



OPERATING INSTRUCTIONS ZEECR903A



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WARNING!

Read, study and understand all warning labels and operating instructions furnished with this equipment prior to use. If any portion of this material is unclear, contact your factory representative for clarification.

To reduce the risk of electrical shock:



- 1 Do not use outdoors or on wet surfaces.
- 2 Do not remove covers, no serviceable parts inside.
- 3 Only qualified persons are to install and maintain this equipment in accordance with applicable codes, safety practices and manufacturers instructions.
- 4 Improper connection of the equipment conductor can result in a risk of electrical shock, check with qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded.
- 5 Do not use with a damaged cord or plug. If equipment is not working properly, has been dropped, damaged, or left outdoors, return it to a service center for repairs.
- 6 Do not pull or use cord as a handle, close door on cord, or pull cord around sharp edges or corners.
- 7 Do not handle plug or equipment with wet hands, unplug equipment before servicing or cleaning.

To reduce the risk of fire or explosion:



- 1 This equipment incorporates parts such as switches and receptacles, which tend to produce arcs and sparks that can cause an explosion. When located in a garage or service station, installation and use at least 20 feet horizontally from exterior of any dispensing pump and at least 18 inches (450mm) above the floor or ground level.



- 2 Do not operate this equipment in an area that has high concentrations of fumes such as from paint, paint solvents, or other volatile vapors.
- 3 Replace fuses only with fuse of the specified voltage and current rating.

To reduce the risk of tipping:



- 1 Do not open more than one drawer at a time.
- 2 Close all drawers and doors before moving.
- 3 Do not place heavy objects on door or in drawers.
- 4 Do not step in or on doors or drawers.
- 5 Do not pull, push to move unit.

It is your responsibility to keep all warning and instruction decals legible and intact. Replacement decals are available from the manufacturer of this equipment. Failure to heed these warnings may result in property damage and/or personal or fatal injury.

Precautions to Observe

The System

1. The Tru-Point™ System is designed for use in a typical body shop environment.
2. The Tru-Point™ is a measuring instrument, and should be treated as such, to guarantee a satisfactory function over a long period of time.
3. The Tru-Point™ System uses infrared technology. The equipment conforms to all regulations relating to use. The installation and use of the Tru-Point™ system should be in strict conformity to the manufacturer's specifications.
4. It is recommended that the main power supply be connected to a UPS surge protection system
5. Keep the computer compartment panel closed. Access to the computer is not required except when loading "Vehicle Supplements".
6. Always disconnect the main power supply before removing the rear panel of the console.
7. Keep printer secured in drawer. Prevent objects (accessories, etc.) from falling inside.
8. Do not pass the magnetic end of accessories over the computer monitor screen.
9. Do not keep or pass the magnetic accessories over or in the vicinity of floppy disks.
10. The Tru-Point™ System that you possess is security protected. Any copying, except for personal backup use is forbidden.

The Reference Frame

1. Ensure that objects do not fall onto the frame.
2. Protect from welding operations in the vicinity.
3. Prevent knocks and damage to the frame.
4. After use, clean the frame with a damp cloth and store on the system cart.

The Camera

1. Ensure that objects do not fall onto the camera.
2. Protect from welding operations in the vicinity.
3. Prevent knocks and damage to the camera.
4. Camera lens should be kept clear of dust, dirt and any foreign particles. Clean with lint-free lens cloth and alcohol.



Store disks at temperatures between 50°F and 125°F.
Do not touch the exposed part of the disk behind the metal.
Keep disks away from magnets.

Do not use an eraser on a disk label.
Keep disks dry.
Avoid exposing disks to direct sunlight.

Introduction

Congratulations on purchasing the very latest in collision damage measuring technology. The Tru-Point™ Structural Diagnostic System represents the next generation in electronic measuring.

We hope that you will find this User Manual helpful. It was designed to provide the user with step-by-step directions from the first screen to the last screen. The use of screen images and photographs should add to the simplicity of instruction. The user may find it helpful to read the manual from beginning to end before attempting use of the Tru-Point™ system.

This manual contains warnings, assembly procedures and operating instructions. It is intended to explain, to a trained professional auto body technician, how this equipment functions. It is not intended to teach anyone how to perform proper auto body repair, nor can it deal with all of the possible combinations of damage and conceivable hookups that may be required for repair. If there are questions concerning the operation of this equipment please contact a Kansas Jack Representative or contact Kansas Jack at 1-800-582-5215.

General Description

Tru-Point™ Structural Diagnostic Systems combines advanced electronics and computer science to bring repair shops the most progressive measuring tool available in the collision repair industry today. This new technology delivers accurate, reliable, repeatable information at a fingertip.

Tru-Point™ is specifically designed to be computer driven using infrared technology. It is a diagnostic tool housed in a simple package: a console constructed for body shop use, light-weight reference frames, and a high resolution digital measuring camera.

While many of the instructions for operating your Tru-Point™ Structural Diagnostic System is provided in the software itself, it may be required to refer to the first section of this manual to help get started. After becoming acquainted with the actual components of the system, follow each section step-by-step, to learn the capabilities of the system.

Product Specifications

PHYSICAL PROPERTIES:

Footprint: Cabinet - 32w x 28d
Camera - 38w x 29d

Shipping Weight: 355 lbs

Power Requirements:
115V (±10%)

ENVIRONMENTAL REQUIREMENTS:

- Pollution Degree 2
- For indoor use only
- Altitude up to 2000 meters
- Temperature 5° C (41°F) to 40° C (104° F)
- Humidity 20 to 80% RH noncondensing
- Installation category II

Tru-Point™ System Contents

- Console Assembly with 15" Color Monitor
- Keyboard
- Color Printer
- Optical Mouse
- PC with Windows XP operating system
- Camera with stand
- "X" Reference with Frame and hangers
- "T" Reference
- Hand held probe
- Probe tip
- Probe Extensions (100mm, 200mm) (can be used in combination to make 300mm)
- Tool cables

Assembly and setup

Before use, the Tru-Point™ system will require some minor assembly of several components. Refer to illustration 1 for reference. Installation personnel will be required to assemble the monitor onto the console. The peripherals, such as the keyboard, mouse and printer must be checked for proper operation. An electronic reference device and location probe must also be connected.

Console

1. Remove the console from the skid.
2. Inspect each component for damage, notify shipping company immediately if damaged, report any shortages to customer service.
3. Place the Monitor on the console top, secure with the sliding fasteners.
4. The back panel is secured with four (4) phillips head screws. Slide the back panel from the rear of the console a few inches to access the power receptacle. See Figure 1.
5. Connect video cable to the PC. Attach power cord to the monitor and to the power receptacle inside the distribution drawer. Reinstall the back panel screws.
6. Inspect the desktop PC in the bottom console shelf from the front, make sure is secure.
7. The keyboard is secured to the shelf. The keyboard cable is routed through the hole in the middle of the drawer and to the PC.
8. Inspect the mouse on the mouse tray on the right side of the console. The mouse cable is routed to the PC and connected to one of the USB connectors.
9. Check the printer in the console drawer. Install toner cartridges and paper.
10. Inspect the routing of all cables from each of the above peripherals to the rear of the PC. Refer to the drawing detail in Figure 2 for proper cable connections.

