WSN GEN-S

Steam Heat Shrink Tunnel User Guide





WSN GEN-S

Models: *STC-WSN300-2M STC-WSN600-2M*

User Guide

Revised 6/21/22 P/N 4510012 – Rev F

Copyright and Trademarks

Copyright ©2022 American Film and Manufacturing.

All rights reserved. All trademarks and brand names are the property of their respective owners.

AFM

7041 Boone Avenue North Brooklyn Park, MN 55428

Phone: 714-974-9006, Fax: 763-795-8867

www.afmsleeves.com

Contents

Abbreviations	7
Safety	9
Warnings	9
Understanding Safety Notifications	11
Cautions	
Equipment	13
Included Equipment	
Optional Equipment	
Sleever	14
Conveyor	15
Accumulation Table	16
Customer-Supplied Equipment	
Introduction	17
General Overview	
System Components	
Steam Tunnel	19
Conveyor	20
Stand	21
Boiler Assembly	
Electrical System	25
System Specifications	
System Dimensions	
STC-WSN300-2M GEN-S	27
STC-WSN600-2M GEN-S	
Installation and Setup	29
General Setup Considerations	
Material Handling	
Work Area	
Maintenance Access	
Ventilation	

Humidity	
Water Access	
Codes and Regulations	
Traffic Patterns	
Unpacking	
Physical Setup	
Plumbing and Valve Connections	
Power Connection	
Operation	
Performing Initial Startup/Startup After 1 Week Idle	
Adjusting the Steam Manifolds	
Adjusting Manifold Height	42
Adjusting Manifold Depth	44
Adjusting Manifold Angle	46
Running Product	
Shutting Down	
Maintenance	51
Maintenance Schedule	
Blowdown Procedure	
External Cleaning	
Manual Cleanout	
Cleaning or Replacing the Strainer	
Checking and Cleaning the Probes	61
Troubleshooting	63
Electrical Schematics	
Complete System: WSN GEN-S	
Boiler	
Parts List	
Recommended Spare Parts List	
	~~
Tunnel	
Tunnel Boiler Additional Parts	69

Exploded Diagrams	72
Stand	72
Tunnel	74
STC-WSN300-2M GEN-S	76
STC-WSN600-2M GEN-S	77
Boiler	78
Warranty Statements	81
Limitations	81
Repairs	81
Shrinking Quality	81
Shipping Policy	
Exclusions	
Warranty Verification	81
Warranty Eligibility	
Limited Warranty	
Disclaimer of Damages	82
Technical Support	83

Abbreviations

Abbreviation	Meaning	Abbreviation	Meaning	
AC	Alternating Current	PETG	Polyethylene Terephthalate Glycol	
amp	Amperes	PLA	A plastic material used for label film	
С	Celsius	PPE	Personal Protective Equipment	
cm	Centimeters	psi	Pounds per square inch	
F	Fahrenheit	PSIG	Pounds per square inch gauge	
Hz	Hertz	PVC	Polyvinyl Chloride	
kW	Kilowatt	V	Volts	
min	Minute	VAC	Volts Alternating Current	
mm	Millimeters	VFD	Variable-frequency drive	
m/min	Meters per minute	0	degrees	
OPS	Oriented Polystyrene	"	Inches	

The following abbreviations are used throughout this User Guide:

8 Abbreviations

Safety

When installing, operating, and maintaining the STC-WSN GEN-S Steam Heat Shrink Tunnel, follow these safety practices.

Warnings

- Study this User Guide thoroughly before operating the GEN-S. Failure to do so may result in serious injury, damage to the machine, and/or may void the warranty.
- When unpacking and setting up the GEN-S, use proper lifting and safety practices. Avoid overreaching and leaning over.
- While installing, maintaining and operating the GEN-S always wear proper safety clothing, including safety glasses/goggles and heat-resistant work gloves.
- Do not locate the GEN-S on an uneven surface, as the machine could tip over.
- Ensure that the electrical power source is properly wired and grounded. The power source should comply with all safety regulations and codes applicable to the installation location.
- Never remove any ground connection from this equipment. Failure to follow these instructions may result in damage to the equipment, fire, serious personal injury, or death, and will void the warranty.
- Always stop the GEN-S before performing any adjustments or maintenance. If the maintenance procedure does not require the machine to be powered, unplug the machine as well and allow it to cool.
- The GEN-S generates heat. Ensure that the work area is properly ventilated.
- The use of certain types of plastic films in sealing and/or shrinking equipment may result in the release of hazardous fumes due to high temperatures. Before using any plastic film in this equipment, the manufacturer or supplier of the film should be contacted for specific information concerning the potential release of hazardous fumes. Adequate ventilation should be provided at all times.
- Keep combustible and explosive materials away from the GEN-S. The equipment may be a source of ignition.
- Use caution when using with this Steam Tunnel pressurized containers. Exposure to high temperatures can cause pressurized containers to burst and could cause injury to operators and other personnel nearby.
- Do not place body parts or tools into the GEN-S while it is running, and exercise extreme caution even when the machine has been shut off, as it still may be very hot.
- Do not tamper with electrical wiring. Use only licensed electricians for electrical maintenance.

- To prevent damage to machinery and injury to personnel, do not increase settings on either electrical or mechanical overload safety devices.
- Keep hands away from moving conveyors and assemblies. Conveyor belts that have become worn or frayed can be hazardous and should be replaced promptly.
- Never operate this or any moving equipment without all covers and guards in place. The internal mechanism of most packaging machinery contains numerous shear, pinch, and nip points, many of which are capable of causing severe injury and permanent disfiguration.
- To minimize potential for personal injury, always be sure that machine operators and others working on machinery are properly trained in the correct usage of the equipment and properly instructed regarding the safety procedures for operation.
- Do not make any modifications to either the electrical circuitry or the mechanical assemblies of the GEN-S. Such modifications may introduce hazards that would not otherwise be associated with this machinery. American Film & Machinery will not be responsible for any consequence resulting from such unauthorized modification.
- Take care when clearing product jams inside the Steam Tunnel. Do not use anything that could potentially puncture a container.
- When cleaning, first turn off power and allow the temperature to drop below 100°F (37.8°C).
- Check local regulations for boiler permit requirements.
- Pay close attention to and understand all warning labels on the machine and follow safe operating practices.
- Keep water away from the electrical enclosure, the control panel, and all other electrical components.
- Service and maintenance beyond what is described in this User Guide should be performed by a trained and qualified technician. If in doubt, contact AFM or your authorized distributor.
- All operators must strictly observe these guidelines and ensure that the GEN-S is properly maintained. Failure to do so may result in damage to the machine, may void the warranty, or may cause serious injury.

Understanding Safety Notifications

	DANGER: Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	WARNING: Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	CAUTION: Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
\triangle	ATTENTION: Indicates a hazardous situation which, if not avoided, could result in property damage only.

Cautions

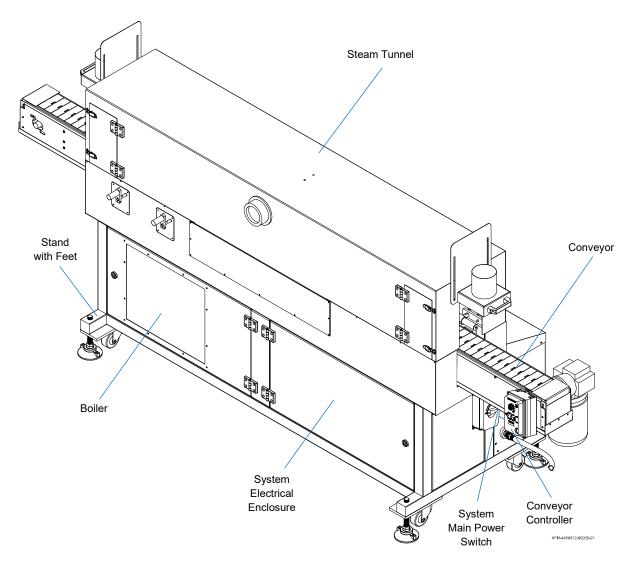
When installing, operating, and maintaining the STC-WSN GEN-S Steam Heat Shrink Tunnel, observe these cautions.

