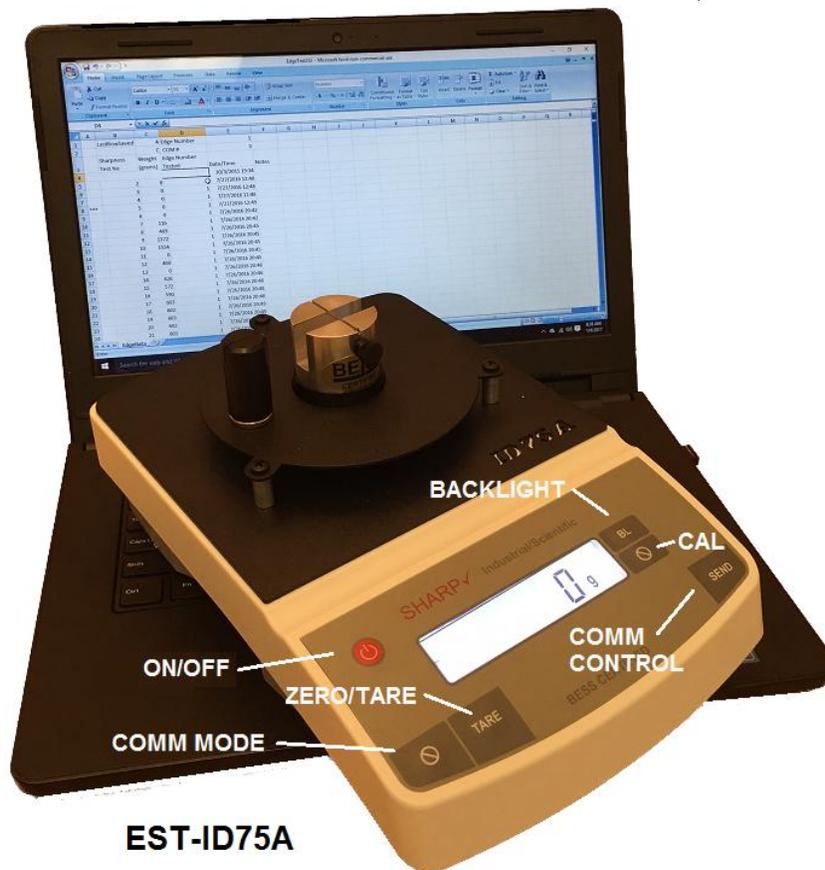


Instructions For Use of Your EST ID75A Industrial Sharp ✓

Edge Sharpness Tester

manufactured by

edge·on·up
bringing science to the edge



Thank you for purchasing an EST ID75A Sharp ✓ electronic edge tester. From now on you will know, with precision, how sharp the edges of your cutters, chopping blades, knives and circular blades are. Now you will be able to log, trace and communicate sharpness levels accurately because your ID75A conforms to the **BESS™** scale and is a **BESS CERTIFIED™** edge sharpness test instrument.

Business owners and process engineers all over the world are discovering just how valuable edge sharpness data can be to their operations. Often, a cutting edge is at the very front end of a machine's designed purpose. If that edge is not operating inside its "sweet spot" everything associated with that machine's operation suffers including through-put, product quality, mechanical longevity and a very significant increase in power consumption.

Always use caution when handling sharp edges! Protective gloves are always a safe bet!

Sharp ✓ instrumentation determines the sharpness of edges the same way you do when wielding a knife or other cutting tool - by measuring the amount of force required to cut through a medium. When an edge requires the application of great force to cut or slice through a material then you know that it is dull. In that same manner Sharp ✓ measures, very precisely, the force required to sever a carefully engineered standard test media. The number displayed by the ID75A after a test is completed will be your BESS C scale score. This number represents the number of grams of force required to sever the test media with your cutting edges. The lower the number the sharper the edge. The ID75A calculates and displays force readings in 1 gram increments. In fact, your ID75A is capable of ascertaining specific sharpness data at a much more precise level than most edges can be ground. We encourage you to read our support document.