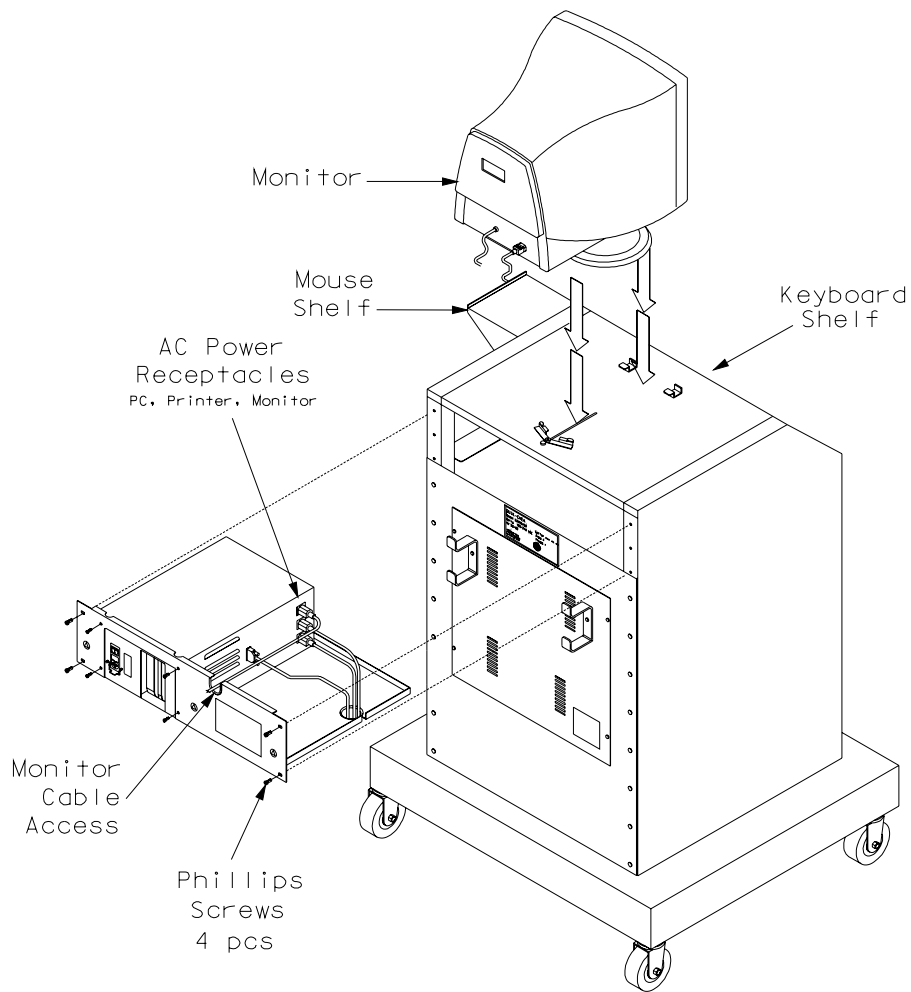


Figure 1

PC Connector Detail

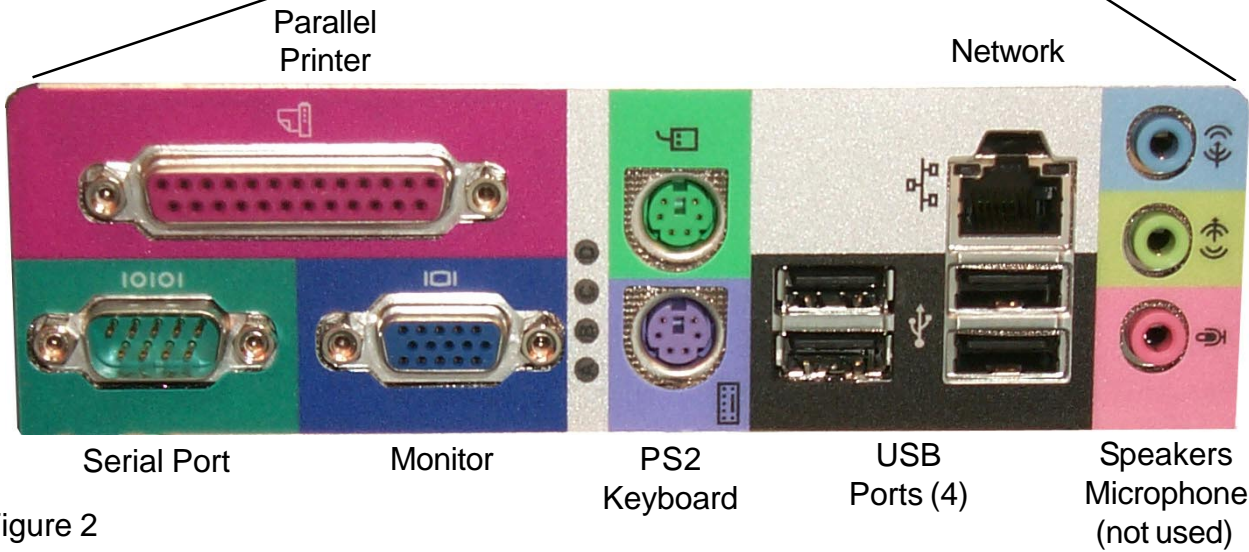


Figure 2

Camera and Roll Stand Assembly - Figure 3a

1. Locate the Roll Stand shipment. Refer to Figure 3 for assembly detail.
2. Attach the handle (item 1) to the roller body using 1/4-20 x 3/4 bolts and serrated flange nuts.
3. Attach the upright tube (item 2) to the roller base using three 1/4-20 x 3/4 bolts and serrated flange nuts.
5. Attach the camera assembly (item 3) to the roll stand camera mount.
6. Attach camera cable to the rear of the camera assembly on one end and to the rear of the cabinet to the mating connector on the other end.

Splitter Box - Figure 3b

1. Locate and connect the splitter box cable to the rear of the cabinet, then to the splitter box.
2. Connect the green Switch Box cable to the Splitter box and to the Switch Box.
3. Connect the reference "T" (Black cable) or "X" (yellow cable) to the Splitter box.
4. Connect the curly cable to the switch box and to the Probe. See Figure 4 for a complete system layout drawing.

