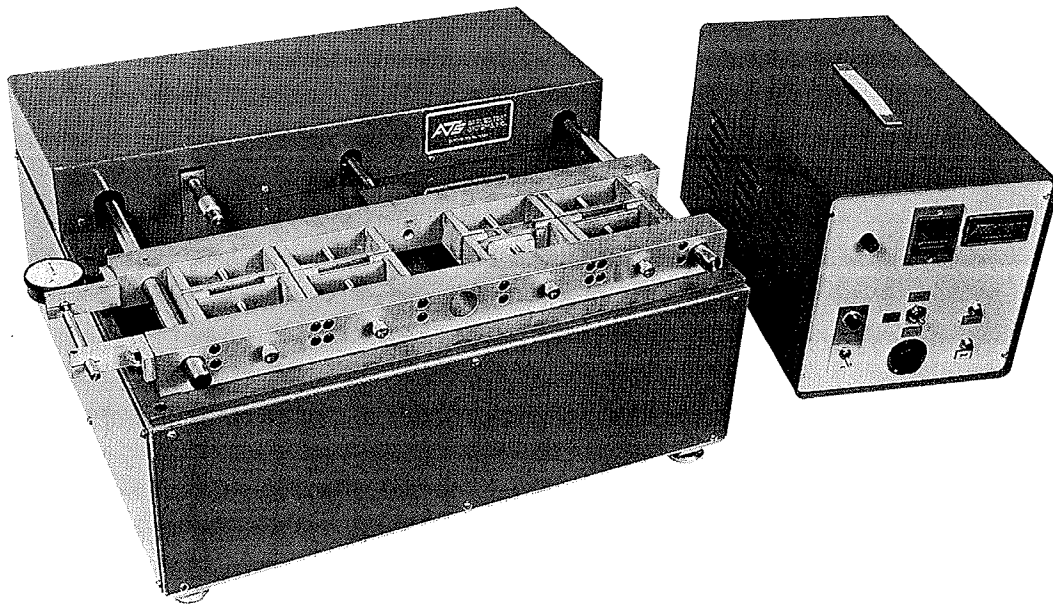




**System Overview**  
**Safety**  
**Setup & Installation**  
**Operation**  
**Maintenance**



## **Series 510 Horizontal Sealant Tester**

ATS 23004 04/97

**Second Edition, April 1997**

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Comments or suggestions pertaining to the contents of this manual can be sent to:

Editor/Technical Manuals  
**Applied Test Systems, Inc.**  
348 New Castle Road  
P.O. Box 1529  
Butler, PA 16003

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**Applied Test Systems, Inc.**  
384 New Castle Road · P.O. Box 1529 · Butler, Pennsylvania 16003 U.S.A.  
Telephone: (412) 283-1212 · FAX: (412) 283-6570  
Online: <http://www.atspa.com>

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# Series 510 Horizontal Sealant Tester

## Instruction Manual

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# Preface

## Unpacking


Retain all cartons and packing materials until the unit is operated and found to be in good condition. If damage has occurred from shipping, notify Applied Test Systems and the carrier immediately. If it is necessary to file a claim, retain the packing materials for inspection by the carrier.

## Warranty

All ATS, Inc. manuals are shipped with a warranty. Units have a warranty against defective parts and workmanship for one full year from date of shipment. See the back page of this manual for details.

## After-Sale Support

If you have any questions concerning the operation of your unit, contact our Service Department. Before calling, please obtain the serial number from the equipment's data tag (shown below) and prepare to give a complete problem description to our Service Representative.

	NO.	
	AMP	VAC
	PHI	HZ

# Section 1. System Overview

## 1.1 General Description

Applied Test System's Series 510 Horizontal Sealant Testers are used to perform cyclic tension/compression tests on joint sealing compounds. This tester may be used alone or with a refrigeration unit for testing requiring lower temperatures.