Your ID75A unit has a simple three button operation. ON/OFF, TARE/ZERO and BACKLIGHT when taking measurements. Additional controls are used when communicating with a PC but more on that later.

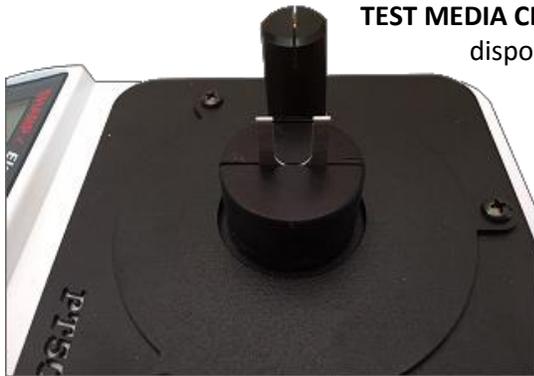
Although you will typically try to begin the measurement process with the display sitting at zero, in fact, zeroing is not always required nor necessary. The measurement system employed by all Sharp ✓ electronic instruments is a "greater than" methodology meaning that the instrument is always looking for the maximum amount of pressure applied to the test media during any one measurement event. As an example, let's say that we are measuring an edge that will, eventually, require more than 300 grams of pressure to sever the test media. If the ID75A display is reading 100 grams when the measurement process begins, force applied to the test media by the edge will not begin to register until *more than* 100 grams of pressure is applied to it. So, in this case, whether or not the display reads "100" or "0" at the beginning of the measurement process has no effect on the final test result.

STORAGE - Store and operate your ID75A in a clean environment and at room temperatures. If the instrument has been stored in cold or hot temperatures, then allow it to acclimate to room temperature (30 minutes) before use.

Assembly - There is little assembly required with your ID75A instrument. Mount the edge fulcrum with magnetic base on the round platform ring (if used) and place the aluminum Test Media Fixture test

inside the platform circle. You are now ready to take a measurement because the Aluminum Test Media Fixtures come to you preloaded and ready to measure.

Battery - Six AA batteries (non-rechargeable) are already installed in your ID75A. If you wish to use the AC adapter as a power source simply plug it in to a 115V AC wall outlet and then into the instruments DC power jack.

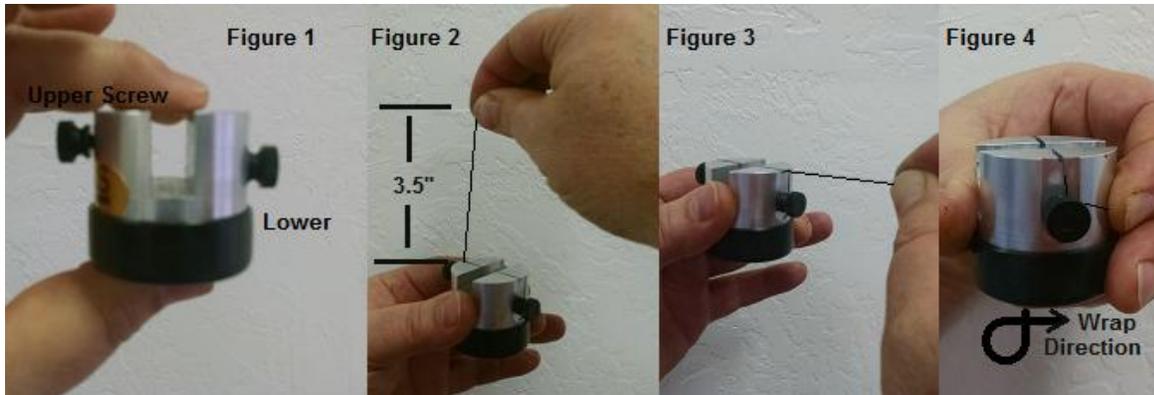


TEST MEDIA CLIP FIXTURE - If you have purchased a Clip Fixture Base and disposable Test Clips taking edge sharpness measurements is even simpler. Place a test clip in the center of the slot (see picture at left) and then conduct a sharpness test. Dispose of the test clip after the measurement has been conducted. Test clips have a 0-1200 range. Test Media Clips are particularly useful for those who need to take edge measurements with irregularly shaped cutting tools or who experience reduced dexterity in their hands or fingers.