	Wear Safety Equipment: Wear necessary Personal Protective Equipment (PPE), including safety glasses/goggles and heat-resistant work gloves.
4	Electrical Hazard: Do not open cover. No user-serviceable parts inside.
	Electrical Ground Hazard: Ensure that unit is properly grounded.
	Fume Hazard: Some fumes may be a health hazard with prolonged exposure. Ensure that the area has proper ventilation.
	Hot Surfaces: May cause burns. Do not touch until equipment has cooled.
	Live Steam: Some areas will emit hot steam, which may cause burns. Use caution even after equipment has cooled.
	Fire Hazard: Do not tamper with electrical equipment.
	Pinch Hazard: Keep hands clear.

Equipment

Included Equipment

- Steam Tunnel
- Conveyor
- Stainless Steel Stand with Leveling Feet
- Integrated Boiler
- Electrical System and Controls



STC-WSN GEN-S Steam Heat Shrink Tunnel (Front View)

Optional Equipment

Depending on the labeling tasks being performed, additional equipment may be needed to complete the standard GEN-S setup:

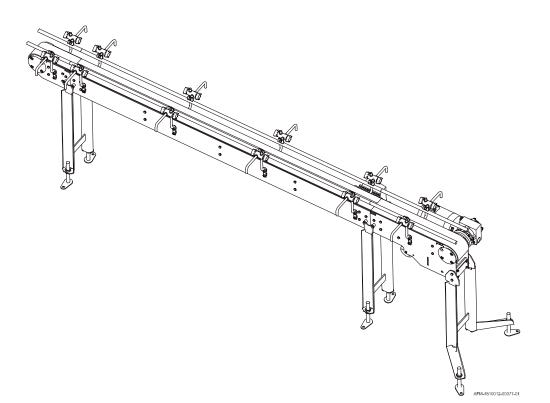
Sleever

A Sleever applies labels to products before the GEN-S shrinks those labels onto the products. A Sleever is not included with the GEN-S, but AFM offers several models depending on label size and production speed.



Conveyor

A Conveyor is needed to carry products to and from the built-in Conveyors of the GEN-S. AFM can offer Conveyor solutions as required.



Accumulation Table

An Accumulation Table is not included with the GEN-S, but can be used to stop, hold, and release products after the GEN-S has fixed the labels onto them. Two height-adjustable Accumulation Table options are available from AFM's sister company, Eastey – the 36" diameter TT36 and the 48" diameter TT48.



AFM-4510012-00012-01



AFM-4510012-00013-01

Customer-Supplied Equipment

Customers are responsible for supplying additional equipment. Including:

- Heat-resistant Gloves
- Safety Glasses/Goggles
- Continuous supply of filtered or softened water (not distilled)
- Ventilation equipment
- Blowdown Hose
- Proper water discharging locations for Blowdown and Water Outlet
- 0.75" Reinforced Hose
- Power Cord with 3-Phase, 480 VAC 50/60 Hz grounded Plug, or the ability to connect the GEN-S directly into facility's electrical system according to all applicable codes and regulations.

Introduction

General Overview

The STC-WSN-GEN S Steam Heat Shrink Tunnel is intended for shrink sleeve label and tamper evident band applications. It is designed for middle, full body, and full body and cap shrink applications. Intended for industrial use, the STC-WSN GEN-S is an all-in-one Tunnel that includes its own Steam Generator. The Tunnel is a perfect addition to shrink labeling lines in manufactured goods industries including food and beverage, pharmaceutical, nutraceutical, health and beauty, consumer goods, and chemical products.

The STC-WSN-GEN S is designed for simple setup where in-plant steam generation is not readily available. Equipped with 4 adjustable tier Manifolds, the STC-WSN GEN S directs the steam heat where needed to give PVC, PETG, OPS, or PLA labels and neck bands a precise, high quality finished appearance. The GEN S provides better contour than radiant heat and ensures a quality finish.

The Tunnel's 9.0" (22.9 cm) tall and 5.0" (12.7 cm) wide opening accommodates a number of shrink sleeve products. The four adjustable steam Manifolds are adjustable horizontally, vertically, or radially to ensure uniform heat distribution. Manifold adjustments and controls are done from both sides of the Tunnel.

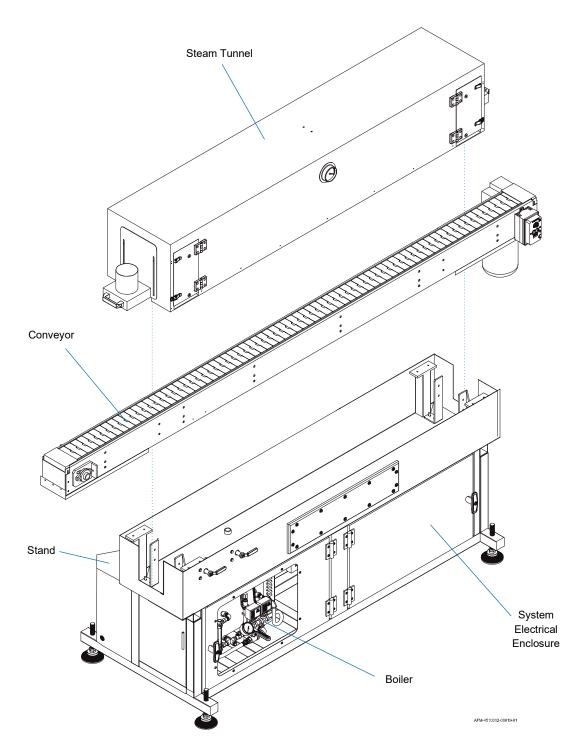
Features of the GEN-S Steam Heat Shrink Tunnel from AFM include:

- Fully integrated 30 kW boiler to generate its own steam where in-plant steam is not readily available
- Adjustable Manifolds to direct steam heat where needed for a precise, high-quality finish
- Safety Valve that automatically discharges when steam pressure exceeds maximum levels
- Two models to choose from:
 - The STC-WSN300-2M GEN-S has a 118" (300 cm) Conveyor
 - The STC-WSN600-2M GEN-S has a 236" (600 cm) Conveyor

In the model names above, "300" or "600" refers to the length of the Conveyor in centimeters, and "2M" refers to the length of the Heat Tunnel itself in meters. For the purposes of this User Guide, unless "300' or "600" is specified, the terms "STC-WSN300 GEN-S or "GEN-S" can refer to either model.

System Components

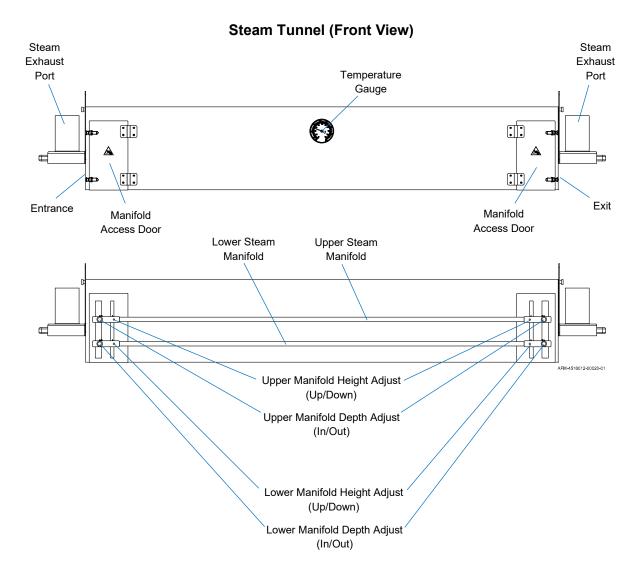
The STC-WSN GEN-S Steam Heat Shrink Tunnel is composed of five general components – the Steam Tunnel, Conveyor, Stand, Boiler Assembly, and Electrical System.