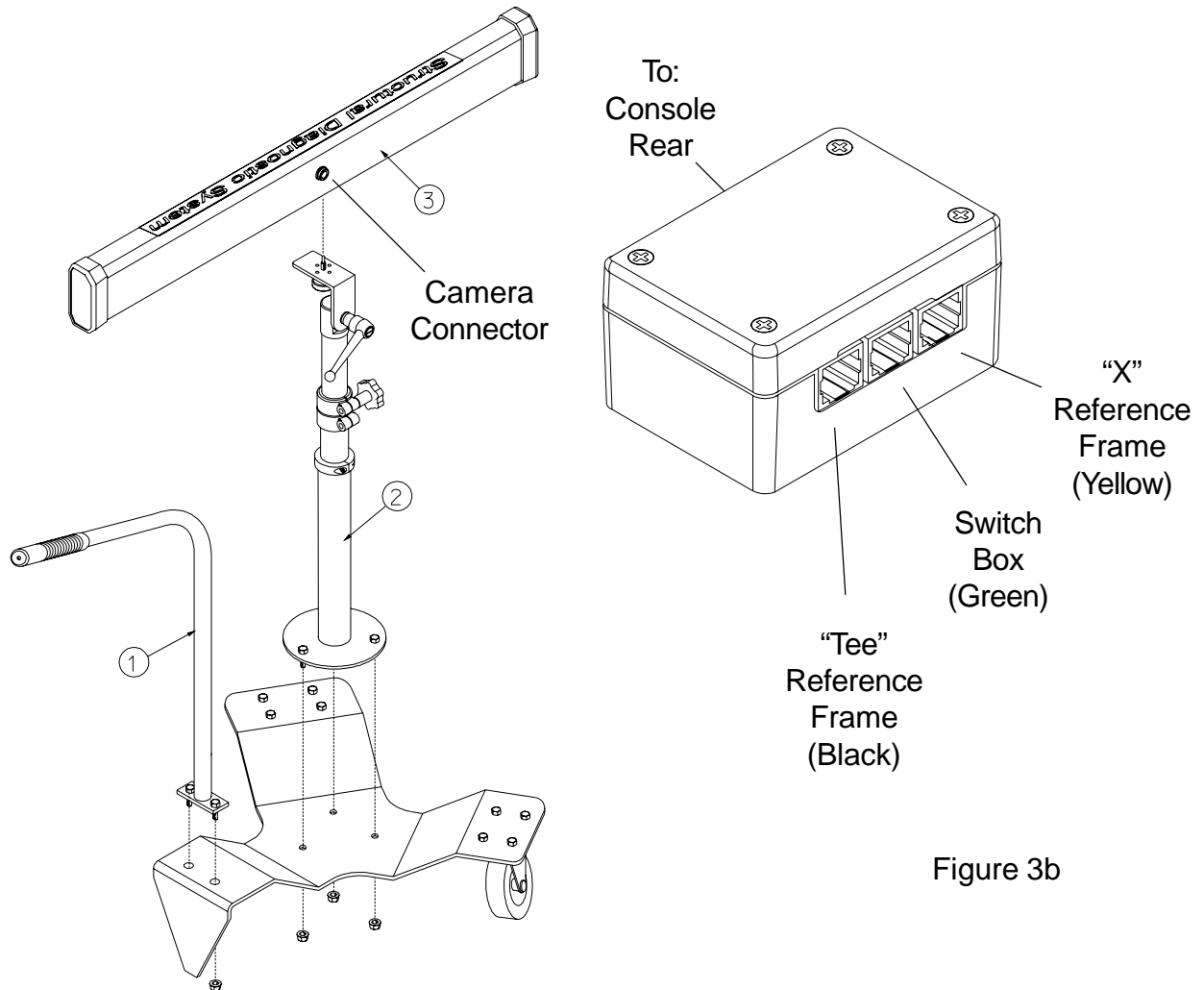


Figure 3a

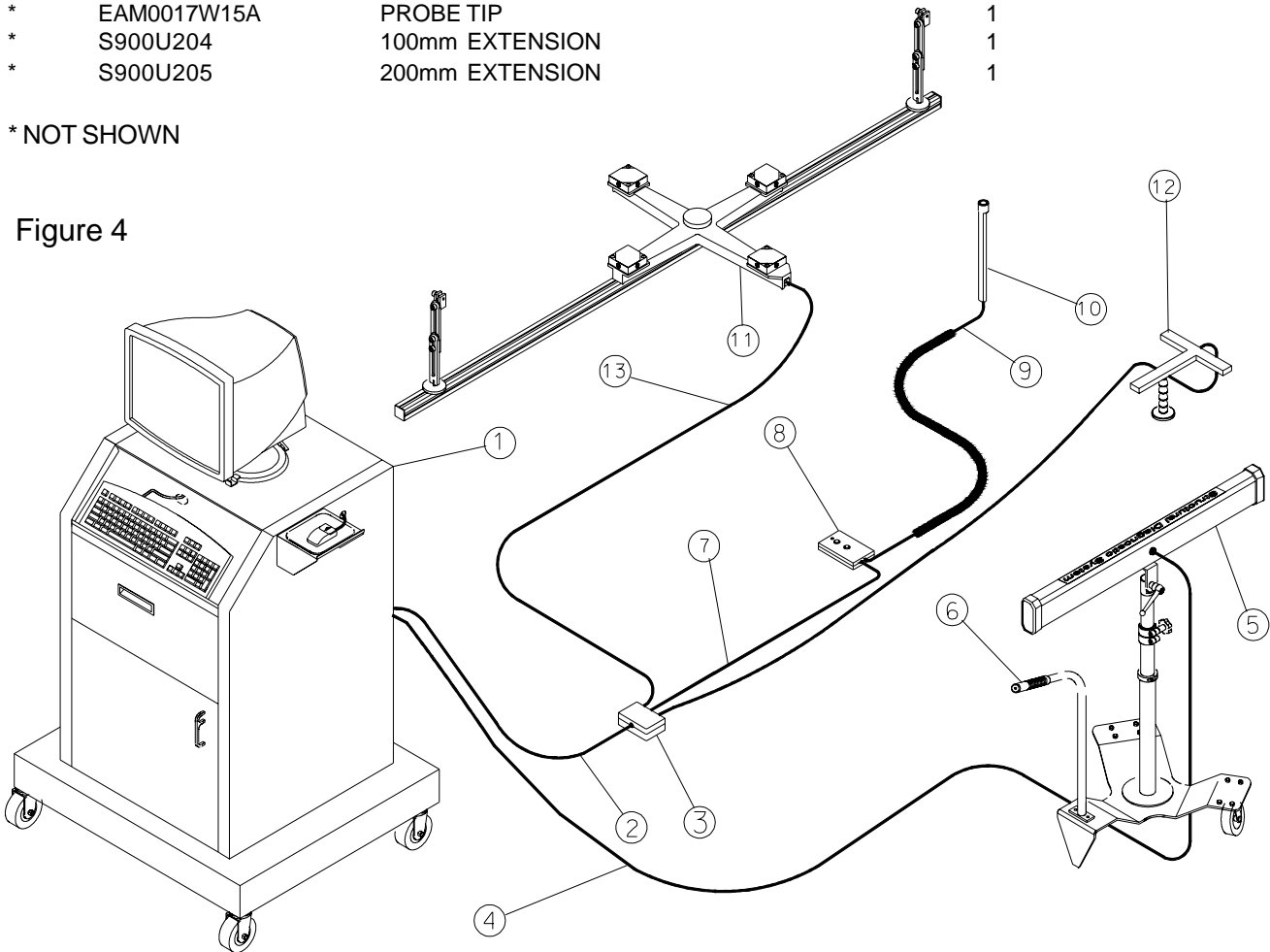
Figure 3b

Tru-Point™ Component Listing and Systems Hookup Reference

<u>Ref</u>	<u>Part Number</u>	<u>Description</u>	<u>Quantity</u>
1	EAA0314W16A	CONSOLE	1
2	EAA0315W07A	TOOL CABLE	1
3	EAA0310W03A	SPLITTER BOX	1
4	EAA0315W08A	CABLE - CAMERA	1
5	EAA0315W01A1	CAMERAASSEMBLY	1
6	EAA0314W11A	CAMERA STAND	1
7	EAX0056W01A	CABLE - CONTROL BOX	1
8	EAA0310W04A	CONTROL BOX	1
9	EAX0056W03A	CABLE - PROBE	1
10	EAA0316W07A	PROBE ASSEMBLY	1
11	EAA0316W06A	3D "X" REFERENCE FRAME KIT - INCLUDES:	1
	EAA0316W03A	UNDERCAR ADAPTER PACKAGE	1
	EAA0316W05A	3D REF FRAME ASSEMBLY	1
12	EAA0310W06A	TEE REFERENCE FRAME	1
13	EAX0056W07A	COM CABLE - 3D REF. FRAME	1
*	EAA0318W01A	ACCESSORY SET	1
*	ZEECR903A	TRU-POINT™ OPERATING INSTRUCTIONS	1
*	3-01808A	MONITOR	1
*	3-030506A	PRINTER	1
*	EAA0314W15A	COMPUTER	1
*	EAA0314W01A	INTERFACEBOX	1
CONTENTS of EAA0318W01A		ACCESSORY SET:	
*	EAM0017W15A	PROBE TIP	1
*	S900U204	100mm EXTENSION	1
*	S900U205	200mm EXTENSION	1

* NOT SHOWN

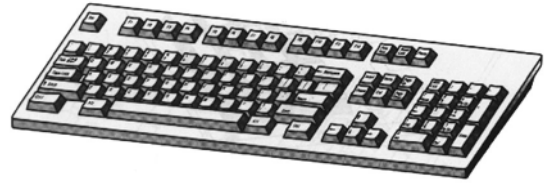
Figure 4



Getting Acquainted with the Keyboard

Keyboard:

Use the keyboard to type instructions for the computer, and to type information required for the computer to process. All keyboards have letter keys, punctuation keys, and a space bar, which resemble the keys on a typewriter. Most keyboards also have function, numeric, and arrow keys, in addition to ALT, CTRL, DEL, and ENTER or RETURN keys. The computer manufacturer determines their placement on the keyboard; the software you are using determines how they are used.

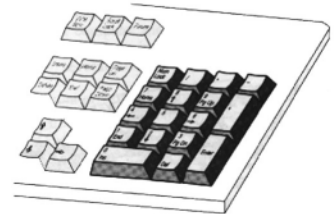


Standard Keys:

Use the letter keys, punctuation keys, and space bar the same way they are used on a typewriter.

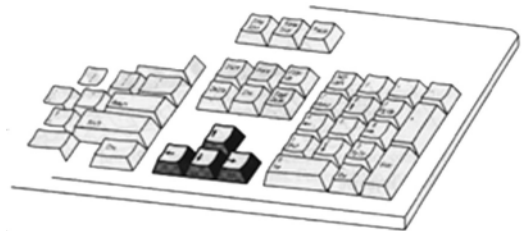
Numeric Keypad:

Because the number keys are grouped together on the numeric keypad, the keypad is a quick and easy way to type numbers. With many software products, you must press the NUM LOCK key before using the numeric keypad to type numbers. The NUM LOCK key works somewhat like the CAPS LOCK key on your typewriter. When pressing the NUM LOCK key on the numeric keypad, the numbers pressed on the keypad appear on your screen.



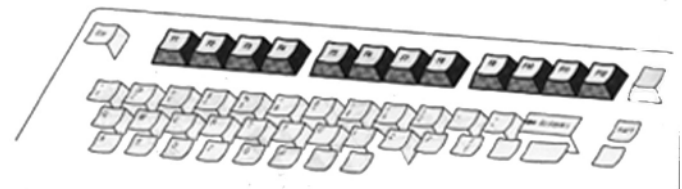
Arrow Keys:

The arrow keys help the user navigate around the screen and they appear to the lower left of the numeric keypad. Use these arrow keys anytime, regardless of whether the NUM LOCK key is active.



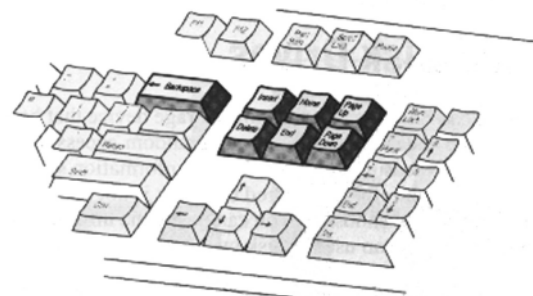
Function Keys:

Function keys send instructions to the software that you are using. They are located across the top on extended keyboards or on the left side of standard keyboard.