The top view of a typical tester is shown below in Figure 1. ATS's Series 510 Sealant Testers are designed to perform Aymar type tests at 0.125 in./hr., with a 9,999 cycle maximum. Typically, these testers have 4 test stations with a maximum load capacity of 1,000 lbs. for each station. Special grips hold the specimen in place during testing, and crosshead travel is controlled by thumb screw adjustable limit switches. A direct readout of crosshead displacement is provided by a dial gauge. A handwheel is an available option for easy specimen loading.

Controls are easy to use. Control cabinets are equipped with a power switch, a motor control, a cycle counter, a start test, and a stop test pushbutton. Refer to Section 3 for details about Sealant Tester Controls.

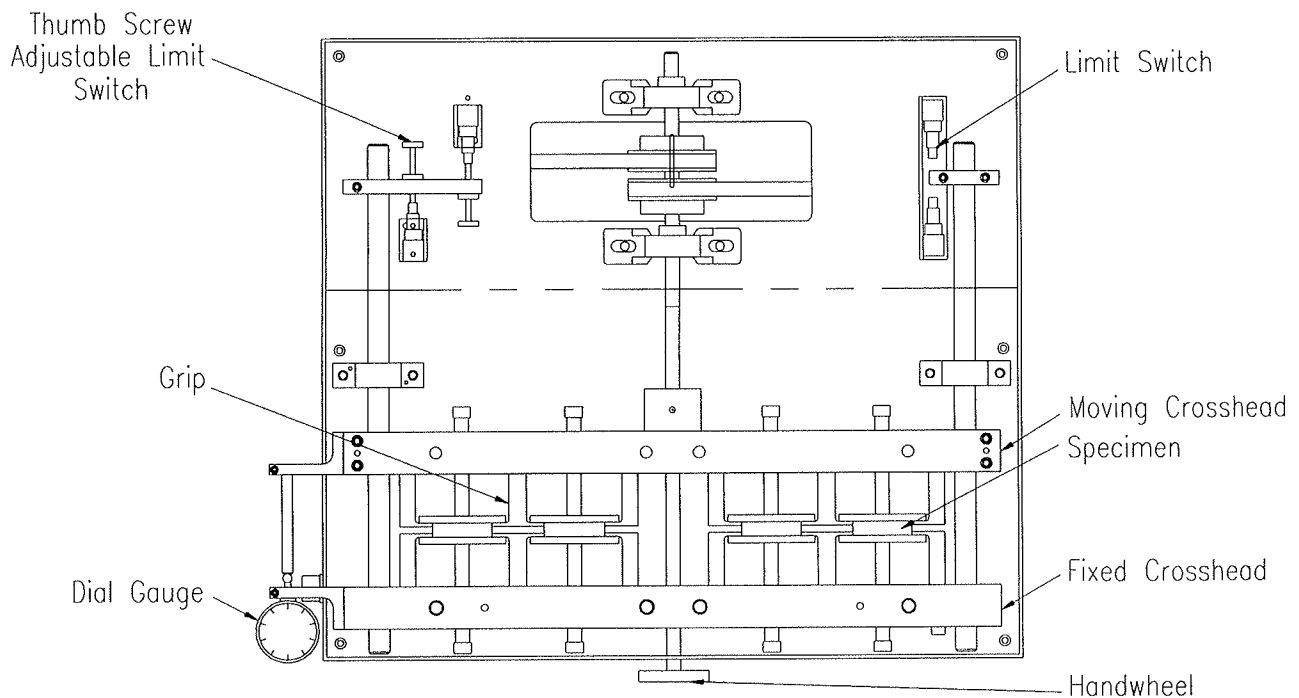


Figure 1, Horizontal Sealant Tester (Top View with Cover Off): General Overview

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# Section 1. System Overview

## 1.2 Specifications

Below is a list of standard specifications for the Series 510 Horizontal Sealant Testers.