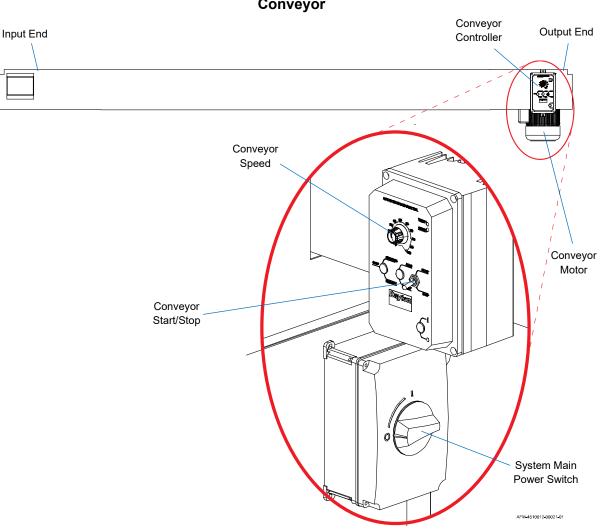
Steam Tunnel

The Steam Tunnel sends pressurized steam heat through two tiers of pipes, called Manifolds, that extend down the length of the Tunnel. The Manifolds have small holes at regular intervals along their length, and the steam is forced out of the holes and directed at products as they pass through on the Conveyor. Parts of the Steam Tunnel are labeled below.



Conveyor

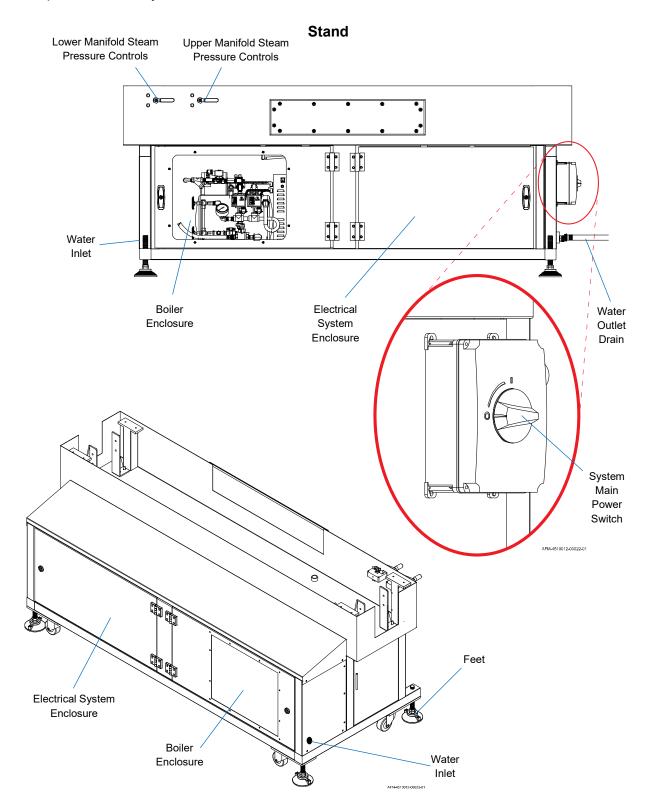
The Conveyor carries products into, through and out of the Steam Tunnel. Parts of the Conveyor are labeled below.



Conveyor

Stand

The Stand contains or supports the Boiler, Electrical System, and all of the other components of the system. Parts of the Stand are labeled below.

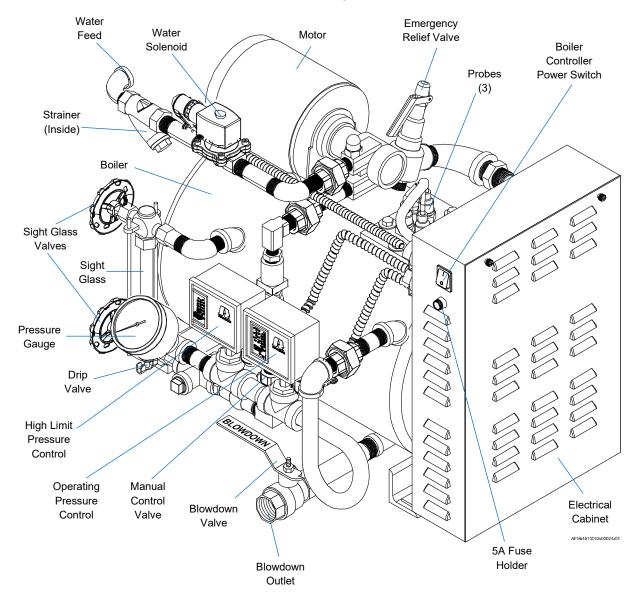


Boiler Assembly

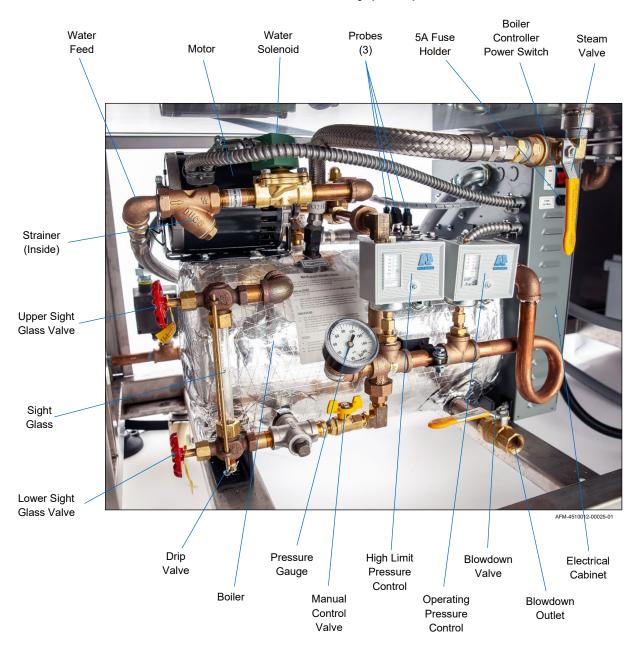
1. The Boiler Assembly is located inside the Boiler Enclosure on the left (looking from the front) below the Conveyor. It boils water to provide heated steam to the Steam Tunnel. Parts of the Boiler Assembly are labeled below.



WARNING: Electrical Hazard. The Boiler Assembly is a watertight enclosure. However, splashing the electrical components with liquid can result in electrical shock, damage the equipment, and void the warranty.