TEST MEDIA FIXTURE (Aluminum) - As mentioned earlier your aluminum Test Media Fixture has been pre-run with test media and is ready to measure. Make a visual inspection and mental note of how the test media is threaded across and around the fixture. Here is how you reload the test media after a test has been conducted:

Note: These instructions are written and pictured with the test fixture held in the left hand. You may switch this process if you are "other handed".

1. Loosen both plastic thumb screws. In Figure 1 The top screw need only be backed off one full turn but the bottom (lower) screw should be backed out several turns. Remove and discard from around the lower screw, any residual test media that may be left over from a previous test
2. In Figure 2 pull out about 3.5 inches of test media then retighten the top screw with only light pressure.
3. In Figure 3 pull the test media across the top of the test fixture with the test media resting in the shallow groove.
4. In Figure 4 pull the test media end down and then around the threaded shaft with a clockwise motion. Make certain that test media remains seated in the groove while you are doing this. Wrap the test media one turn about the *threaded portion* of the screw.
5. Note in Figure 4 how the index finger of the left hand pinches and holds the test media against the side of the test fixture. This prevents slack from forming in the test media and frees the right hand to tighten the lower screw. Pinch the test media against the side of the fixture while you tighten the lower screw.



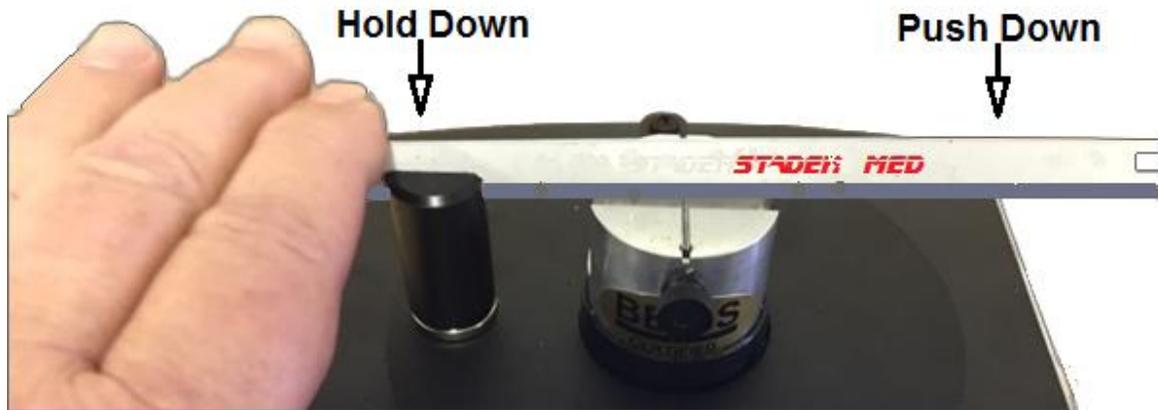
Reloading the test fixture will take less than ten seconds once you have mastered it. The goal here is to simply pull the test media across the gap in the fixture with no slack (slight tension) in the test media. Do not over tension the test media. Over tensioning is neither helpful nor necessary.

How to Position the Edge for Measurement

In the photos below we show, for example purposes only, a method for measuring edges using a handheld technique. Many edges may be easily tested hand-held while others may require the construction of a custom fixture for the purpose. Generally speaking, edges that test under 500 can be tested in a hand held fashion while those over 500 are best tested with the edge held in some sort of custom fixture. Note how the users hands are resting on the platform and ring for support. **Under no circumstances should the edge be allowed to contact the base of the test fixture after the test media has severed.** When measuring edges by hand and without benefit of a fulcrum. It becomes more difficult to control the edges downward inertia if the edge measures over 500. Your instrument will register most impacts with the Test Fixture and if the impact force is greater than the force required to sever the test media your measurement will be skewed upward. In all cases the edge must be centered in the fixture slot and held as close to vertical as possible in order to achieve the most accurate result **Always use caution when measuring these edges and protective gloves are always a good bet.**



USING the FULCRUM - The fulcrum with magnetic base is a simple means of measuring most tools with long, straight edges. The fulcrum may be placed in any position that is appropriate for the edge to be measured. Use the fulcrum as a pivot point for the edge. Hold the edge down in the fulcrum slot with one hand while you pull or push down on the opposite end. For knives, the handle end may be pushed down or, the point end.



