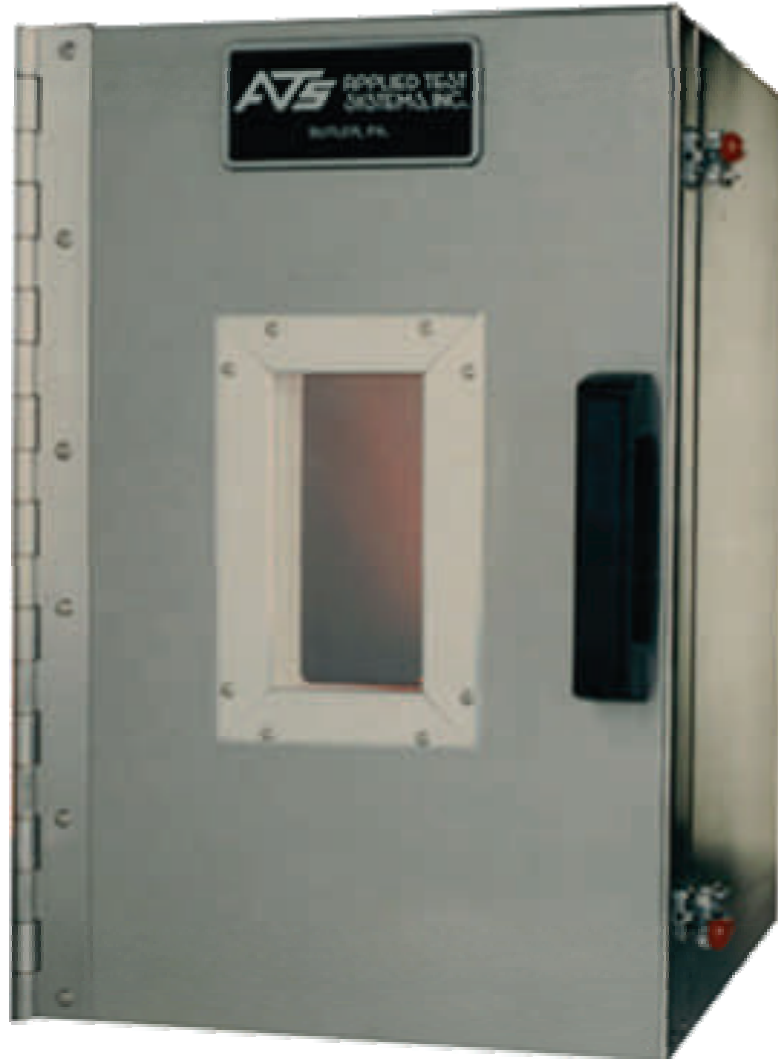


# Ovens

## Standard and Custom



**Precise, Efficient, and Reliable  
Ovens for Testing, Laboratory, and  
Industrial Processes  
Made to Your Specifications**

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## ***Laboratory and Industrial Ovens from ATS***

Since 1965, Applied Test Systems, Inc. (ATS) has manufactured standard and custom ovens for a wide range of testing , laboratory, and industrial processes.

Ovens performing materials testing are designed to mount on testing frames manufactured by ATS, Inc. and other companies. Ovens may be used during any of the following tests: tension, compression, shear, flexure, creep/stress rupture, stress relaxation, constant stress, and adhesive/sealant testing.

Manufacturing and laboratory process ovens may be used for applications such as annealing, baking, bonding, curing, drying, pre-heating, heat treating, stress relieving, and reactions.

ATS offers three (3) standard series of ovens that are available in box and split box construction. All ovens have a stainless steel external shell and are constructed in standard and custom sizes to meet special customer requirements. Custom mounting arrangements can also be designed to suit your needs.

Outstanding design features include quality insulation, recirculating air and plenum system, continuous door hinge, resilient seal, quick acting latch closure, and a stainless steel shell. (see page 4 of this bulletin for more information about design features).