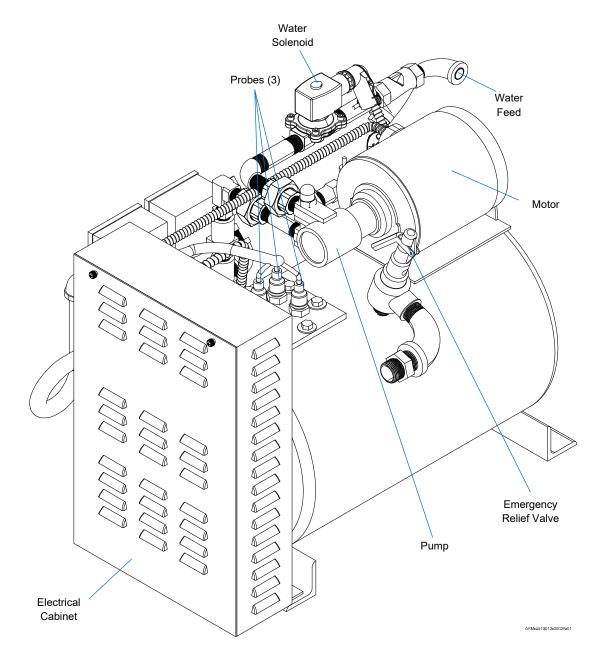
Boiler Assembly (Front)



Boiler Assembly (Front)

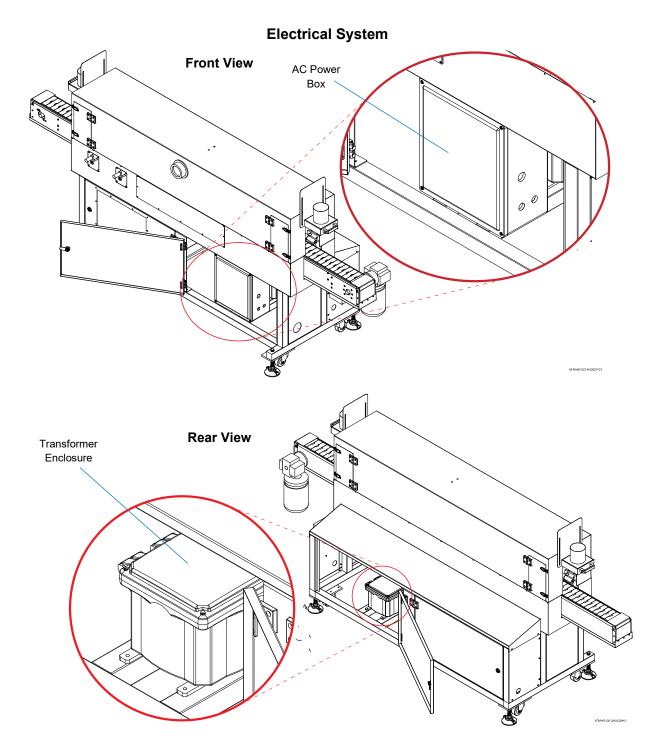
IMPORTANT: The Manual Control Valve has been preset at the factory. It should not be adjusted.

Boiler Assembly (Back)



Electrical System

The Electrical System is located inside the Electrical System Enclosure on the right (looking from the front) below the Conveyor. It is mainly composed of the AC Power Box, which sends electrical power to the entire system, powering components including the Conveyor, Boiler, and system Controls. The Electrical System Enclosure also provides access to the Boiler's Electrical Cabinet. The AC Power Box and Transformer Enclosure are shown below.

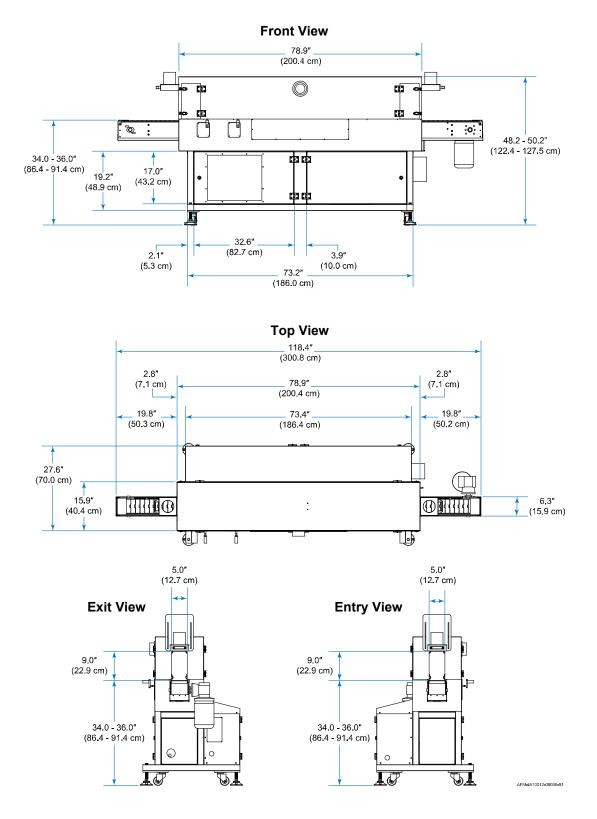


System Specifications

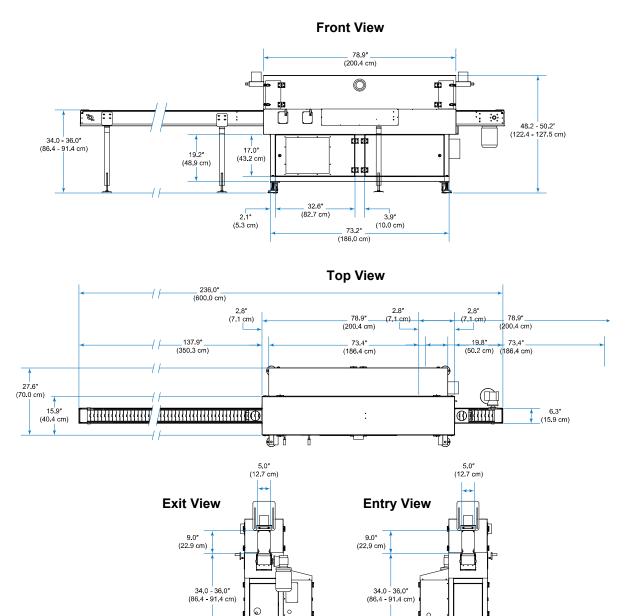
Power Requirements	AC 3-Phase, 240/480 V, 50/60 Hz			
Machine Construction	Stainless steel frame and construction			
Motors	230 VAC, 3-Phase,1/2 Horsepower			
Zones and Tiers	1 zone with 2 tiers			
	STC-WSN300-2M GEN-S	Length: Width Height:	118.1″ 31.5″ 49.0″	300.0 cm 80.0 cm 124.5 cm
Machine Dimensions	STC-WSN600-2M GEN-S	Length: Width: Height:	236.2" 31.5" 49.0"	600.0 cm 80.0 cm 124.5 cm
Conveyor Dimensions	STC-WSN300-2M GEN-S	Length: Width: Height: (Height incl	118.1" 4.5″ 34.0 – 36.0" udes casters ar	300.0 cm 11.4 cm 86.4 – 91.4 cm nd leveling feet)
	STC-WSN600-2M GEN-S	Length: Width: Height: (Height incl	236.2"" 4.5″ 34.0 – 36.0" udes casters ar	600.0 cm 11.4 cm 86.4 – 91.4 cm nd leveling feet)
Tunnel Dimensions	Length: 78.7" Width: 16.0" Height: 14.5"	200.0 cm 40.6 cm 36.8 cm		
Tunnel Opening Dimensions	Width: 5.1" Height: 9.6"	12.9 cm 24.4 cm		
Maximum Product Dimensions	Width:4.0"Height:9.0"	10.1 cm 22.9 cm		
Conveyor Speed	Variable Speed Conveyor up to 100'/min (30.48 m/min)			
Boiler Specifications	30 kW electric boiler, 80 psi, 480 V, 3-Phase, 50 amp			
Film Material	OPS, PVC, PETG, and PLA			
Steam Temperature	212 °F 100 °C			

System Dimensions

STC-WSN300-2M GEN-S



STC-WSN600-2M GEN-S



LŪ

D.

IJ

JI.