Mode of Operation:	Aymar Standards
Load Capacity:	1,000 lbs. per station
Station Number:	4 (standard)
Cycle Counter:	0 - 9,999 cycles
Speed:	0.125 in./hr.
Electrical Requirements:	115 VAC, 1 phase, 60 hz (standard)

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## Section 2. Safety

### 2.1 For Owners, Operators, and Maintenance Personnel

Read and understand all instructions and safety precautions listed in this manual before installing or operating your unit. If you have any questions regarding operation of the unit or instructions in this manual, contact our Service Department.

In addition to the safety warnings listed below, warnings are posted throughout the manual. Read and follow these important instructions. Failure to observe these instructions can result in permanent damage to the unit, significant property damage, personal injury or death.

#### 2.1.1 Warnings

The following statements are warning statements. Unlike caution statements, warning statements alert the operator to conditions that may injure personnel. Operators must be aware of these conditions in order to prevent injuries that may occur while operating this equipment.

**Thoroughly understand the safety features and operation of the equipment.** This manual will provide operators with safety concerns and general procedures. Be familiar with correct operating principles and use good judgement. Also refer to the appropriate manuals for system component safety instructions and operating procedures.

**Disconnect electrical power before changing the specimen and performing maintenance work.** Failure to disconnect power may result in personnel injury.

**Before applying power to the tester, replace all covers.** Covers are designed to protect equipment and personnel. Do not operate the tester without the appropriate covers in place.

#### 2.1.2 Cautions

The following statements are caution statements. These statements alert the operator to conditions that may damage equipment. Operators must be aware of these conditions in order to ensure safe operation of this equipment.

**Do not remove or relocate factory-set microswitches.** Refer to Figure 2 for location of factory-set limit switches. Microswitches prevent crosshead overtravel in the event of adjustable limit switch or relay failure.

**Carefully position the dial gauge.** Do not position the dial gauge so the plunger is driven past the gauge limits, or damage to the gauge may occur.