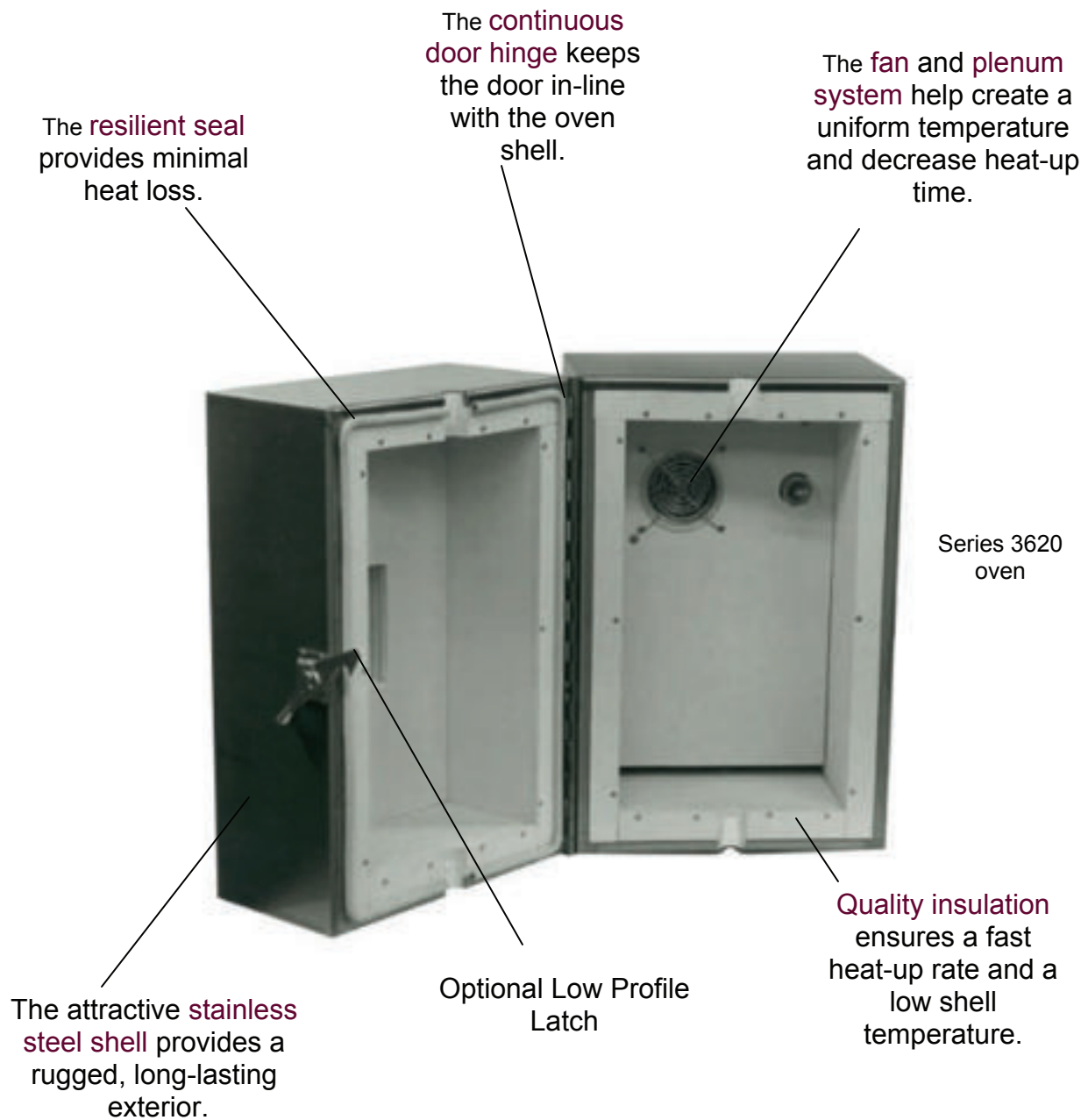
Oven accessories can be ordered separately or with an oven. Some of these accessories include mounting brackets, cooling apparatus, temperature controllers, retorts, view ports, and portable dollies.

In addition to furnace systems, ATS manufactures a complete line of laboratory testing machines and accessories, including universal testing machines, creep/stress-rupture test frames, convection ovens/cryogenic cooling chambers, pressure testing systems, asphalt testing equipment, and sealant testers, as well as grips, fixtures, load train components, extensometers, ultrasonic reference standards, and more. Come to ATS for all of your materials testing concerns, and you can rest assured that the equipment delivered to your facility will precisely meet all of your needs and expectations.

# Features

The outstanding design features described below are used in all ovens made by Applied Test Systems, Inc. These features make ATS ovens among the most durable and efficient ovens manufactured today.

ATS ovens can be designed to meet our customer's specifications. Call an ATS Sales Engineer today for more information: 724-283-1212.



## Series 3600 Ovens

The Series 3610 Box and 3620 Split Box Ovens have stainless steel shells and hard faced insulation interiors. The temperature range for this oven type is from -155°C to 425°C (-250°F to 800°F).

**Series 3610 Box Oven**  
with view port on front door  
and internal light



**Series 3620 Split Box Oven**  
With offset hinge, slide assembly, and  
load train ports



## Specifications

Dimensions (in.)						Watts
Internal			External			
W	D	H	W	D	H	
4	4	15	7	10	18	500
6	6	15	10	13	19	760
8	8	15	12	15	19	900
10	10	18	14	17	22	1350
12	12	20	16	19	24	1800
14	14	22	18	21	26	3300
16	16	24	20	23	28	4400*
18	18	26	22	26	30	4950*
20	20	28	24	28	32	6600*