AFM-4510012-00031-01

Installation and Setup

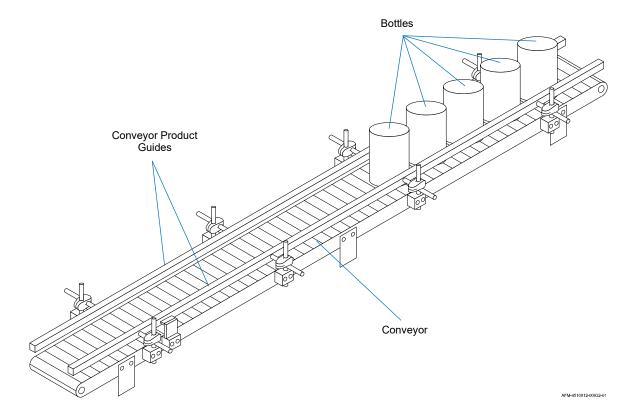
General Setup Considerations

In addition to providing proper space for the STC-WSN-GEN-S Steam Heat Shrink Tunnel, and ensuring that it will be in the desired section within the assembly line chain, consider other factors, including:

Material Handling

The most critical factor for consistently achieving superior quality heat shrinking is product handling. Adequate Conveyor Product Guides must be provided, correctly installed, and properly maintained, so that the products consistently pass through in such a way as to be evenly heated, and unpredictable movements are minimized. Incorrect or inconsistent product handling my cause uneven shrinking, maintenance problems, and could lead to equipment damage. The customer is responsible for maintaining proper material handling equipment.

Product Guides on Conveyor



Work Area

For safety, the work area should have a Fire Extinguisher.

Maintenance Access

When planning the installation, allow for easy access to all Controls, Doors and Panels of the GEN-S, so that setup, operation, and maintenance can be done conveniently.

Ventilation

The GEN-S uses high temperatures to shrink the labels onto the product. This can make the surrounding work area very hot, and depending on the product and label material used, can result in the production of hazardous fumes. Ensure that the work area has proper ventilation.



WARNING: Hazardous fumes. Ensure that work area has adequate ventilation.

Humidity

The GEN-S uses steam heat, which can raise the humidity of the surrounding work area. High humidity can have a negative impact on the effectiveness of Sleevers and other nearby equipment: for example, labels will not slide down the surface of a bottle as easily when that surface has condensation on it. Take reasonable steps to reduce humidity in the work area.

Water Access

The GEN-S requires a continuous supply of filtered or softened water to generate steam. The system also requires drainage. The unit should be positioned where it can be connected to such plumbing.

Codes and Regulations

All plumbing connections should be made by a licensed plumber who works in accordance with all applicable national and local plumbing codes. They should inform themselves of local and state Boiler Certification regulations before proceeding with installation. AFM is not responsible for installation in ways that violate code or other regulations.

Traffic Patterns

Careless positioning can result in damage to the GEN-S. An example is locating the machine where it can be accidentally knocked by a Forklift, or similar placement in an area of predictable traffic. Keep the system away from known traffic paths.



ATTENTION: Locate the GEN-S away from known traffic paths.

Unpacking

When unpacking the GEN-S, be careful not to scratch or otherwise damage the system.

Check for Shipping Damage:

- Examine the unit for obvious damage
- Check connections, and tighten if needed

Physical Setup

The GEN-S is easy to set up and incorporate into a production line.

Needed for Physical Setup:

- Forklift to remove the unit from the crate
- At least three people to move the machine into position
- Adjustable Crescent Wrench
- Level

To Perform Physical Setup:

- 1. Using the Forklift, carefully remove the GEN-S from the shipping crate.
- 2. If needed, use the Crescent Wrench to raise the Leveling Feet of the unit so that it can be rolled on the Casters.
- 3. Having found a suitable location based on the considerations mentioned previously (see "General Setup Considerations" on page 29), carefully roll the unit into the desired location and position. The Conveyor Controller and System Main Power Switch should be on the downstream side (where product exits the unit).
- 4. Align the Conveyor with the upstream or downstream Conveyors. Ensure that the operator has enough room to move, is not in danger of getting caught in moving mechanisms, and can easily access all the controls of the GEN-S.
- 5. Using the Crescent Wrench, lower the Leveling Feet so that the machine can no longer roll and adjust the height of the machine so that the Conveyor is level with the adjoining Conveyors.
- 6. Use the Level to confirm that the unit is level and make adjustments as needed with the Leveling Feet.
- 7. Connect the ventilation equipment, if needed. It is recommended to vent the exhaust ports outside of the building.

Plumbing and Valve Connections

The GEN-S requires a connection to a consistent source of filtered or softened water.



ATTENTION: Only clean filtered or softened water should be used. Failure to do so will result in shortened Boiler life and cause an increase in sediment buildup, which will negatively impact performance.

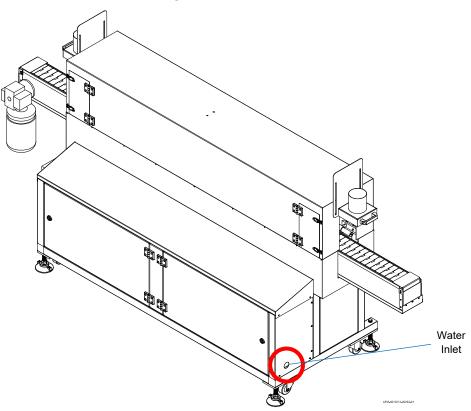
Needed to Make Plumbing and Valve Connections:

- Licensed Plumber who works in accordance with all applicable national and local plumbing codes
- Water Line that supplies filtered or softened water
- Drainage Lines

To Make Plumbing and Valve Connections:

1. Install a connection from the filtered or softened water source to the Water Inlet on the upstream end of the unit. The valve on the Water Inlet will need to remain in an open position during normal operation.

Connecting to the Water Inlet



NOTE: Depending on local regulations, a second check valve or a pressure-reducing-back-flow preventative device may be required.

 Connect a 0.75" (19,.1 cm) Blowdown Hose (customer-provided – must be rated for high temperature steam) from the Blowdown Outlet on the Boiler to a Blowdown Tank (Part Number 4503267; customer-provided – should be translucent so that water level and color is visible) or a proper discharging location.



WARNING: Do not reduce the Blowdown Outlet from its original size or connect a smaller diameter Blowdown Hose.



Connecting to the Blowdown Outlet



Blowdown Outlet

Blowdown / Tank

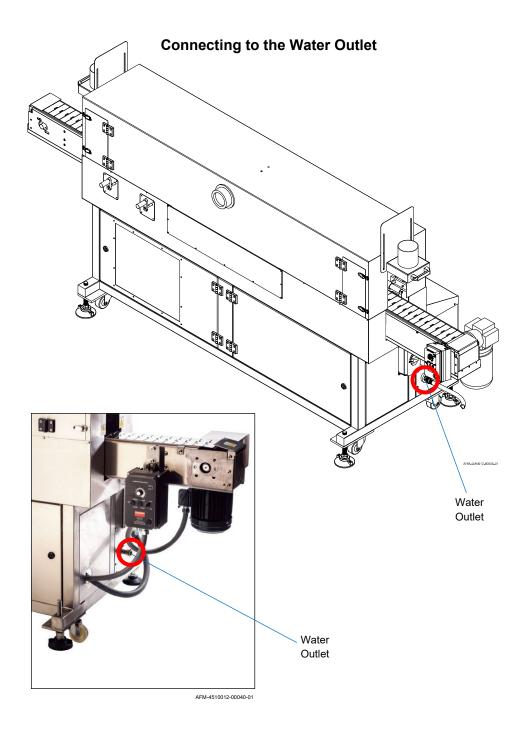
AFM-4510012-00039-01

0.75" (19,.1 cm) Blowdown Hose

4510012 - REV F - 220621

3. Connect a 0.75" reinforced Hose to the Water Outlet as shown below. Run the other end of the Hose to a suitable drain.