Additional Keys:

In addition to the standard, numeric, arrow, and function keys, extended keyboards include BACKSPACE, INS, DEL, PAGE UP, PAGE DOWN, HOME, and END keys. Typically, use the PAGE UP, PAGE DOWN, HOME, and END keys to move around or scroll through information on your screen, use the BACKSPACE, INS, and DEL keys to edit text.



Before Measuring Begins:

The operational theory for the Tru-Point™ is very straightforward and flows as follows.

3 DIMENSIONAL (X,Y,Z) MEASURING PROCESS

The process and methods used to perform these functions requires three (3) unique pieces of equipment. (1) The Camera Array. (2) A Reference frame. (3) The hand held probe.

As long as the camera can see both the reference frame and the hand held probe, control points can be measured in relation to the vehicle X, Y, Z datum planes. Refer to the camera field-of-view illustration on page 21.

First enter the customer information that will identify this customer. Select the desired vehicle from the database. Measure the pre-selected setup points, or any other 4 undamaged points in the vehicles center section to establish a datum. The computer will check the actual measurements of the selected points against the computer specifications database. If everything is good, the Tru-Point™ and its computer are “married” to the vehicle, referred to as having done a “setup”. Once this is done, measure any other control point identified on the vehicle graphic and the measurement will be related to the undamaged control point coordinates.

The details of this process are explained later in the particular section concerning measuring.

OTHER MEASURING TECHNIQUES

The Tru-Point™ system also allows you to do electronic versions of two other popular measuring techniques i.e., **TRAM BAR** and **COMPARATIVE** measurements.

TRAM BAR MEASUREMENTS (point to point)

From the home screen, select “Quik-Tram”. Then, without performing any type of “setup” activity other than positioning the reference frame and using the hand held probe, you can perform “tram bar” type measurements between any two points. Determine what you wish to measure, place the probe tip on that point and push the green probe switch button, then go to the next point and do the same thing. The distance between those points, is calculated the same as with a tram bar process.

COMPARATIVE MEASUREMENTS (X,Y,Z)

Within the “MEASURE VEHICLE” screen, after having done a “setup” to find the vehicle center-lines and datum, select the “COMPARATIVE MEASURE” feature. Then take the probe and touch any point on the vehicle. Press the green measure button, the system will display the length, width and height of that point, relative to the vehicles centerline, height and length datum planes.

It is important to note that in order to relate any point on the vehicle to the vehicle’s datum planes, first the datum planes to measure the vehicle against must be established. This is referred to as doing a “setup” which is described in detail in the “**Setting Up the System**” section of this manual.

Setting up the System to Measure

To achieve optimum measurement accuracy results, the system should be used within the following parameters:

Reference Frame Placement:

Attach the magnetic base of the reference frame to the vehicle's underbody, frame rack, lift post or any other stable object.

The reference frame:

- Must be seen by the camera.
- Must not move relative to the vehicle during a measurement session.
- Should be roughly centered or in close proximity of the points to be measured.

Recommendation:

To measure front end vehicle damage, position the reference frame approximately in the oil pan area. To measure rear end damage, position the reference frame approximately in the rear axle area.

Camera Placement:

The camera:

- Should be no more than 10 feet from the point being measured.
- Should be moved as needed to maintain this maximum distance.

IMPORTANT: When doing lowerbody XYZ measuring, only one area can be measured at a time.

- A. Front end damage - center and front sections of vehicle
- B. Rear end damage - center and rear sections of the vehicle.

Start-up Screen (Figure 5)

Click



to proceed to the Home Screen



See Figure 6.



Figure 5



Purpose:

- Lists the jobs currently in the system
- Creates a new job
- Edit an existing job
- Before repair measurements
- After repair measurements
- Quik Tram
- Print a Job
- System administration
- Quit
- Help

Note: Clicking on the header of each column will re-sort all the jobs in ascending order, relative to the information stored in that column.

Customer Name	Company	Order Reference	VIN	Order Date	Before Repair	After Repair
2004MAR16-1435,		1		04/16/2004	X	X
2-1-1,		1		07/09/2004	X	X
2-1-2,		1		07/09/2004	X	X
2-1-3,		1		07/09/2004	X	X
2-1-4,		1		07/09/2004	X	X
2-1-5,		1		07/09/2004	X	X
Brumley,		5/13/04		05/13/2004	X	
cullum,		762308		06/17/2004		
cullum 1,		a1		07/07/2004	X	X
SDSAD,		ADS		06/25/2004		
rturtjht,		dfhdthdf		06/08/2004		
EEEE,		EEEE		06/25/2004		
brumley,		July 1		07/01/2004	X	
brumley impala,		July 1		07/01/2004	X	
brumley impala big...		July 1		07/01/2004	X	
brumley impala std...		July 1		07/01/2004	X	
brumley impala std...		July 1		07/01/2004	X	
SDSDS,		SDASD		06/25/2004		
rtgrdfg,		sfgfd		06/08/2004	X	
fhgh,		sftfg		06/08/2004		
T,				04/15/2004		
kling, mike	4.5 ft to tref	taurus test 1		05/13/2004	X	X
kling, mike		taurus test 2		05/13/2004	X	X

Figure 6

New Job - Customer Details Entry



Purpose:

The purpose of the New Job Entry screen (Figure 7) is to record the customer, vehicle, job order and insurance company details. This information creates a job and stores the measurement information. The information recorded will be printed on the before and after repair reports. Technician names, insurance companies, claims adjusters and appraisers can be added to the job information by choosing them from

Customer Details	Vehicle Details
First Name: David	VIN: 308762NATO
Last Name: Cullum	Licence Plate: N5ARX
Company: Snap-on	Color: Tan
Address 1: 309 Exchange Ave	Mileage: 2650
Address 2:	
City: Conway	
State: AR	
Zip Code: 72032	
Home Tel: 501-123-4567	
Work Tel:	
Fax:	
Order Details	
Order Reference: 1234	
Technician: Greer, Jim	
Insurance Details	
Insurance Company:	
Claims Adjuster:	
Appraiser:	
Comments: Moon Runner	

Figure 7

pick lists. Names can be added to these pick lists directly at the job entry screen or in the administrative area of the program. Names can be edited if required.

Procedure:

- Type the appropriate information into each field. It is necessary to fill in the REQUIRED fields in order to proceed to the next step in the measuring process. The required fields are highlighted in yellow. They include Last Name and Order Reference.
- Use the [TAB] key to move to the next entry or simply click into the desired field.
- Once all the necessary information has been filled in, select “OK” to proceed to the next step in the job entry process.

New Job – Vehicle selection (Fig 8)

Purpose:

Select the vehicle for the job.

Procedure:

Use the mouse to select manufacturer, model, body style and the year OR press the [TAB] key to move from “Manufacturer” “Model” “Body Style” and “Year” selection areas.

Once in the selection area you can:

Use the scroll bars on the right side of the selection boxes to move up or down in the list.

OR

Use the up and down arrow keys

OR

Press the first letter of the selection you want to make.

Example:

Press [P] for Pontiac or Press [T] for Toyota. After vehicle is selected, click “OK” to proceed to the next step of the job entry process.

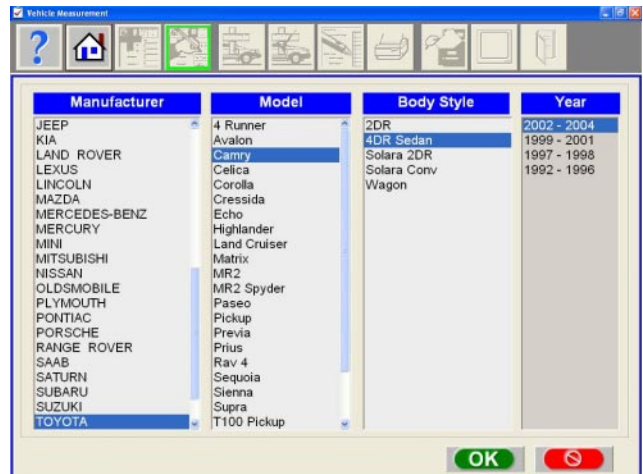


Figure 8

Select Before or After Repair

Since this is a new job, tell the program if the measurements to be taken are before repair, or after repair. Please make the choice in this window, then select [OK]. See Figure 9



Figure 9

New Job - Vehicle Area Selection



Purpose:

Selection of the area on the vehicle desired to measure for the job.