Standard View Port Sizes (in.)
2W x 6H
3W x 6 H
4W x 6 H

### Standard Power:

120 VAC, 1 ph., 50/60 Hz.

### Optional Power:

240 VAC, 1 ph., 50/60 Hz.

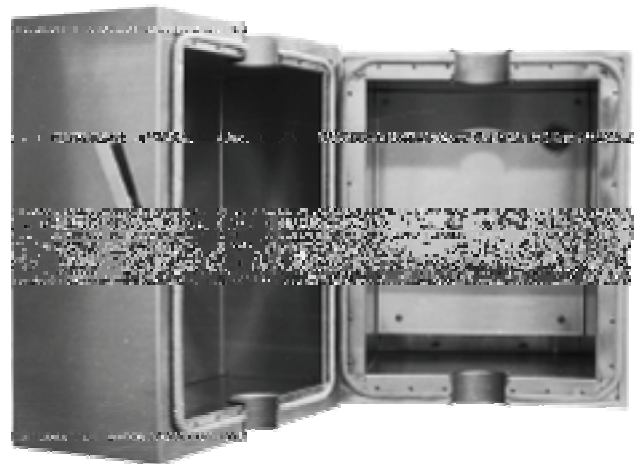
\* Only available in 240 VAC, 1 ph., 50/60 Hz power.

## Series 3700 Ovens

The Series 3710 Box and the Series 3720 Split Box Ovens have stainless steel internal liners and external shell, so the oven is rugged and easy to clean. The temperature range for this oven is from -155°C to 425°C (-250°F to 800°F). A double plenum feature is added for superior temperature uniformity.

**Series 3710 Box Oven**  
with view port, load train ports, and injector assembly for cryogenic cooling

**Series 3720 Split Box Oven**  
with mounting brackets and low-profile latch with an extension



## Specifications

Standard View Port Dimensions (in.)
2W x 6 H
3W x 6 H
4W x 6H
Other sizes available on request

Standard Load Train Port Sizes (in.)
1/2 in. *
15/18 in *
1 7/8 in. *
3 1/8 in. *
4 1/8 in. *
4 7/8 in. *
Other sizes available on request

Dimensions (in.)						Watts
Internal			External			
W	D	H	W	D	H	
6	6	15	11 1/2	16	20 1/2	760
8	8	15	13 1/2	18	20 1/2	900
8	8	21	13 1/2	18	26 1/2	1350
10	10	18	15 1/2	22	23 1/2	1800
10	10	21	15 1/2	22	26 1/2	1800
10	10	24	15 1/2	22	29 1/2	1800
10	10	26	15 1/2	22	31 1/2	1800
12	12	20	17 1/2	24	25 1/2	2200
14	14	22	19 1/2	26	27 1/2	3300
14	14	24	19 1/2	26	29 1/2	3300
14	14	26	19 1/2	26	31 1/2	4400*
16	16	24	21 1/2	28	29 1/2	4400*
18	18	26	23 1/2	30	31 1/2	4950*
20	20	26	25 1/2	32	33 1/2	6600*

**Standard Power:**  
120 VAC, 1 ph., 50/60 Hz.

**Optional Power:**  
240 VAC, 1 ph., 50/60 Hz.

\*Only available in 240 VAC, 1 ph., 50/60 Hz power

## Series 3700 HT Ovens

The Series 3710 High Temperature (HT) Box and 3720 High Temperature Split Box Ovens have the same stainless steel and double plenum construction as the 3700, along with some additional features. Twice the insulation is necessary for the higher temperature range of -185°C to 620°C (-300°F to 1150°F), and the power requirements are higher than that of the Series 3700.



## Specifications

Dimensions (in.)						Watts
Internal			External			
W	D	H	W	D	H	
6	6	15	14	20 ½	23	1000
8	8	15	16	23	23	1250
8	8	22	16	23	30	2000
10	10	18	18	24 ½	26	2000
10	10	21	18	24 ½	29	3000
10	10	26	18	24 ½	34	3000
12	12	20	20	27 ½	28	3000
14	14	22	22	29 ½	30	4000 *
16	16	24	24	31	32	5000 *
18	18	26	26	34 ½	34	6000 *
20	20	28	28	36 ½	36	7000 *

\* Only available in 240 VAC, 1 ph., 50/60 Hz power.

Standard Load Train Port Sizes (in.)
1/2 in. *
15/16 in. *
1 7/8 in. *
3 1/8 in. *
4 1/8 in. *
4 7/8 in. *
Other sizes available on request

**Standard Power:**  
120 VAC, 1 ph., 50/60 Hz.

**Optional Power:**  
240 VAC, 1 ph., 50/60 Hz.

Standard View Port Dimensions (in.)
2W x 6 H
3W x 6 H
4W x 6H
Other sizes available on request

For Details about our Oven accessories,  
contact an ATS Sales Representative.