## Section 2. Safety

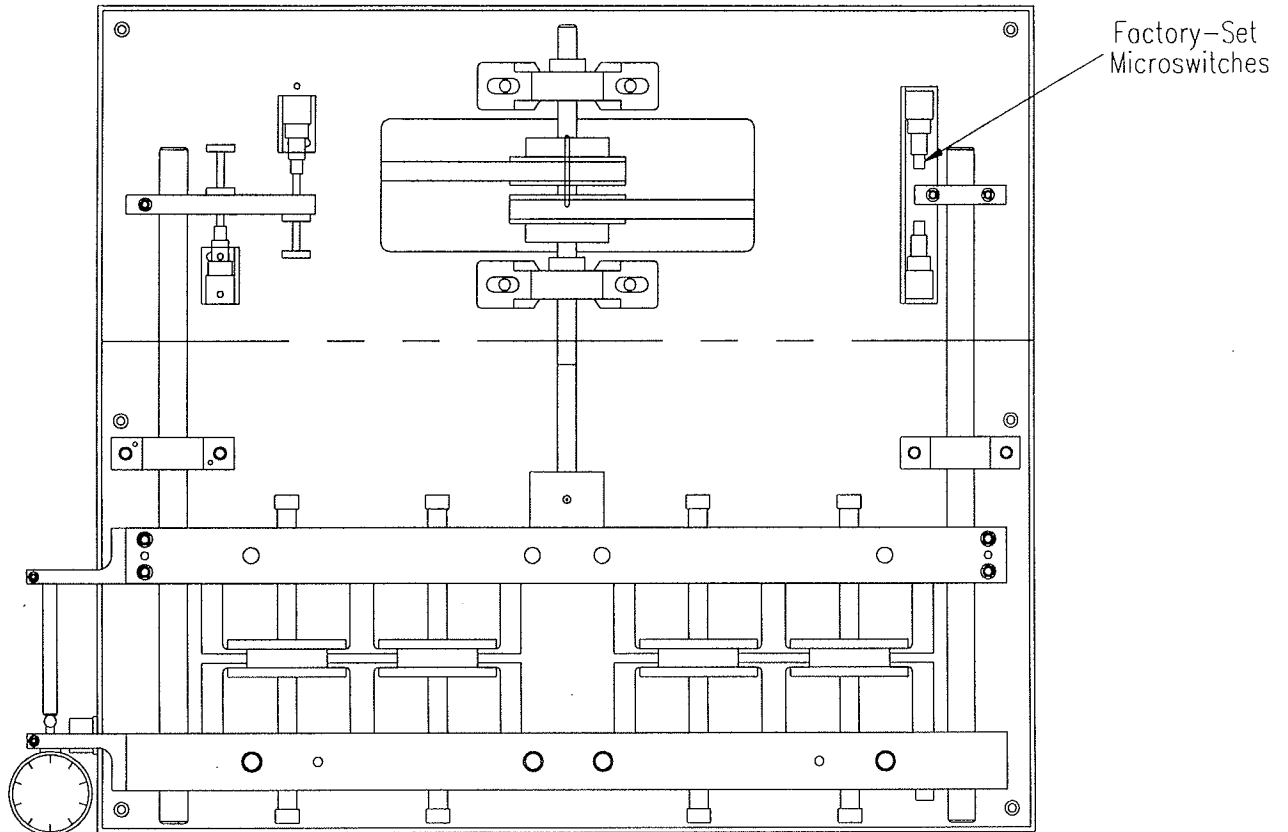


Figure 2, Factory-Set Limit Switch Location on ATS Series 520 Horizontal Sealant Testers  
(Tester Shown with Cover Off and No Handwheel Option)

## Section 3. Controls

### 3.1 Control Cabinet Controls

The controls listed below are typically located on the control cabinet of the Horizontal Sealant Tester. Refer to Figure 3 below.

**Main Power Switch** - This switch provides power to the Tester. A main power indicator illuminates when power is on.

**Start Test** - When this button is pushed, the moving crosshead starts the motor drive for Aymar testing.

**Stop Test** - When this button is pushed, the moving crosshead stops.

**Cycle Counter** - During testing, this counter displays the number of remaining cycles. The machine automatically shuts off when the number of remaining cycles is 0 (zero).

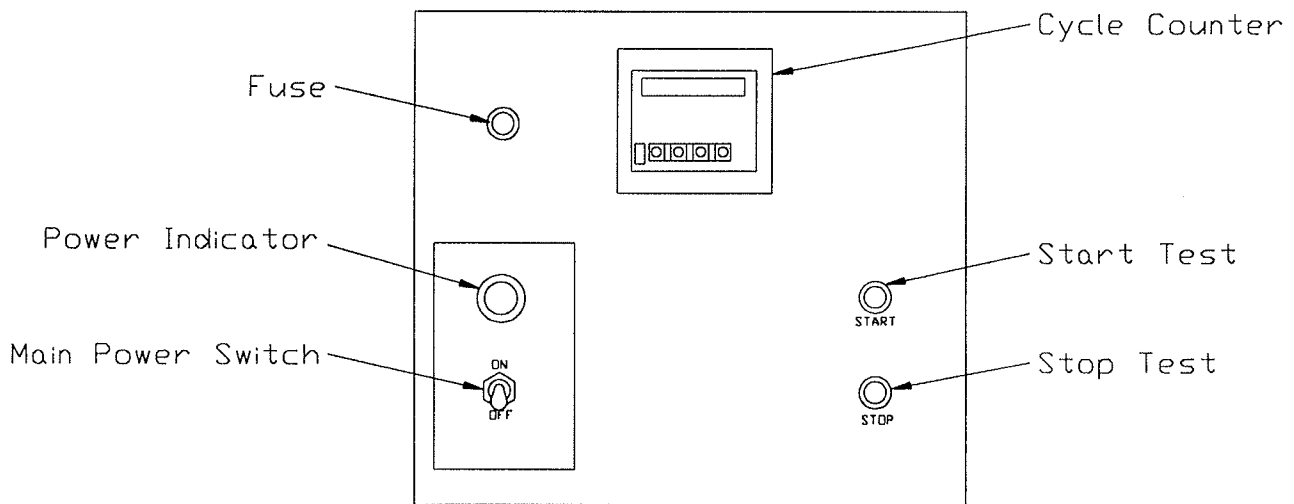


Figure 3, Series 510 Horizontal Sealant Tester Controls

### 3.2 Other Controls

The Horizontal Sealant Tester is also equipped with **thumb screw adjustable limit switches** in order to control specimen tension and compression through crosshead displacement. The adjustable limit switches are accessed by removing the top cover to the Horizontal Sealant Tester.