NOTE: Check local regulations and codes.



4. Check system for leaks. If found, call AFM Technical Support.

Power Connection

The GEN-S requires either hard wiring or the installation of a power cord and plug.

Items Needed to Install Power Connection:

- Licensed Electrician who works in accordance with all applicable national and local electrical codes
- Power Cord with 3-Phase, 480 VAC, 60 Amp, 50/60 Hz grounded plug

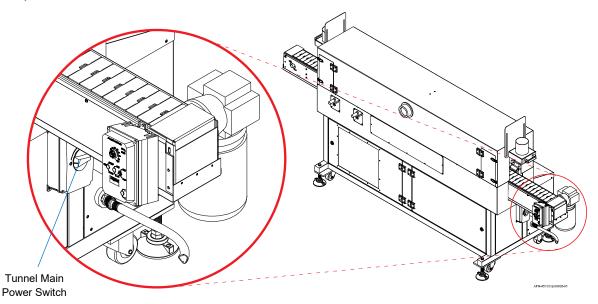
To Install Power Connection:

1. Have a Licensed Electrician connect a Power Cord that has a a 3-Phase, 480 VAC 50/60 Hz grounded plug (not included) to the Main Disconnect On/Off Switch Box.

3-Phase Plug Connection



2. Ensure that the Tunnel Main Power Switch is in the Off position before connecting to AC power.



Operation

When all the components have been properly mounted and connected, the STC-WSN GEN-S should be ready to begin production. Before startup, perform a quick inspection to verify that all components are securely mounted and that all pipes, hoses, and power cables are properly seated and connected.



WARNING: The GEN-S produces hot water and hot steam, both of which can cause severe burns. Many surfaces of the unit can also become very hot and cause severe burns. Use caution.



WARNING: Always wear proper safety equipment, including Heat-resistant Work Gloves and Safety Glasses/Goggles, when operating or maintaining the GEN-S.

Performing Initial Startup/Startup After 1 Week Idle

Upon initial startup and whenever the GEN-S has been inactive for more than one week, the following procedure must be performed.

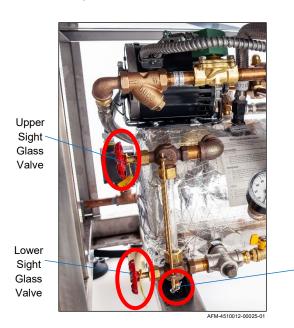
To Perform Initial Startup/Startup After 1 Week Idle:

- Verify that the two Sight Glass Valves are open (turned counterclockwise).
- 2. Verify that the Drip Valve at the bottom of the sight glass is closed (turned clockwise).

Drip

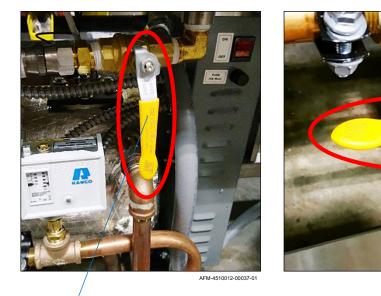
Valve

Power Switch (Off)



Boiler Controller ON

- 3. Verify that the Boiler Controller Power Switch is off.
- 4. Close the Steam Valve (perpendicular to the line).
- 5. Close the Blowdown Valve (perpendicular to the line).



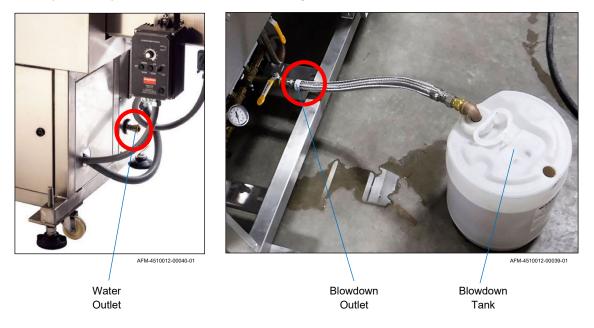




OW DOWN

AFM-4510012-00038-0

- 6. Confirm that the Water Inlet is connected to a filtered or softened water source.
- 7. Confirm that the Water Outlet is connected to a suitable drain.
- 8. Confirm that the Blowdown Outlet is connected to a Blowdown Tank or drain using a 0.75" (19,.1 cm) Blowdown Hose rated for high temperature steam.



- 9. Turn on the water supply.
- 10. Confirm the facility main electrical power to the GEN-S is on.
- 11. Turn the System Main Power Switch on.

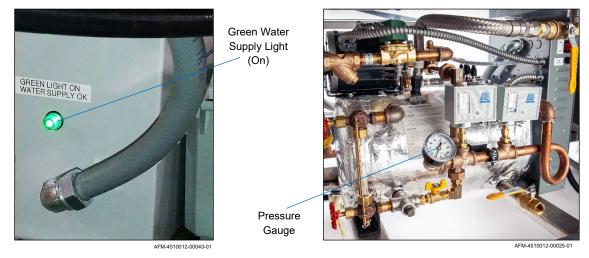


System Main Power Switch (On)



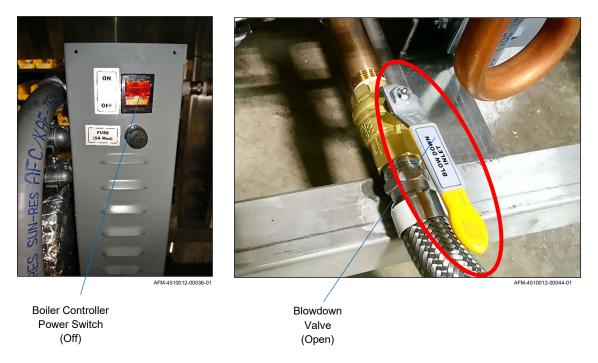
Boiler Controller Power Switch (On)

- 12. Turn the Boiler Control Power Switch on.
- 13. Allow the Pump to run for at least one minute.
- 14. Verify that the Green Water Supply Light is on. This indicates that supply water is flowing into the GEN-S at the prescribed pressure. If the green light is off, verify that the water supply is connected, turned on, and flowing with adequate volume and pressure.



15. Wait for 5–10 minutes for water in the Boiler Tank to heat and for the Boiler pressure to rise to (but not to exceed) 10 PSIG on the Pressure Gauge.

16. Turn the Boiler Control Power Switch off.



17. Slowly open the Blowdown Valve (parallel to the line) until the water drains from the Boiler.



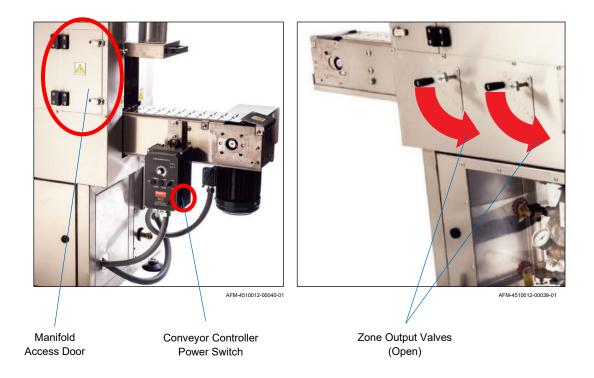
WARNING: The water will be hot. Use caution to avoid burns.

- 18. If the flushed water is brownish in color, repeat this entire procedure three times or until the flushed water is clear.
- 19. After completing all blowdown cycles, carefully remove the Blowdown Hose.



WARNING: Connection and hose will be hot. Use caution to avoid burns.