CALIBRATION - There are two steps to every calibration function. The first is establishing the individual calibration curve for each ID75A. This has been already been carefully established and set before your instrument left our facilities. Once the calibration curve has been set, it should never need to be reset. The second step in calibration, "zeroing the instrument" is conducted each time the instrument is powered up. Just make certain that the instrument has been stabilized at room temperature, is on a solid level surface and that "0 grams" is showing on the instrument display before beginning a measurement sequence.

TAKING A MEASUREMENT - Make certain that the instrument is resting on a solid and level surface. Place whichever Test Media System you will be employing inside the circular opening. Power-up the unit and allow it to stabilize ("0" grams). Take the measurement.

It makes no difference whether the upper or lower screw in the aluminum Test Media Fixture faces you during a measurement sequence. Just make certain the wide slot in the test fixture is squarely aligned with the narrow slot in the fulcrum (if used). It is possible that some styles of blades will be too thick to seat in the bottom of the fulcrum slot but that is OK. Just make certain that the knife *edge* remains in the slot and that the sides of the knife blade are held in a vertical position during the measurement process. If the majority of the edges you measure are thick then you may want to widen the slot in the fulcrum using an ordinary hand saw blade (i.e. hacksaw blade). Don't let the top side of the blade (spine) tip toward or away from you during the measurement process or it could skew your results slightly

Remember Slow and Easy! We're not chopping carrots but measuring the sharpness of an edge. Your downward movement with the edge should be slow and deliberate. Try to find a seated position with arms resting on the worktop for greater control and stability. If you can clearly see the increase in force tick upward on the display in small increments (5 or 10 grams) then you know that you have taken the measurement correctly. When the test media severs, the measurement is complete and your BESS score

for that edge will be indicated on the display. If you want to take another measurement then Insert or rerun test media, place the fixture back in the center tray and then Zero/Tare the unit.

COMM - Your ID75A may be used either "stand-alone" or in conjunction with a comm link to a Windows based PC. The comm program provided will communicate with most modern versions of Windows (7-10) and measurements results may be read into Microsoft Excel or other data base style applications. You have been provided with a non-commercial version of an Excel spreadsheet file to be used as an example of how this might be accomplished. Data can be read into any application that uses Active X controls and the required Active X control (Stroke Reader) is part of the software package that you have received with your ID75A. Additionally, we have provided you with a copy of a Prolific driver that may be used for direct communications with many USB printers. However, we cannot offer support for this printer function due to the vast number and type of printers/operating system combinations available. Many printers/operating systems will simply recognize your ID75A automatically once the driver has been installed. Others may require additional steps before communications can be established.

PC Communications - First you must install the EOU COMM program using the USB memory stick provided with your instrument. These files should be copied to the hard drive of your computer. Keep the memory stick as a backup for the files. Use the following procedures to install the Comm software once the files have been copied to your hard drive.

Installation

1. Install driver by running the PL2303_Prolific_DriverInstaller_v1160 program. Then reboot your computer.
2. Install Strokereader Active X program by running the srsetup program.
During installation copy license number contained in the LicensereaderLicense.txt file into stroke reader serial box.
3. Enable active X and macros in Excel. The sample file provided was taken from a Excel 2007 version which should be forward compatible with later versions of Excel that may be installed on your computer.
4. Make certain that the EdgeTest232.xlsm file has been copied to your local hard drive directory.

Connect the provided cable DB9 connector to your ID75A as shown below and the USB end to your PC.



Test and troubleshoot installation

1. Open the EdgeTest232.xlsm in your installed version of Excel.
2. Unplug and plug in USB cable into back of your ID75A.
3. Observe pop-up windows, which show the connection status, each time you unplug or plug the USB cable.
4. Power up the ID75A and cause a number other than "0" to appear on the ID75A display. The Excel file page provided will not display a "0" value.
5. Press send button. Observe scale data recorded into spreadsheet.