**Temperature Controllers \***  
(See bulletin 3010)

**Retorts \***  
(See bulletin 3020)

**Mounting Brackets & Arrangements**  
(See page 9 for details)

**Leveling Legs**

**Internal Lamp \***

**Door Switch \***

**Explosion Proof Motor \***

**Rear Protection Cover \***

**Ports** (View ports, load train ports, gas ports, vent ports, hand access ports, thermocouple ports, and explosion relief ports)

**Inserts \*** (load train port inserts & removable plugs)

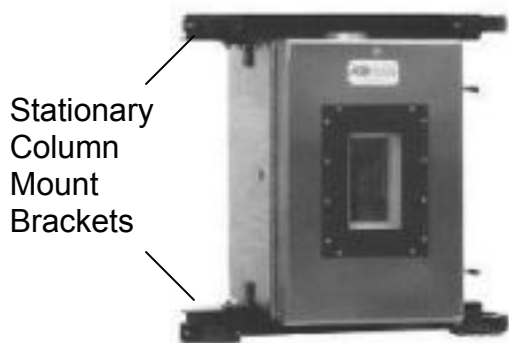
**Cooling Accessories**

- Liquid nitrogen (N<sub>2</sub>) service to -155°C (-250°F)
- Liquid carbon dioxide (CO<sub>2</sub>) service to -57°C (-70°F)

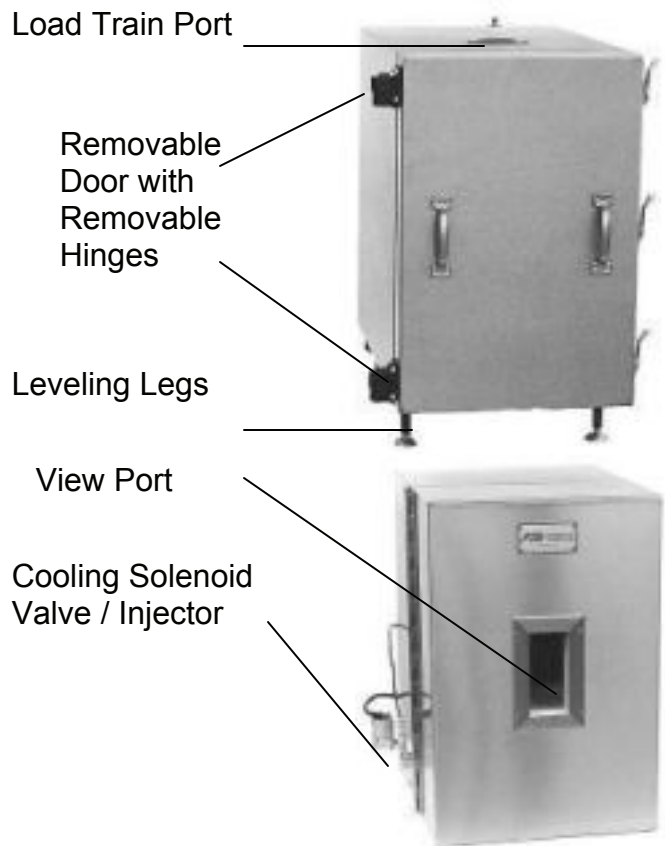
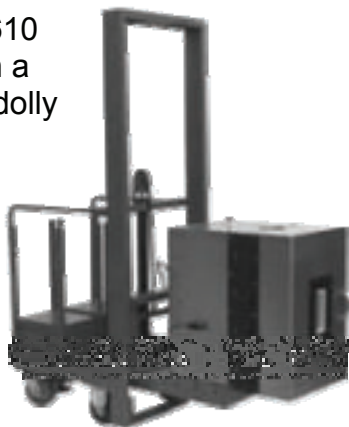
**Special Door Hinges**

- Removable
- Offset (shown on front cover)

\* not pictured



Series 3610 oven with a portable dolly

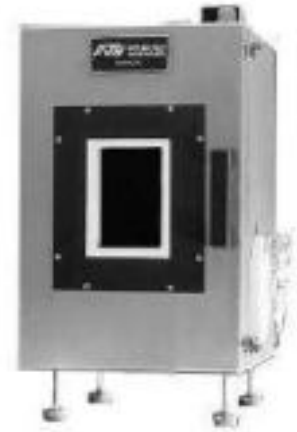




ATS ovens may be used in laboratory applications or mounted on materials test machines for testing applications

## Lab Ovens

The oven shown on the right is in a typical laboratory arrangement with leveling legs. This oven is equipped with several accessories such as a view port, a plug port, and a cryogenic solenoid valve. When the oven is used as a cooling chamber, the valve injects liquid carbon dioxide (CO<sub>2</sub>) or liquid nitrogen (N<sub>2</sub>).



