



# CHANDLER ENGINEERING

## Model 5600-AUTO

### Automated Shear History Simulator

The Chandler Engineering Automated Shear History Simulator (ASHS) is a system designed to prepare and load fracturing fluids dynamically into the Model 5550 rotational viscometer. The fluid is pumped through a combination of tubes at various rates and durations in order to simulate pumping conditions experienced during fracture stimulation treatments.

The ASHS consists of a pressurized fluid reservoir, two injection pumps and four tube assemblies. An integrated touch screen computer with a graphical representation of flow paths allows the user to configure the instrument to simulate actual flow conditions.

A base gel fluid is placed into the pressurized supply reservoir for delivery to the suction side of the flow pump. Pressure is applied to the reservoir via an air regulator mounted on the face panel. The gel pump is constructed of high pressure stainless steel for corrosion resistance. The pump is driven by a frequency driven servo motor that can deliver 0-140 ml/min. The crosslinker additive pump is a stainless steel HPLC pump capable of delivering 20 ml/minute.

The two fluids are combined into a micro-volume mixing tee for complete homogenization. The combined fluids then travel through a series of tubes that use selector valves and may be programmed in various tubing configurations.

Pressure transducers are located at the entrance and exit of the tubing assemblies to accurately monitor fluid behavior. Fluid pressures are indicated using the graphical user interface. The software monitors all measured parameters such as pump rate, system pressure and capillary pressures. To ensure the proper volume is transferred once the shear simulation is complete, dynamic loading of the Chandler 5550 rotational viscometer is achieved with precise control from the ASHS software.



### FEATURES

- ✓ 2,000 psi maximum operating pressure at ambient temperature
- ✓ Multiple tubing configurations, options selected through software interface
- ✓ Four (4) shear history tube assemblies
- ✓ Manifold for convenient connection to the 5550 Viscometer
- ✓ Panel mounted computer with touch screen interface
- ✓ Automatic loop flushing features

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## Specifications

Operating Conditions:  
Ambient room temp

Maximum Operating Pressure:  
2,000 psi

Pressure Relief Settings:  
2,000 psi

Reservoir:  
50 psi

Four (4) Shear History Tube Assemblies:

OD (in)	ID (in)	Length (ft)	Qty
0.125	0.085	300	2
0.250	0.180	100	1
0.250	0.120	100	1

Gel Pump:  
0-140 ml/min

Additive Pump:  
20 ml/min

Max Shear Rate:  
2,360 sec<sup>-1</sup>

Wetted Materials:  
316 Stainless Steel

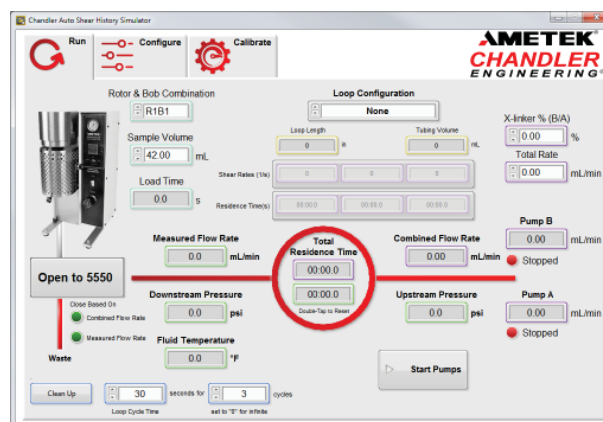
Dimensions (w x d x h):  
36 in x 39 in x 36 in  
(91 cm x 99 cm x 91 cm)

Net Weight:  
300 lbs (136 kg)

## Utilities

Input Voltage:  
115/230 VAC; 50/60 Hz

Input Air:  
up to 100 psi



Model 5600-AUTO Touch Screen Display

Scan the below QR Code with your  
phone to view product information  
on our Website.



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