If connection status pop-up windows, do not appear:

1. Check that Excel ActiveX settings are enabled for all controls without restrictions.
2. Check COMM port that the Prolific USB driver was installed on and make certain that Excel and PC are on same Comm port.
 - a) Open up control Panel, find and run the device driver. Under Ports, find Prolific driver, and read the COM port number.
 - b) Enter this number in Cell E2, save spreadsheet, then reopen spreadsheet. Test with plug USB cable into scale.
 - c) If Prolific USB driver was not found, reinstall driver with PL2303_Prolific_DriverInstaller_v110 program.
Investigate and fix driver installation problems.
3. Check if driver has no errors or conflicts.
 - a) Open up control Panel, find and run the device driver. Under Ports, find Prolific driver, and read driver status.

Enable Active X and Macros. These instructions are written for the same version of Excel that the sample file was taken from (Excel 2007). Subsequent versions of Excel may vary. We offer no assurances that our Excel file is backward compatible with earlier versions of Excel (earlier than 2007).

1. Click on Excel Icon upper left.
Then on "Excel Options"
Then on "Trust Center"
Then on "Trust Center Settings"
Then on "Active X Settings"
Then Click on "Enable all controls W/O restrictions"
Then Click on "Uncheck safe mode".
2. Enable macros:
Click on Macro settings.
To the right, click on "Enable all macros".

Navigating Inside Your Demonstration Excel Spreadsheet**Basic user details**

1. Sharpness test results are recorded for each pressing of the ID75A send button (default setting and except "0" display value).
2. Test results are recorded sequentially in row descending order, beginning at row 4.
3. Move or reset where the test results are recorded using the LastRowSave Cell "C1".
4. When test conditions change, then modify the E1 cell. Name for the E1 cell is Edge Number.
The intent was to do testing for different edge test conditions, either with same edge or different tool edge.

LastRowSaved Cell

1. Use LastRowSaved cell to control where the scale data is recorded on which row.
2. This cell number allows the user to reset the scale data location back to the beginning row to start a new series of edge sharpness measurements.

Edge Number Cell

1. Use to organize scale test data under different test conditions, where the edge is sharpened or a different edge is measured.
2. Begin with a number 1 and manually change when test conditions change.

Save edge sharpness results

1. Select test data, and copy to desired spreadsheet location.

COMM MODE - Your ID75A outputs data in three different communications modes with either printer or PC. The following parameters are changed at your ID75A and not your PC.

Standard Mode (default) - In this mode data is only output to the PC/Printer when the "SEND" button is depressed

Auto Mode - In this mode data is sent automatically to the PC/Printer each time a new and stabilized measurement number is sensed.

Streaming Mode - In this mode data is continuously streamed to the PC/Printer. It is not recommended that you use this mode with the sample spreadsheet provided (without modification) because the data stream will very quickly fill the spreadsheet. Export to data base applications is recommended in Continuous Mode.

Your ID75A is automatically set to *Standard Mode*. Here is the key sequence that will allow you to select or change to one of the above data output modes.

To enter the COMM MODE transition program take the following steps - After power up press and hold the "**MODE**" key for three seconds or until you see "*Prt*" on the display. Now press the "**TARE**" key. "*hAnd*" should appear on the display and you are ready now to select the communications mode of your choice.

For *Standard Mode* - Press "**TARE**" once again and you will exit the selection program.