If it is desired to measure the lower body of the vehicle, make the selection of measuring:

- 2D measuring (Point to Point) or
- 3D measuring (X,Y,Z Lower Body Measurements).

A 3D or “XYZ” measuring session of the lowerbody will be discussed first.

Procedure:

1. In this screen, select the box “Lowerbody XYZ” (Fig 10)
2. The program will take you to the next screen in the measuring process.

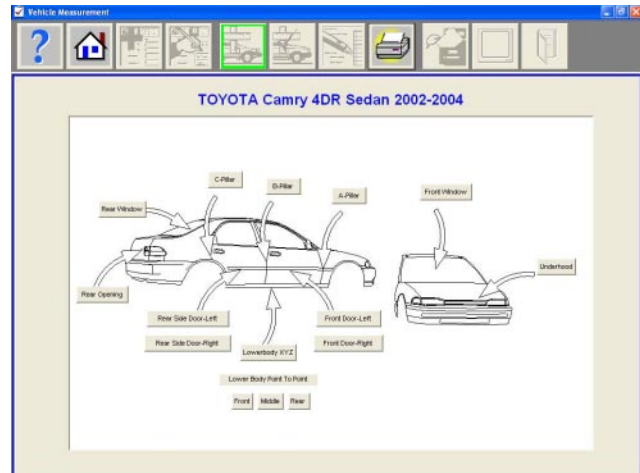


Figure 10

New Job – Measuring Screen

Purpose:

The Tru-Point™ system program has been setup to default to an automated measuring session with predetermined measuring points in each section of the vehicle which will verify the structural integrity of the vehicle.

The points highlighted in purple are the predetermined “setup” points. See Figure 11.

The points highlighted in blue are the predetermined “reference” points.

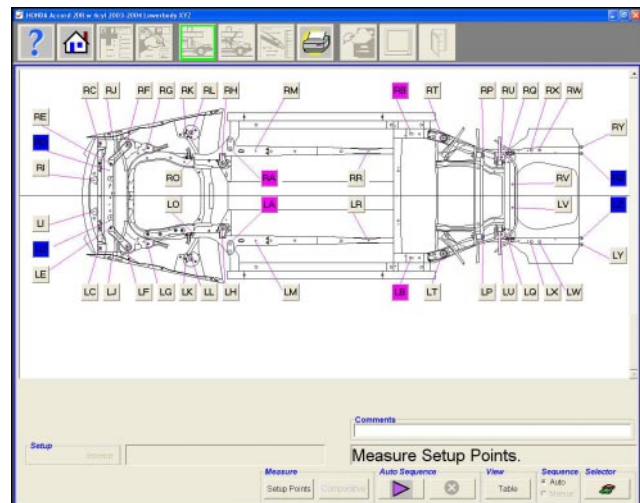


Figure 11

Once measuring has begun the yellow highlighted point is the location currently being measured.

NOTE: If it is necessary to measure other setup points than the programed predetermined points, select the change setup points button. The order in which points are selected will be the same order in which they will be measured.

Select the desired reference frame type with button highlighted in Figure 12.

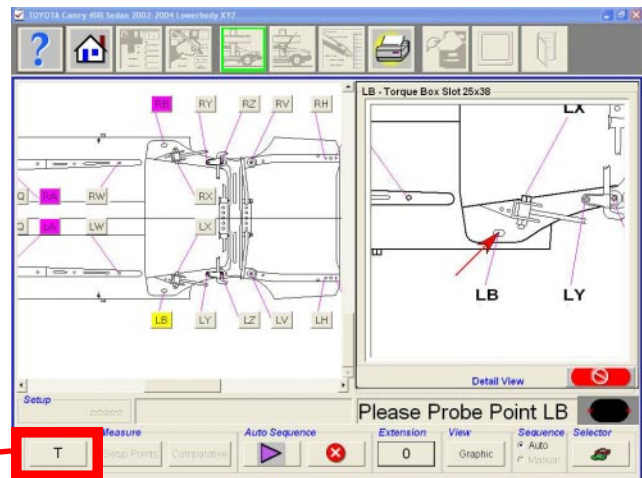


Figure 12

NOTE: Before proceeding vehicle measurement, make sure that the correct reference frame to be used has been identified in the measure screen. The icon button will toggle between the two choices (T and X). See Figure 12. Special attention must be made to prevent moving the frame once measurements have begun. If the frame is disturbed, *all readings* must be repeated. Figure 13

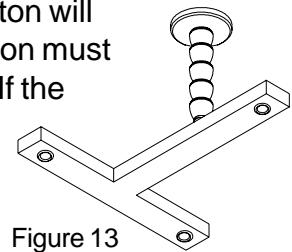


Figure 13

Procedure:

1. Select "Auto" from the Sequence selector box. (The Tru-Point™ system defaults to the "Auto" sequence mode)
2. Next select the Auto Sequence Start button to start the measuring process. The program will first step you through the measuring process of the 4 setup points. See Figure 14, Auto button contains purple colored arrow.
3. The screen will be split into two zoom areas of the first point to measure. See Figure 12.

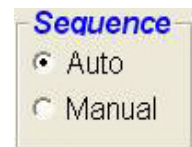


Figure 14

- Section zoom - On the left side of the screen, an overview of the area of the car being measured with the predetermined points to verify are highlighted in Purple.
- Point zoom - On the right side of the screen note a zoomed in view of the exact point to be measured first. If this view "is *not desired*, select "Disable" from the zoom feature in the box under "Zoom". A point description is included a the top of the point zoom box, in the illustration it states "Torque Box Slot 25 x 28mm", See Figure 15.

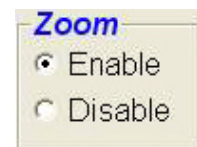


Figure 15

4. Please note the instruction box located just below the zoomed view of the point to be measured. **"PLEASE PROBE POINT LB"**. This area will instruct you what to do next.

- The **L** in front of the **B** stands for the **Left** or Drivers side of the vehicle

Tru-Point Operating Instructions

- If the point is a bolt head, stud, threaded end of bolt or a rivet, measure to the center of the tip of the point, as shown below. See Figures 16 and 17.
- If the point is a slot or a hole, either measure 2 (two) or 3 (three) sides. The program will prompt you on where to measure as shown below. See Figure 18

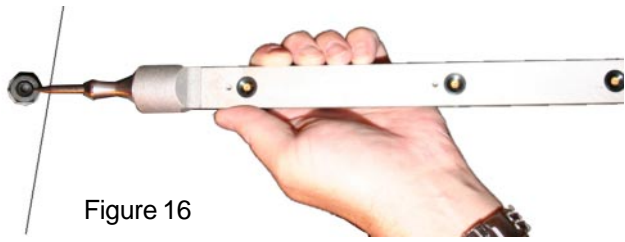


Figure 16

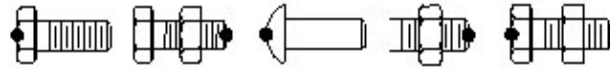


Figure 17

NOTE: Refer to the Appendix on page 23 for more illustrations of measurement points.

For a hole (3 sides)

Please probe point RA 

or

For a slot (2 sides)

Please probe point RO. 

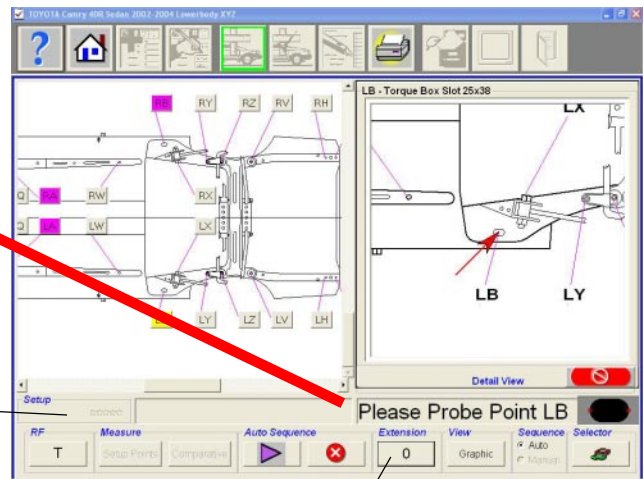


Figure 18

Add extensions here

Using the probe and switch box to take a measurement

1. Making sure that the probe LED face is facing the camera, place the pointer on the point you are about to measure.
2. If the light on the switch box is a steady red, the camera sees all the LED's on the probe and a measurement can be taken. Fig 19.
3. Hold the probe as steady as possible and press the green button on the switch box to take a measurement.
4. After pressing the green button, the light will change from red to off to green (Fig. 20) indicating a good measurement, proceed to next point.