A **dial gauge** provides a reading of crosshead displacement.

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# Section 4. Installation

## 4.1 General Installation

The following procedure describes how to position and connect an ATS Horizontal Sealing Compound Tester.

1. Carefully remove the shipping crate and packing materials from the tester. Do not discard the packing materials until all items on the invoice have been accounted for.
2. Remove the testing machine and control cabinet from the shipping pallet and position them in the desired location. Adjust the isolator mounts to level the testing machine and provide even support to the test frame.
3. Connect the cables between the testing machine and control cabinet. The distance between the control cabinet and tester is limited by the length of the control cable. Additional cable can be obtained by contacting ATS.
4. If equipped, connect the temperature controller and the refrigeration unit.
5. Provide electrical power with ground according to the power requirements found on the tester's data label.

**Caution:** Before energizing electrical power to the tester, turn off all power switches on electrical components and place all controls in the Off or Neutral position.

## Section 5. Operation

### 5.1 Specimen Loading

Series 510 Horizontal Sealant Testers are available with or without a handwheel. Perform the steps below, in order to load the specimen. Refer to Figure 4 if necessary.

1. Disengage the clutch and rotate the handwheel in order to position the crossheads far enough apart to permit specimen installation. If your tester is not equipped with a handwheel, turn the power On and press the Start Test button. Press the Stop Test button when the specimen grips are far enough apart to permit specimen installation. If necessary, remove the cover and adjust the tension and compression thumb screw adjustable limit switches to achieve clearance for loading.

**Note:** Do not advance the moving crosshead beyond the actuation points of the limit switches. This may cause limit switch failure and could result in damage from crosshead overtravel.

