200 Btuh appliance load for the house.)

This should complete your first room data entry. **PgUp** until you are at the top of the worksheet and use the ----> key to move the right window to the next room and enter data for that room and so on.

CFM_CALC is a room by room air distribution calculator. When you have completed all data entry for all rooms, press Alt + F3 to get back to the macro menu. Highlight CFM and press ENTER.

Enter the cfm/ton which you would like to design with. Then enter the ARI nominal Btuh total capacity which the structure will require based on the Sensible and Latent figures in this section.

Total cfm is then calculated and possible cfm and number of registers is calculated for each room. Note that the cfm can be overridden so that small allowances may be made for rooms.

The return needed section calculates the gross return filter size. This is calculated by taking half of the system cfm and dividing that by .8 . The possible filter sizes are consisted of the first number which is a standard size and a second number which is merely the gross divided by this first number. Choose a common filter size as large or larger and enter the result as a label in the recommended filter entry area. (Note: Use the ' or " first to denote a label entry.)

PRINTSHORT is a procedure which prints the title sheet, the air infiltration and summary sheet, and the first room data entry sheet. This would be all you would need to print out for the whole house load.

PRINTJ is the printout of all worksheets. This will print out all fourteen room worksheets along with the title and summary sheets.

PRINTCFM prints out the cfm calculation sheet, useful for reference in designing your duct layout and sizing.