## Test Ovens

Test ovens are available for almost any style of test machine. Typically, the following mounting arrangements are used:

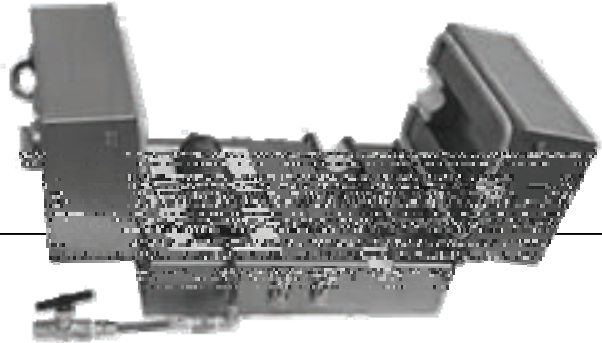
- **Stationary Column Mount—** Mounting brackets attach the oven to the columns of a test machine.
- **Stationary Base Mount—** This arrangement uses mounting brackets to attach the oven on the base of the test machine.
- **Column or Base Mount Slide Assembly—** Mounting brackets to attach the oven to the columns or base of a test machine. The slide assembly permits the oven to slide out of position when necessary. (a base mounted slide assembly is shown in figure to the left.)
- **Portable Dolly—** Ovens can be mounted to the lift of an ATS portable dolly. Manual and hydraulic lifts are available for vertical adjustment.



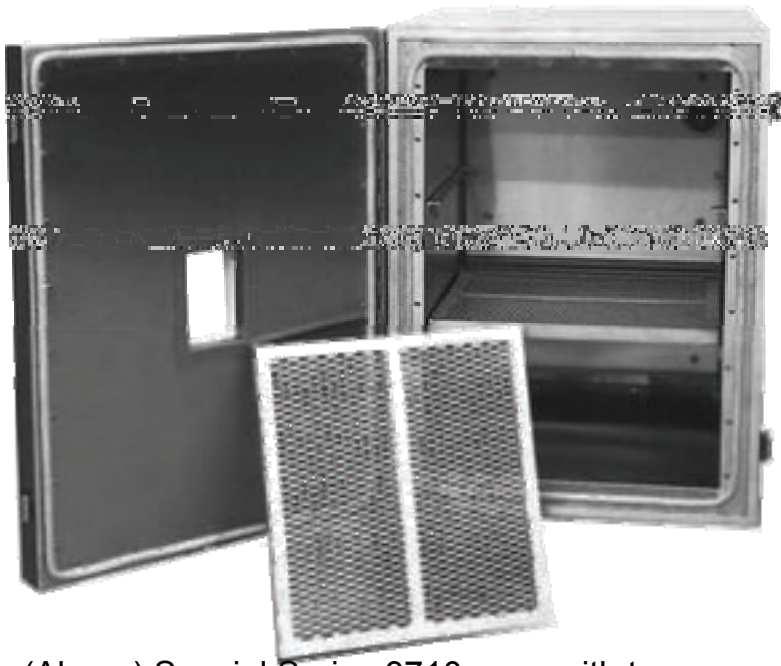
# Custom Equipment

In addition to our standard ovens, Applied Test Systems offers ovens for special applications. These ovens are custom-designed and manufactured to our customers' specifications. Some examples are shown below on the next four pages.

(Right) Special Series 3720 test oven for use with bench top tension-torsion tester including heating and cooling coils.



(Above) Special Series 3710 test oven with a wide view port for convenient viewing. This oven is also equipped with two hand access ports for specimen handling.

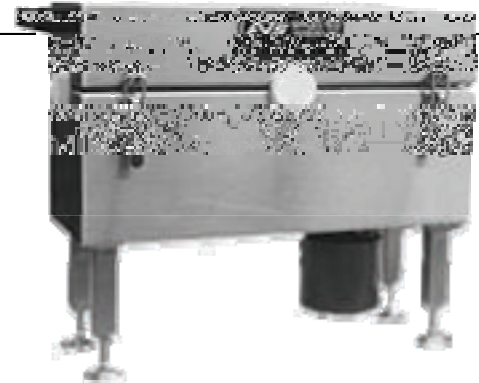


(Above) Special Series 3710 oven with two expanded metal shelves to enable air circulation.



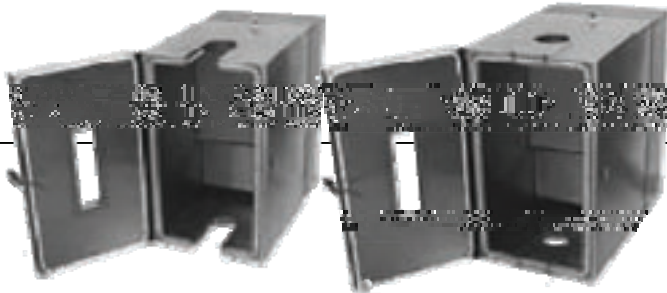
(Above) Special Series 3610 horizontal oven with a hinge on its lower side.

(Right) Special Series 3620 oven modified for use in horizontal position with the motor side down. This oven was used to test fiber optics.