2. Insert the specimens, and adjust the set screws until contact is made with the specimen back-up plates.

**Caution:** Avoid off-center specimen loads.

3. If your model is equipped with a handwheel, re-engage the clutch before setting limit switches.

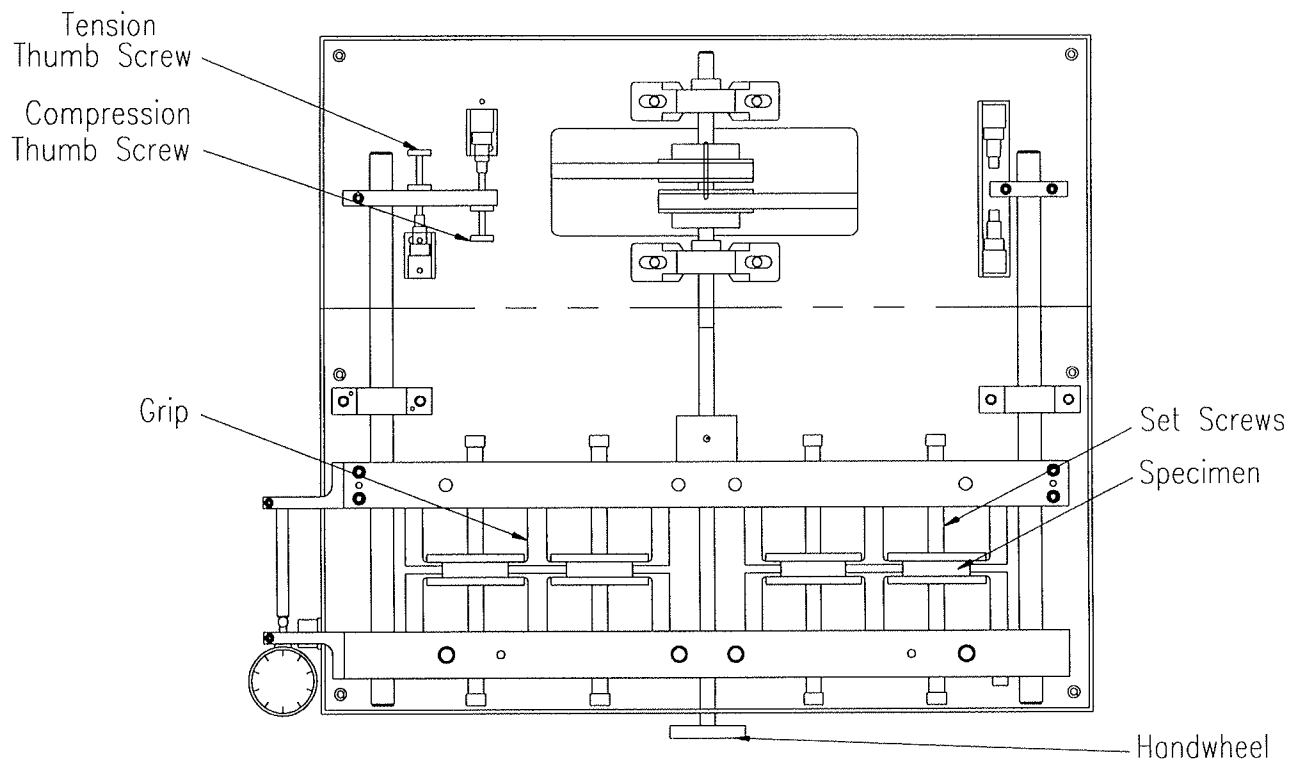


Figure 4, Horizontal Sealant Tester (Top View with Cover Off): Specimen Loading

## Section 5. Operation

### 5.2 Setting Minimum Crosshead Limits

1. Turn the Main Power Switch off.
2. Remove the cover in order to access the thumb screw adjustable limit switches.
3. Adjust the tension and compression thumb screw adjustable limit switches until the actuator and the dial gauge plunger come in contact as shown in Figure 5.
4. Zero the dial gauge by rotating the dial gauge face.

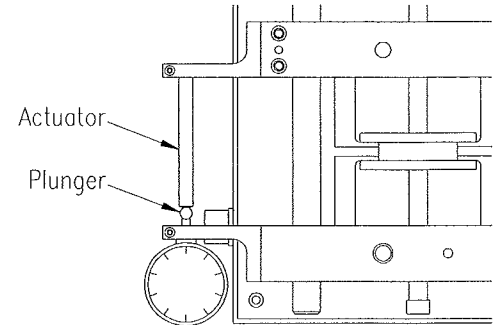


Figure 5, Setting Minimum Crosshead Limits

### 5.3 Setting Maximum Crosshead Limits

1. Adjust the compression thumbscrew adjustable limit switch to obtain the desired compression crosshead displacement. Read the dial indicator while setting the displacement.
2. Adjust the tension thumb screw adjustable limit switch to obtain the desired tension crosshead displacement as displayed on the dial gauge.
3. Replace the cover.

### 5.4 Operation

1. Turn the Main Power Switch On.
2. Select the intended number of cycles on the cycle counter.
3. Push the start button to begin testing operations.

**Note:** The cycle counter will show the number of remaining cycles.

4. When the total number of cycles has been completed, the machine will automatically shut off.

## **Section 6. Maintenance**

### **6.1 Component Maintenance**

Refer to the manufacturer's literature for maintenance instructions of tester components.

### **6.2 Preventive Maintenance**

Clean and grease the screw drive as needed. Grease the pillow blocks as needed. Use Pennzoil 712 Pennlith EP or equivalent.

### **6.3 Corrective Maintenance**

Before performing any maintenance procedures, consult with Applied Test System's Service Department. Refer to page 2 of this manual for contact information.



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