- 20. Turn the Boiler Control Power Switch on.
- 21. Close the Boiler Cabinet Door.
- 22. Turn on the Conveyor.
- 23. Allow 20 minutes to reach operating temperature.
- 24. When ready to run product, verify that all four Manifold Access Doors are closed.



- 25. Open the Zone Output Valves.
- 26. The GEN-S is now ready to run product.

IMPORTANT: Once initial startup has been completed, perform the blowdown procedure every 4 hours during the first week of operation (see "Blowdown Procedure" on page 53), which will extend Boiler life.

Adjusting the Steam Manifolds

Adjustment of the position and angle of the Steam Manifolds is required to accommodate different heat shrinking needs of each unique type of product and label. The Manifolds can be moved up or down (height) and closer or farther from the product (depth). Their steam jets can also be angled upward or downward. Ideal settings will be found through experimentation during setup. As a general practice, it is best to focus shrinking on the lower portion of the label as the product enters the Steam Tunnel, and focus shrinking on the upper portion of the label the further it moves through the Steam Tunnel.

Needed to Adjust the Steam Manifolds:

- 10mm Crescent Wrench or Socket Wrench
- 13mm Crescent Wrench or Socket Wrench
- Heat-resistant Work Gloves

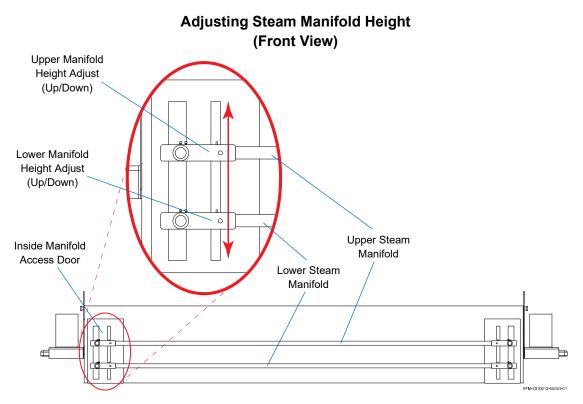
Adjusting Manifold Height

To Adjust the Height of the Manifolds:

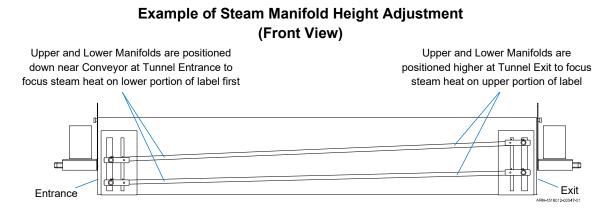
- 1. Power off the GEN-S and allow the system to cool to 100 °F. Once the system has cooled, continue to be cautious of heat and steam.
- 2. Open all four Manifold Access Doors.
- 3. At each end of the Tunnel, use a 13mm Wrench to loosen the Cap Screws that hold the Manifold Height Adjusts in position.



Manifold Height Adjusts (Up/Down) 4. Adjust the height of the Upper and/or Lower Manifolds as desired. The Manifolds do not need to remain parallel to one another. Maximum height variation for a single Manifold is 7.5" (19.1 cm).



- 5. When satisfied with the vertical positions of the Manifolds, use the 13mm Wrench to retighten the Cap Screws to lock the Manifold Height Adjusts in place.
- 6. Repeat this procedure to adjust the height of the Manifolds at the other end of the Steam Tunnel and on the opposite side of it.

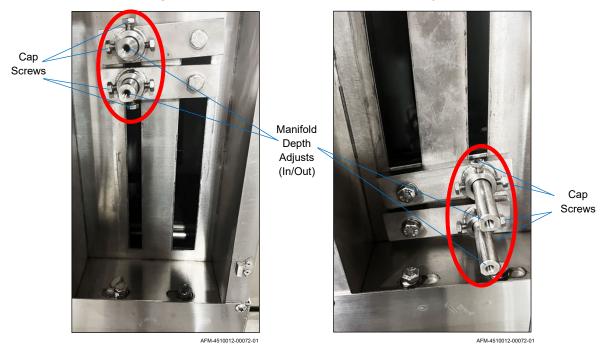


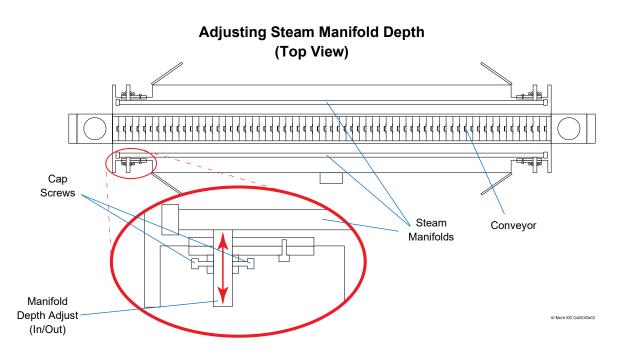
NOTE: The example above is one of many possible Manifold height configurations and is not necessarily the ideal one for all situations.

Adjusting Manifold Depth

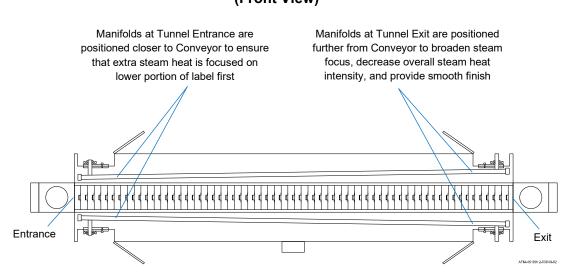
To Adjust the Depth of the Manifolds:

- 1. If not already done, power off the GEN-S and allow the system to cool to 100 °F. Once the system has cooled, continue to be cautious of heat and steam.
- 2. Open all four Manifold Access Doors.
- 3. Inside one of the Manifold Access Doors, use a 10mm Wrench to loosen the Cap Screws holding the Upper and Lower Manifold Depth Adjusts in position.





- 4. Adjust the depth of the Upper and/or Lower Manifolds as desired. The Manifolds do not need to remain parallel to one another. Maximum depth variation for a single Manifold is 3.75" (9.5 cm).
- 5. When satisfied with the depth positions of the Manifolds, use the 10mm Wrench to retighten the Cap Screws to lock the Manifold Depth Adjusts in place.
- 6. Repeat this procedure to adjust the depth of the Manifolds at the other end of the Steam Tunnel and on the opposite side of it.



NOTE: The example above is one of many possible Manifold depth configurations and is not necessarily the ideal one for all situations.

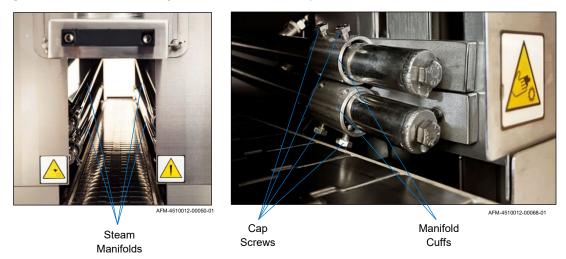
Example of Steam Manifold Depth Adjustment (Front View)

Adjusting Manifold Angle

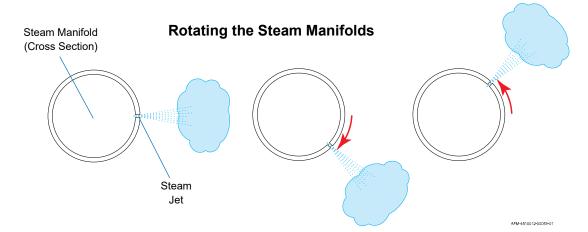
If desired, the Steam Jets of each Manifold can be angled upward or downward to further customize how steam is directed.