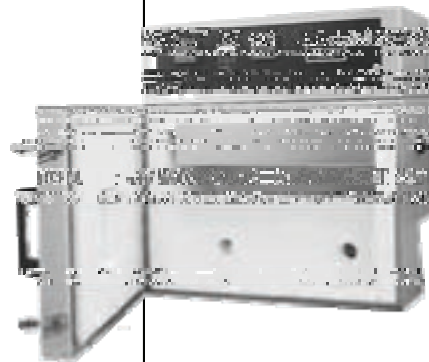


# Custom Equipment

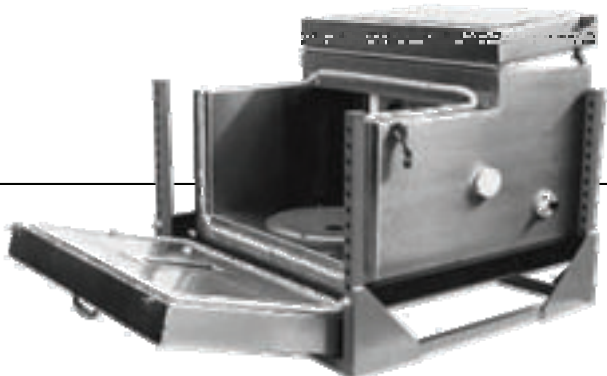
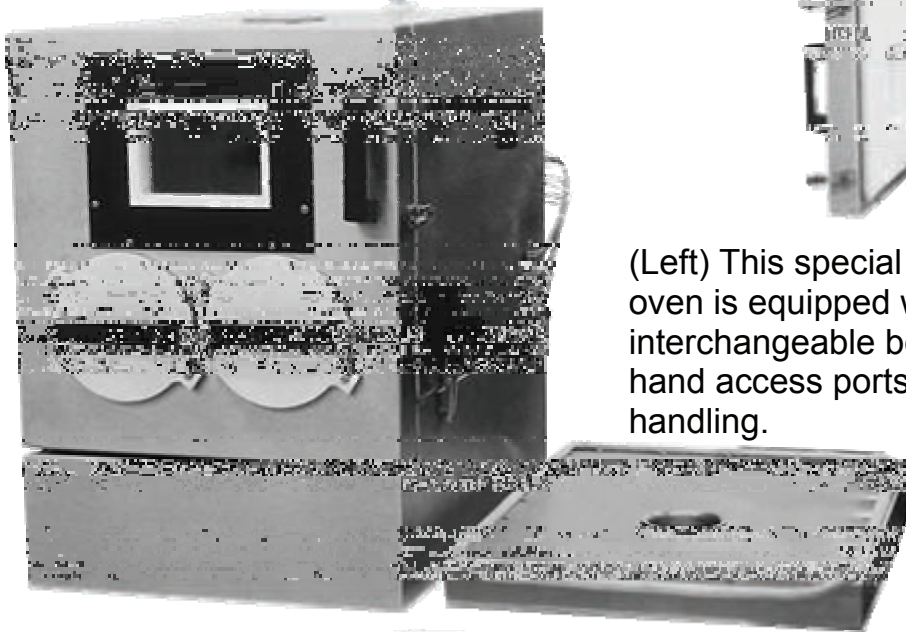
(Below) Two side-by-side pictures are shown of the Series 3710 test oven which is equipped with special load train ports and removable inserts. In the picture below, the port insert is in position. These removable inserts allow the oven to slide out of the test position without disassembling the load train.



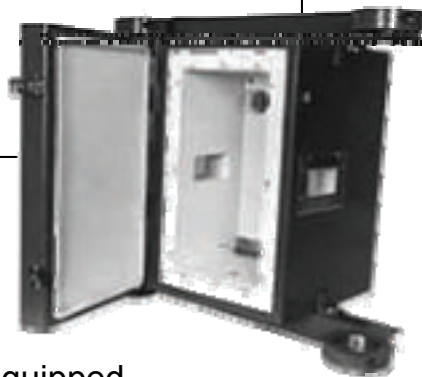
(Below) This Series 3610 oven was made for special applications in the plastics industry.



(Left) This special Series 3710 oven is equipped with interchangeable bottoms and two hand access ports for specimen handling.



(Above) This Special 3710 oven is equipped with two doors. The top door opens up, and the bottom door, equipped with a view port, opens down.

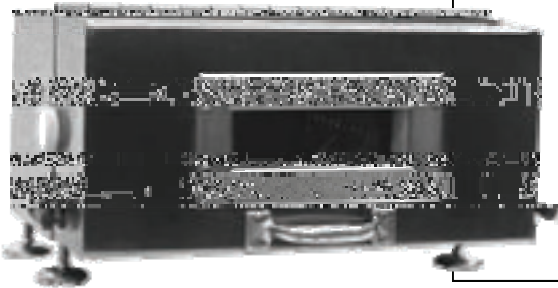


(Left) View ports are located on both sides of this Series 3610 for observing crack growth. This oven is also equipped with a stationary column mount.