Figure 19

NOTE: If the light on the switch box shows no color, the camera can not see any of the LED's

NOTE: The probe should be held as steady as possible, otherwise a message will appear on the screen warning of an "Unreliable Measurement". This point should be re-measured for best accuracy.



Figure 20

NOTE: If the light on the switch box flashes red, one or more LED's can not be seen by the camera, move the probe, camera or add extensions between the probe tip and probe until you get a steady red light. If you add extensions, the extension value must be entered into the program.

Adding Probe Extensions

To add extensions, select the "Extension" button, see Figure 18 for button location. The box as shown in Figure 21 will allow selection of the proper length. If the extension is used and not selected the measurements will be wrong and will require re-measurement of that point.

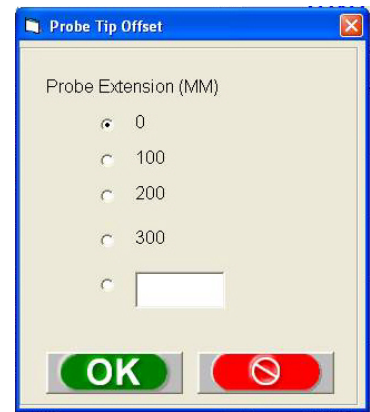


Figure 21

5. After the last setup point has been measured, a tabulation table of the measurement results (in mm) will appear on the right side of the screen.

Points that were measured

Actual Measured Values

Difference between Reference and Measurement values

The arrows found in the Difference column indicate the direction of the Difference (movement in the point), in relation to the vehicle graphic.

Points		Reference	Measured	Difference
LK	Length	2511	2503.4	→ 7.6
	Width	716	718.9	+ 2.9
	Height	870	863.5	↓ 6.5
RK	Length	2511	2506.8	→ 4.2
	Width	716	720.3	+ 4.3
	Height	870	860.8	↓ 9.2
LL	Length	2156	2155.5	→ .5
	Width	626	626.2	+ .2
	Height	957	958.6	↑ 1.6
RL	Length	2156	2158.9	← 2.9
	Width	626	626.3	+ .3
	Height	957	957.1	↑ .1
LM	Length	2100	2100.6	← .6
	Width	528	528.8	+ .9
	Height	933	935	↑ 2
RM	Length	2100	2102.8	← 2.8
	Width	528	530.1	+ 2.1
	Height	933	933.5	↑ .5

Figure 22

6. Review the Difference results found in the table and the Setup guide found in the lower left hand corner of the screen, and determine if the remainder of the control points that you wish to measure should be based off of these setup points.

Note the degree of conformance indicated by the gold stars in the lower left corner of the measure screen. If not happy with the setup results, and wish to remeasure the same setup points again or would like to select different setup points to measure, You may:

A. Click on the change setup points button and then the auto sequence start arrow to remeasure the same setup points, Or,

B. Click on the change setup points button, and then on the vehicle graphic; deselect all the current setup points and then re-select different points.

Note: The order in which the points are selected is the order in which they will be measured.

Note: To get a full vehicle graphic on the screen, click on the view graphic button. If it is necessary to view the side view of the vehicle graphic, use the scroll bar on the right of the window and scroll up.

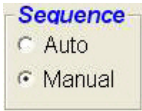
7. After measuring the setup points and being satisfied with the results, proceed to measure the remaining pre-selected points on the vehicle by clicking on the auto sequence start arrow. The program will sequence through the measuring of those points.

Manual Measure Mode

If all the pre-selected reference points have been measured, and would like to measure additional points

-Or-

The pre-selected points reference are not desirable.

1. Click on “Manual mode”  and select the points desired to measure. If it is the pre-selected points that are desired to change, deselect all the pre-selected points then select the new points to measure.

Note: The order in which the points are selected will be the same order that they will be measured.

2. After selecting the points, click on the “Auto Sequence” start arrow and the program will sequence you through the measuring of those points. Results again will appear as illustrated in Figure 17.

2D Mode

Other body and/or chassis areas can be selected and measured as a 2D or point to point measurement. Click on the Selector button on the measure screen to choose the area of measure. Areas include upper and lower body, underhood and rear opening, and doors and windows. The screen is shown in Figure 23.

1. Select the desired area of measure.
2. Place the reference frame on a location in camera view for the area to measure.

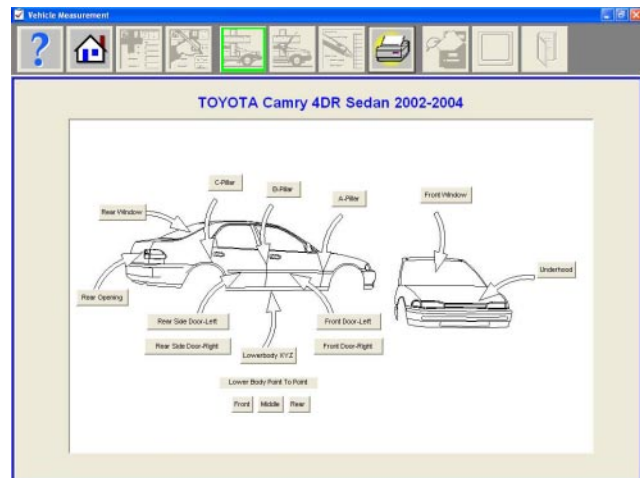


Figure 23

NOTE: Special attention must be made to prevent moving the reference frame once measurements have begun. If the frame is disturbed, all readings must be repeated.

3. Select the Auto Sequence start arrow and the program will sequence through the measuring of all the points. Reference, measured, and the difference between the two are displayed on the screen. The measurements in the table and on the graphics are color coded to display which measurements are within the user defined allowable tolerance. See Figure 24.

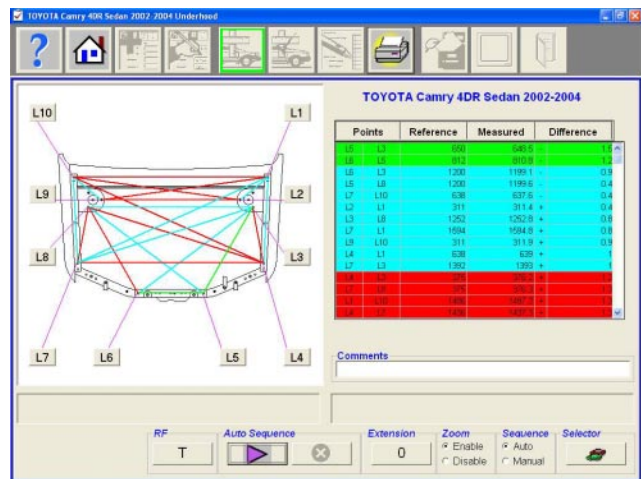


Figure 24

- Red - Out of tolerance, measurement too short
- Blue - Out of tolerance, measurement too long
- Green - Within tolerance

Note: The User definable allowable tolerance can be set in the administrative area



4. Available on the lower right side of the screen is an area for typing in comments related to the measuring of these points. The comments will be printed on the report if desired.

Administration



Purpose:

- The purpose for the administrative portion of the program is to backup, delete and restore customer files
- Add or modify adjuster, appraiser, insurance company and Tru-Point™ operator information
- Update the system with new vehicle data supplements
- Customize the Tru-Point™ measuring system for the body shop information, language desired to use, communication port and the user definable tolerance setting. See Figure 25.

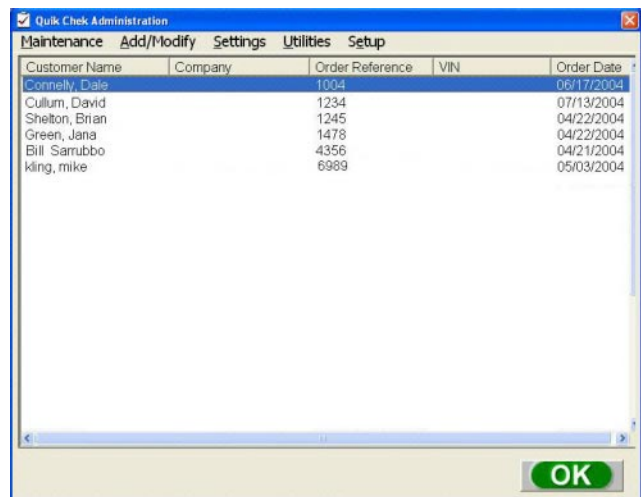


Figure 25

Procedure:

1. From the Main Menu, select the Administration Icon (F9).
2. Determine the function you desire to modify or amend.

Topics to select from are:

Maintenance

Backup
Delete
Restore

Add/Modify

Adjusters
Appraisers
Insurance Comp
Operators

Settings

This is used to set Tolerances, PC ports, Selection of Languages, and shop ID setup

Utilities

File Transfer
Update
Retrieve

Setup

Used for Service Personnel only

Print Options



Purpose:

Select certain areas of the job to include in the report. Only the areas that were measured will be displayed as an option to print. See Figure 26

Procedure:

1. Determine the information to include on your report by placing a check mark in the appropriate boxes.
2. Click in the check boxes of the measurement areas desired to print to the report.
3. After making the selections, click on the arrow key to see a preview of what the report will look like. Check it carefully, if there are areas that needs to be changed, just click cancel at the top of the screen and the program will return to the print option choices.