For *Auto Mode* - Press "**MODE**" once (Auto will display) and then "**TARE**"

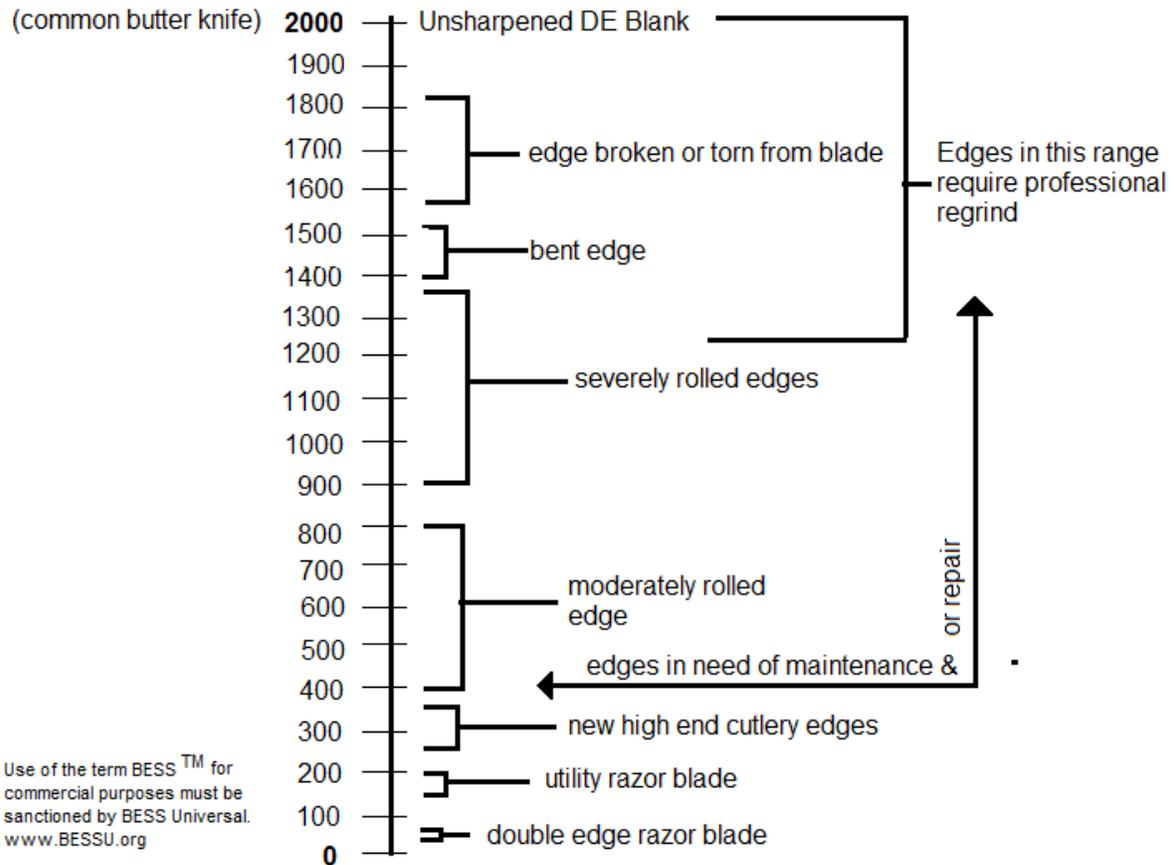
For *Continuous Mode* - Press "**MODE**" twice and then "**TARE**"

If you have made a previous COMM MODE selection to Auto or Continuous and wish to revert back to Manual Mode then the instrument will display the current selected mode after "*Prt*" as opposed to "*hAnd*". When you see the "*Auto*" or "*Contin*" display prompt (depending on the mode previously selected) use the "**MODE**" key to toggle through the options until "*hAnd*" appears on the display. Press "**TARE**" once and the COMM MODE will be restored back to Manual Mode. You may have to power the unit down and then back up to realize the changes you have made and to restore full functionality.

Interpreting Edge Test Data - For most first time users the edge test data received will be the first edge test data ever seen or experienced outside of anecdotal methods like paper cutting or running a thumb across the edge. All ground edges are filled with microscopic inconsistencies and your ID75A will report the magnitude and range of those inconsistencies back to you. You must learn to trust the messenger and that trust will come of a better understanding of the causes. We strongly suggest that you read the companion document to this manual entitled "***Understanding and Interpreting Edge Data***" so that you might better understand how to interpret edge data and then improve the quality of your edges.

BESS™ "C" with common edges and edge issues

all values expressed are in grams of pressure (force) required to sever a BESS certified test media



Email us at edgeonup@gmail.com with questions - we respond!