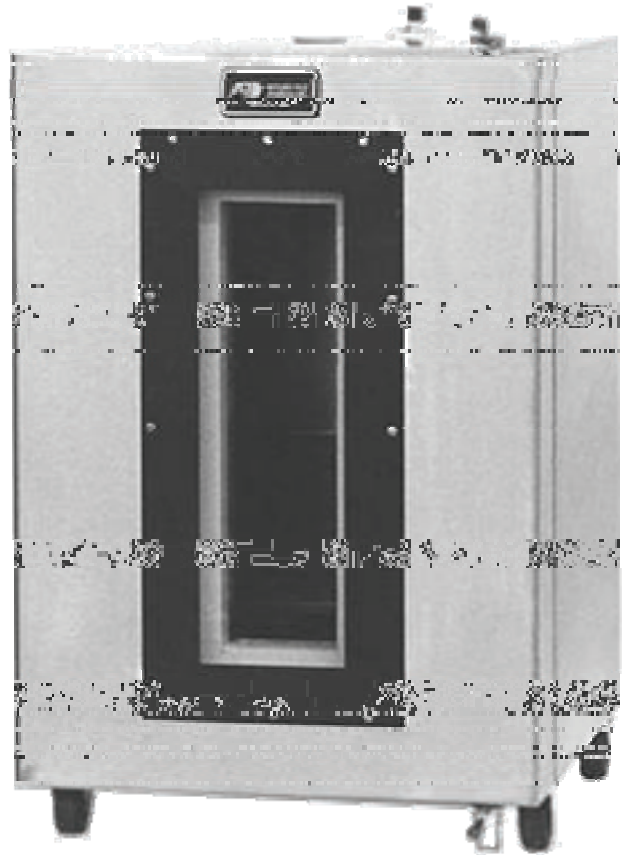
(Below) Special Series 3620 oven with a horizontal split, two port holes located below the split line, and a view port located on the top of the front side.



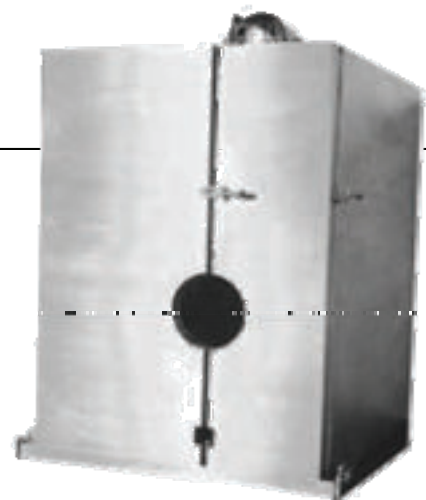
(Below) This horizontal Series 3620 oven is equipped with leveling legs, a view port, load train ports, load train caps, and a handle. Notice that this oven door opens up instead of out to the side.



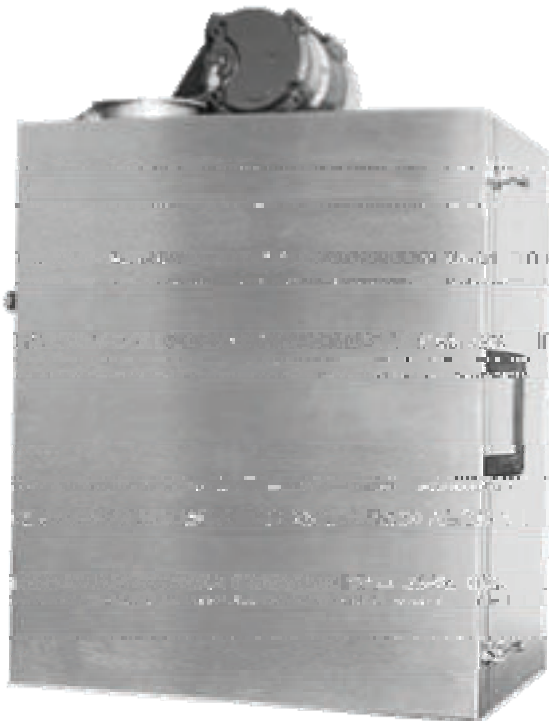
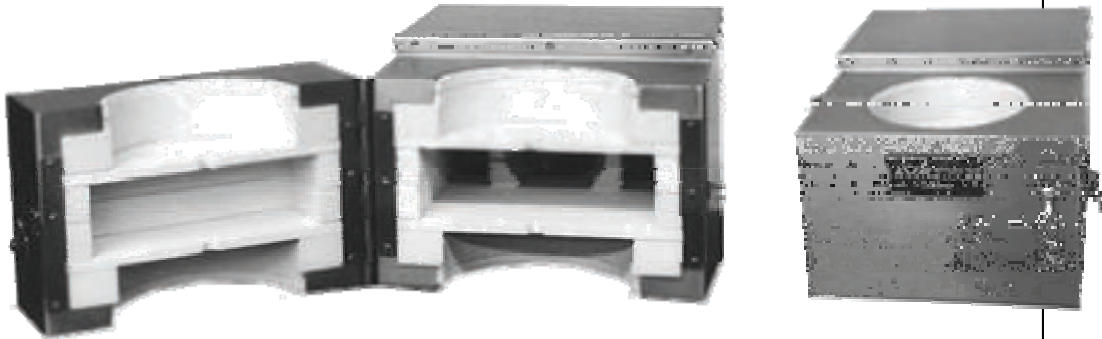
(Below, Right) The long view port on this special Series 3710 allows the entire specimen load train to be observed. This oven is equipped with casters for easy mobility.