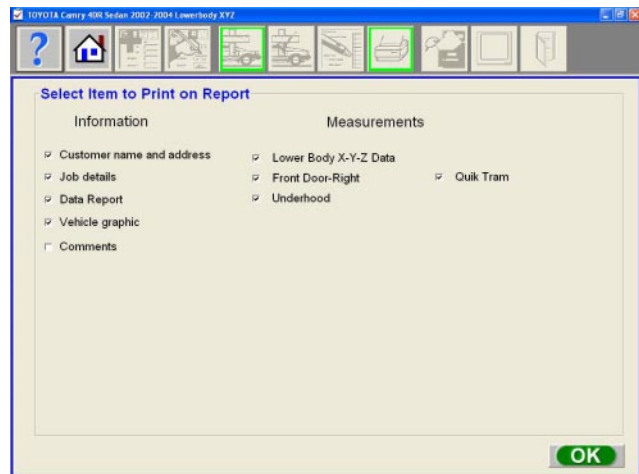


Figure 26

Other Features: Quik Tram

Tram Bar Measure



Purpose:

Allows the user to measure just about anything. This feature can be thought of as a precision electronic tape measure or electronic Tram Bar. Objects that generally do not have comparative specifications, such as custom built chassis, race car applications, suspension geometry symmetry. The list is endless for the use of a point to point measuring device.

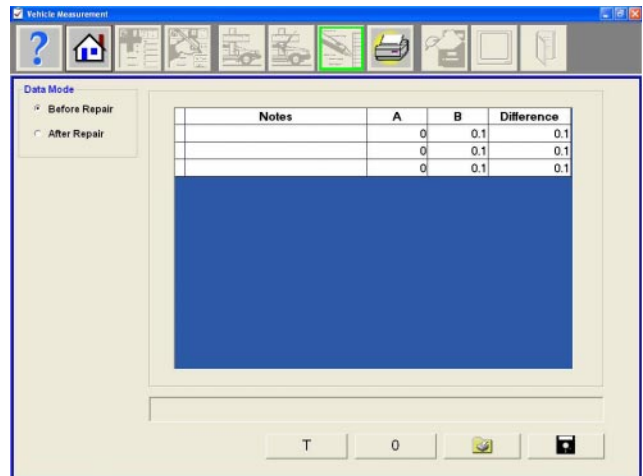


Figure 27

Procedure:

Select the Quik Tram Icon from the Home Menu, Select “Before” or “After” measure from the selection box on the left side of the screen. Make the desired measurements as you would with a tram bar. Two measurements are required for a result to come up in the “A” column. Now measure the same two points on the other side of the vehicle or the object you are measuring for the result to come up in column “B”. The measurements will be compared and the difference shown.

A note area is provided for entering a description of what was measured. Just click into the open note space to enter remarks. See Figure 27.

Edit Existing Job



Purpose:

Selection of the “Edit Existing” Icon allows the user to modify a record or file already stored in the system. This is very useful for quick changes in data such as changing the name of the Technician, or insurance carrier.

Procedure:

From the main screen select or highlight the desired record to modify. Select the “Edit Existing” Icon. Make any desired changes to the desired fields. By “Right Clicking” the mouse on record, that record can be duplicated as a new job.

Fleet customers: You don't need to enter all the information again. Right click on top of the job listed in the home screen and edit as a new job. This will copy the file to a new job.

Important Messages

Several messages may appear during the normal measurement process. These messages are meant to alert the user to abnormal or less than desirable conditions that may degrade or hinder the measurement process. Messages also alert the user to a blocked camera, reference frame or probe.

“Reference Frame Error”

This message appears when the camera cannot see reference frame. In the event of a blocked view, remove the obstruction or move the camera. See Figure 28.

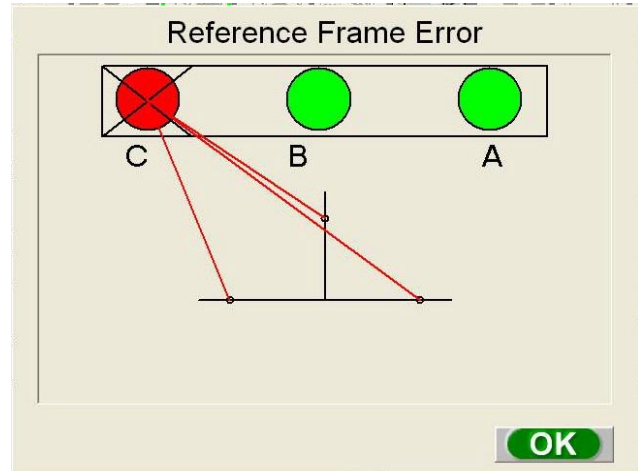


Figure 28

“Probe Error”

This message indicates the probe is not being recognized by the camera. Move the probe, or add extensions as required. If extensions are added the proper length must be selected. See Figure 29

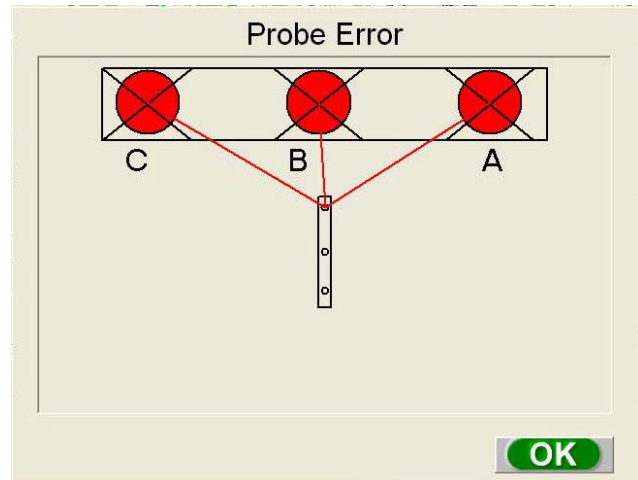


Figure 29

IMPORTANT!!!! DO NOT DISTURB OR MOVE THE REFERENCE FRAME ONCE POSITIONED. MOVING THE FRAME WILL INVALIDATE ALL FURTHER MEASUREMENTS.

“Unreliable Readings”

In the event the camera detects a “Wobble” or erratic readings the message below warns the user that the readings may be unreliable. In this case, the user should re-measure that location. See Figure 30 for example of the message.

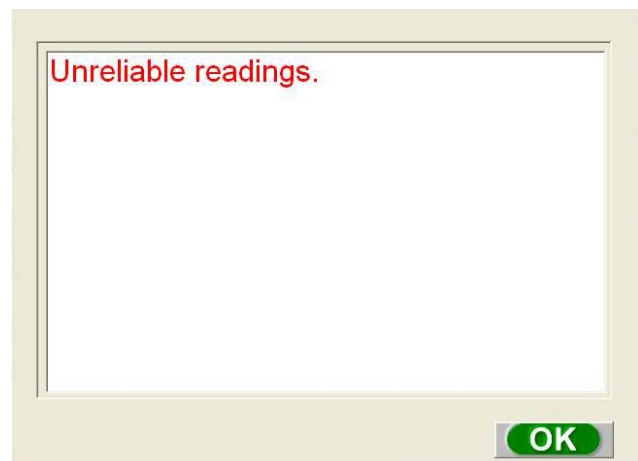


Figure 30

“Setup Points Exceed Allowed Tolerance”

In the event the setup measurements exceed the values referenced in the data base, the message in Figure 31 will warn the user to inspect the procedure, determine if there is damage in the area of reference and re-measure. If the area of setup appears to have sustained damage, select alternate reference points and re-measure.

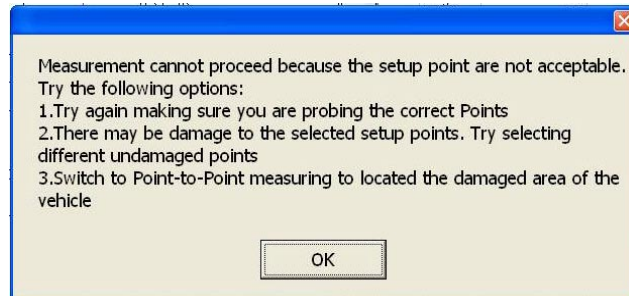


Figure 31

Appendix

Types of point data locations

Point Data Locations - MISC - (All Directions)				
Type	Stud / Thrd End Bolt	Rivet	Torx Head	
View	Angled			
	Front			
	Side			

Point Data Locations - BOLTS - Facing Side, Up, Front & Rear				
Type	Flat head	Concave - Flat	Concave - V	
View	Angled			
	Front			
	Side			

Point Data Locations - SLOTS - (All Directions)				
Type	Punched	Turned Out	Turned In	
View	Angled			
	Front			
	Side			

Point Data Locations - HOLES - (All Directions)				
Type	Punched / Threaded	Turned Out	Turned In	
View	Angled			
	Front			
	Side			

Point Data Locations - BOLTS - Facing Down				
Type	Flat head	Concave - Flat	Concave - V	
View	Angled			
	Front			
	Side			

Preventative Maintenance

To ensure that the Tru-Point™ system stays in good working condition, take the following steps every couple of weeks.

1. Check all cables for cuts, wear, etc. and replace as needed. It is not recommended that you attempt to splice the cables.
2. Clean the LED's on the hand held probe and Reference Frame using glass cleaner and a soft lens cloth.
3. Clean the lenses of the Camera using a soft lens cloth.
4. Clean metal shavings off of the attachment magnets. (Use a rag, air hose) (Wear safety glasses)
5. Replace the hand held probe or extensions if the magnets are broken.

Troubleshooting

Monitor:

Situation: No picture

Problem: Not connected, no power

Solution: Check the power lamp of the monitor. If it is off, turn on the monitor. Reconnect. Check and retighten connection. Bad connection

Situation: Different colors

Problem: Extension magnet placed too close to screen

Solution: Need to Degauss monitor through monitor controls.

Printer:

Situation: Not working, Nothing printing on paper

Problem: The printer is turned off, The printer is OFF-LINE, The paper supply is empty, Not picking up paper
Dirty printer, Too much paper in tray, Too much humidity, No ink in cartridge

Solution: Check the power lamp of the printer. If it is off, turn on the printer. Turn the printer to the ON-LINE mode. Load new paper according to the printer operation manual. Remove paper down to 1/4" Fan Paper. Clean printer thoroughly. New installation did not remove tape covering jets. Clean jets on cartridge. Change cartridge.

Computer:

Symptom: Error ready drive "a"

Problem: Dirty disc drive, Bad cmos error message, Dead cmos battery

Solution: Use a floppy drive cleaner. Change computer battery - reload default settings.

Measuring Issues

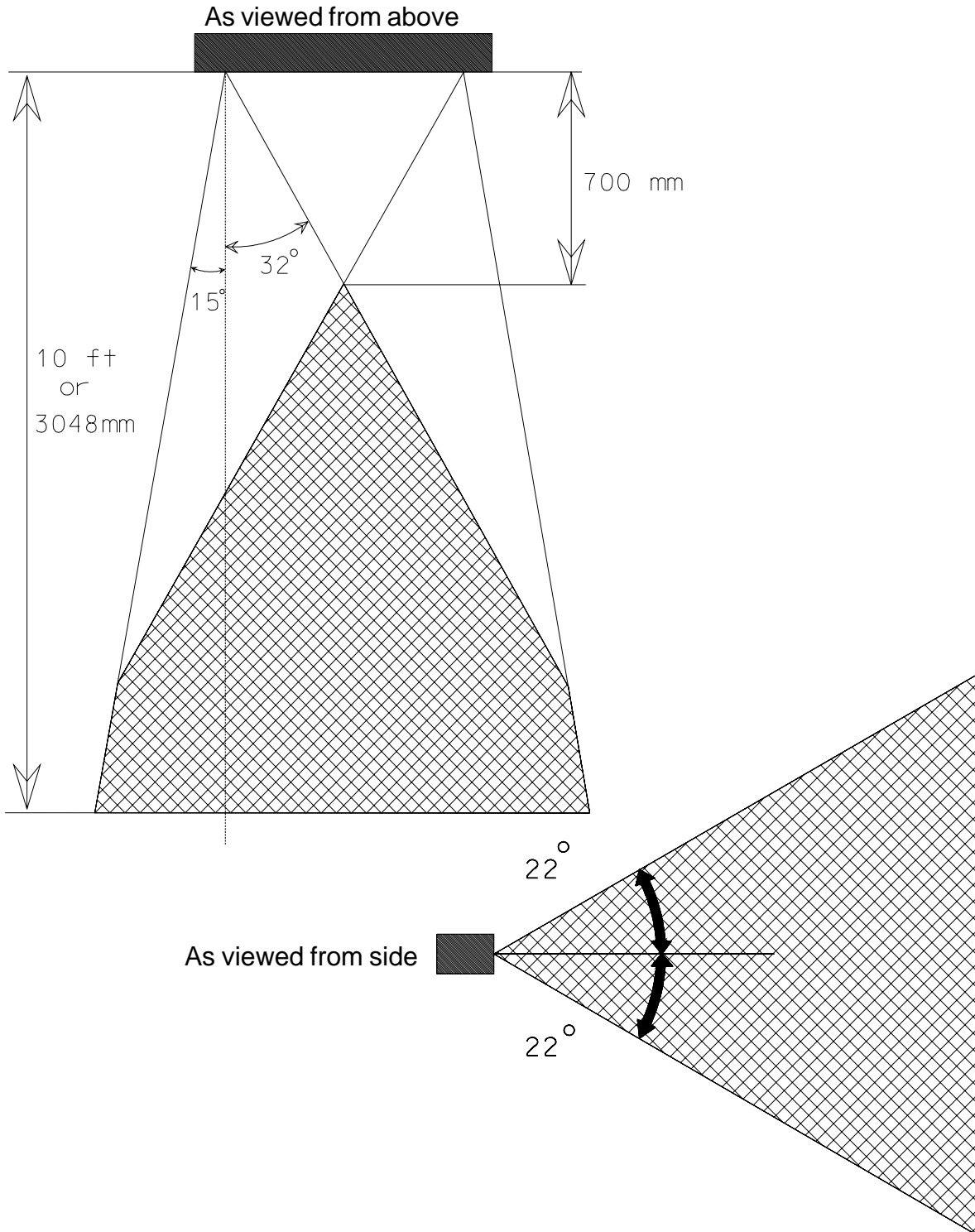
Symptom: Height, length and width deviations appear incorrect.

Problem: Incorrect point measured. Extension was used but was not told to the program. Metal chips between probe and probe pointer mating surfaces. End of probe point is damaged

Solution: Remeasure correct point. Enter the correct extension value into the program. Remove metal chips with a rag. Replace probe pointer.

Camera Field of View

The shaded areas are where the targets or probes must be located in order for the system to produce a measurement. *It is not enough for one or two of the cameras to see a particular probe. All three cameras must see all three LED's on the probe and at least three LED's on the Reference Frame.*



**KANSAS JACK
COMPUTERIZED ELECTRONIC MEASURING SYSTEM
LIMITED WARRANTY
PROFESSIONAL USE**

What the Warranty covers:

Kansas Jack, division of Equipment Services, Inc. warrants all parts of its Computerized Electronic Measuring System, sold to the original end user, are free from defects in materials or workmanship under normal use during the Limited Warranty Period.

What the Warranty does not cover:

Kansas Jack, division of Equipment Services, Inc. does not cover parts damaged due to misuse, alteration, lack of maintenance, damage, corrosion, exposure to chemicals, non-standard installation, abuse or accident. This warranty does not cover products repaired by anyone except Kansas Jack authorized personnel.

What the period of coverage is:

Commencing at the date of product delivery:

All Components:	1 year Parts and Labor
Printer:	90 Day Parts and Labor

How you (the customer) can get service:

Contact your local Kansas Jack sales representative or contact Kansas Jack at 1-800-582-5215.

What will we do to correct the problem:

During the warranty period, Kansas Jack, division of Equipment Services, Inc. will repair or replace the defective components of the electronic measuring system. A Return Goods Authorization is required for products, which are returned to Kansas Jack, and they must be sent prepaid. Replaced or repaired products will be returned to you freight prepaid.

How State Law Relates to the Warranty:

This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.

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**Equipment Services, Inc.
309 Exchange Ave
Conway, Arkansas 72032**



Tru-Point

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