(Right) This Series 3710 test oven is split along the vertical axis and is equipped with a special port for the customer's vacuum chamber. The two front doors are easily removed by unlatching and sliding them out to the sides.



(Below, Left & Right) Special Series 3610 box oven shown in the open and closed position. The oven has a 9" external height.



(Left) This Series 3610 oven was custom designed to fit in our customer's fume hood. Since external depth was limited, a top mount, belt driven blower motor was used. The door handle and latches were arranged to minimize external depth. The oven features an explosion-proof motor and an explosion-relief port.



(Left) This special Series 3720 hot cell oven has the back half (left) mounted on a side assembly and the front half (right) mounted on a pivot. The front half has a special latch for use by a mechanical robot.

# Other Products

## Lab Furnaces

Temperatures to 1800°C  
(3272°F)

Tube, Split,  
and Box  
Types

Accessories &  
Custom  
Furnaces  
Available



## Industrial Furnaces

EHS Electro Heat Systems  
Temperatures to 1800°C  
(3272°F)

Standard &  
Custom Box  
Types



## Furnace Heating Elements

EHS Electro Heat Systems  
Temperature Ratings 1010°C to  
1204°C  
(1850°F to 2200°F)



Standard and Custom Elements

## Universal Testing Machines Grips & Fixtures

Manual and computer controlled units  
available in floor and bench top models.

- Tension
- Compression
- Shear
- Flexure

Choose from a selection of grips and fixtures  
available in capacities from 1,000 to 70,000  
lbs. Other accessories available.



(Right) 1600 Computer controlled Universal  
Testing Machine

## Extensometers

Choose from various  
types of extensometers  
used to test metals,  
ceramics, and plastics.  
Extensometers are also  
available for the  
following applications:

- Averaging
- Alignment checking
- Crack opening displacement
- High temperature



## SHRP Asphalt Binder Testing Equipment

- Pressure Aging Vessels
- Bending Beam Rheometers
- Direct Tension Test Systems
- Vacuum Degassing Ovens



## Creep Testing Systems

Systems for your tensile, compression,  
and stress/relaxation  
testing needs

- Lever Arm Tester (load capacity to 50,000 lbs.)
- Direct Load Tester (load capacity to 50,000 lbs.)



## Other Products

### Calibration Blocks and EDM Notching



Designed for Non-destructive test inspection; we offer a wide range of block types and materials (1018 steel, 7075-T6 aluminum, 304 stainless). Our Quality control program is certified to MIL-I-45208A using instruments per MIL-I-45662A Certification and traceable to NIST.



EDM Notching is used to simulate cracks in materials, and can be machined widths from a 0.0015 in. for notches as thin as a hair.

### Pressure / Pipe Test Systems



Applied Test Systems, Inc. has been supplying *quality* test equipment and *superior* services for the plastic pipe industry for more than 35 years. We offer a full line of quality pipe/pressure testing systems, fixtures, end caps, and accessories. Our testing equipment meets the testing needs of ASTM D1598 and D1599. We can also design and manufacture similar equipment to meet most *any* application.



### Sealant Testing Equipment



The Series 540 Sealant Tester is designed to perform reliable cyclic testing of sealants, adhesives, and coating to various specifications.

- Optional heat/cool chamber with control system
- PC with Windows™ based software.

The Series 510 and 520 Sealing Compound Testers are designed to test durability in load capacities up to 1,000 lbs. (4.44kN), and is capable of determining Aymar durability and other constant speed tests per ASTM and US Federal specifications. Series 520 also performs variable-speed testing per JIS and other standards.



## How to Contact ATS



Calibration Laboratory  
Certificate No. 2132.01



154 East Brook Lane  
Butler, PA 16002

Phone: (724) 283-1212  
Toll-Free: (800) 441-0215  
Fax: (724) 283-6570  
Email: [sales@atspa.com](mailto:sales@atspa.com)  
<http://www.atspa.com>



Certification  
Program Now  
Available