To Adjust the Angle of the Manifolds:

- 1. If not already done, power off the GEN-S and allow the system to cool to 100 °F. Once the system has cooled, continue to be cautious of heat and steam.
- 2. Open all four Manifold Access Doors.
- 3. To redirect the angle of the Steam Jets on a Manifold, use a 13 mm Wrench to loosen the Cap Screws on the Manifold Cuffs on both ends of the desired Manifold (just inside each opening of the Steam Tunnel).



4. Rotate the Manifold so that the holes along its length are directed at the desired angle for steam output.



- 5. Use the 13mm Wrench to retighten the Cap Screws when finished
- 6. Repeat for any other Manifolds for which a change in Steam Jet angle is desired.

Running Product

To run product through the GEN-S Steam Heat Shrink Tunnel, follow the procedure below.

Total Time Required Before Running Product:

At least 20 minutes •

To Run Product:

1. Turn the System Main Power Switch on.



System Main Power Switch (On)



Blowdown Valve (Closed)

- 2. Ensure that the Blowdown Valve is closed.
- 3. Open the external water supply Valve to fill the Boiler. Make sure water is flowing freely in the Water Line.
- 4. Turn the Boiler Control Power Switch on.



(On)



Sight Glass

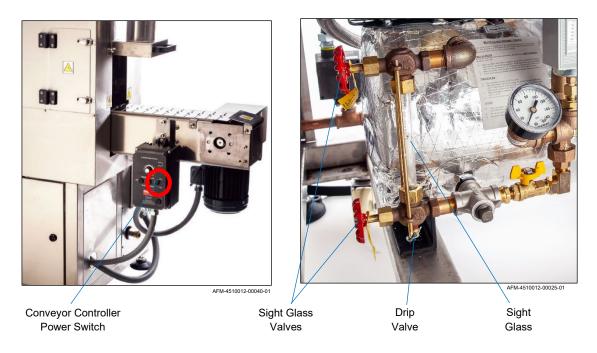


AFM-4510012-00052-01

5. After the Boiler is full, as evidenced by the Sight Glass being approximately half full, wait approximately 10 minutes until the Boiler Pressure Gauge stabilizes at 40–80 PSIG.

IMPORTANT: The High Limit Control and Operating Pressure Controls are preset at the factory and do not need to be adjusted.

6. Turn on the Conveyor by clicking the Conveyor Power Switch up.



- 7. Verify that the two Sight Glass Valves are open (turned clockwise).
- 8. Verify that the Drip Valve at the bottom of the Sight Glass is closed.
- 9. Once the Conveyor is on, adjust the dials on the Conveyor Controller to set the speed desired for label shrinking. It is recommended to start with 25-30 on the Speed Control setting for the Conveyor.



NOTE: If the pressure exceeds 85 PSIG, a Pressure Tab on the top of the High Limit Pressure Control pops out and needs to be reset by pushing it down.

- 10. Run some test product through the Steam Tunnel and adjust Conveyor speed and Manifolds as needed.
- 11. If desired, regulate the speeds of the upstream Conveyor, Sleever, and Timing Screw for maximum results.

Shutting Down

At the end of each workday, the system should be down using the procedure below.



WARNING: The GEN-S produces hot water and hot steam, both of which can cause severe burns. Many surfaces of the unit can also become very hot. Use caution to avoid burns, even after the system has cooled down.



WARNING: Always wear proper safety equipment, including Heat-resistant Work Gloves and Safety Glasses/Goggles, when operating or maintaining the GEN-S.

To Shut Down the GEN-S:

- 1. Turn the Boiler Controller Power Switch off.
- 2. Allow the Conveyor to move any remaining product out of the Tunnel.
- 3. Turn the Conveyor Power Switch off
- 4. Turn the System Main Power Switch off.



Boiler Controller Power Switch (Off)



Conveyor Power Switch (Off)



System Main Power Switch (Off)

- 5. Allow the system to cool to 100 °F (37.8 °C) and continue to be cautious of heat and steam.
- 6. Perform the blowdown procedure (see "Blowdown Procedure" on page 53).

Maintenance

This section describes basic maintenance that should be performed to keep the STC-WSN GEN-S in good working condition. For maintenance needs beyond what is described in this User Guide, please contact your authorized AFM distributor.

The precautions below should be observed for all maintenance procedures for the GEN-S.



Warning: Electric shock hazard. Before performing the following maintenance procedures, verify that the Tunnel Main Power Switch is in the Off position.



WARNING: Live steam and burn hazard. All maintenance should be performed after the system – including the inside of the Steam Tunnel – has had time to cool to 100 °F. Even then, some surfaces may be hot, and the system can still emit hot steam or hot water, so caution must be exercised. Failure to follow this directive can result in serious injury.



WARNING: Always wear proper safety equipment, including Heat-resistant Work Gloves and Safety Glasses/Goggles when operating or maintaining the GEN-S.



ATTENTION: Do not attempt to perform maintenance or repairs other than those described in this User Guide. Failure to follow this directive can result in injury, damage the equipment, and will void the warranty. If in doubt, contact your AFM distributor.

Maintenance Schedule

Adherence to the maintenance schedule below will extend the life of the GEN-S, ensure the best performance, and reduce the likelihood of injury.

Frequency	Maintenance Task
	Visually check the water level in the Sight Glass.
Every hour during operation	Check for leaks from the Sight Glass. If leaks are found, tighten the Sight Glass fixture nuts or replace the Sight Glass gaskets
Every 4 hours during first week	Perform blowdown procedure (see "Blowdown Procedure" on page 53).
Daily at end of workday	Perform blowdown procedure (see "Blowdown Procedure" on page 53).
Every 2 weeks	Clean or replace the Strainer (see "Cleaning or Replacing the Strainer" on page 60).
	Perform manual cleanout (see "Manual Cleanout" on page 56).
Every 3 months	Check and clean the Probes (see "Checking and Cleaning the Probes" on page 61).

Blowdown Procedure

Performing this blowdown procedure at least every day is an essential part of steam operation. It is good preventive maintenance, increases Boiler life, and prevents the Boiler from malfunctioning due to scale buildup. Blowdown removes most of the scale sediment but does not remove it completely. Ideally, blowdown should be performed at the end of the working day. For the first week of operation, two blowdowns per day to clean the inside of the Boiler are strongly recommended.



ATTENTION: Never leave the Boiler unattended during the blowdown procedure.

Needed to Perform Blowdown Procedure:

- Heat-resistant Work Gloves
- Safety Glasses/Goggles

To Perform Blowdown Procedure:

- 1. Turn the Boiler Controller Power Switch off.
- 2. Allow the Conveyor to move any remaining product out of the Tunnel.
- 3. Turn the Conveyor Power Switch off
- 4. Turn the System Main Power Switch off.



Boiler Controller Power Switch (Off)



Conveyor Power Switch (Off)



/ AFM-4510012-00053-01 System Main Power Switch (Off)

5. Wait for at least 20 minutes to allow the system to cool.

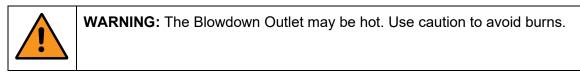


ATTENTION: The Heating Element inside the Boiler Electrical Cabinet must be given sufficient time to cool before continuing with the blowdown procedure. Failure to wait for the temperature to decrease can result in Heating Element failure.

6. Allow the Boiler pressure to decrease to 10 PSIG according to the Pressure Gauge.



7. Attach the Blowdown Hose (connected to a drain or a Blowdown Tank) to the Blowdown Outlet).





Blowdown Outlet

0.75" (19,.1 cm) Blowdown Hose Blowdown Tank 8. Open the Blowdown Valve slowly by turning the handle until valve is fully opened (parallel to the line) for approximately 3 seconds, and then turn the handle back to the closed position (perpendicular to the line).

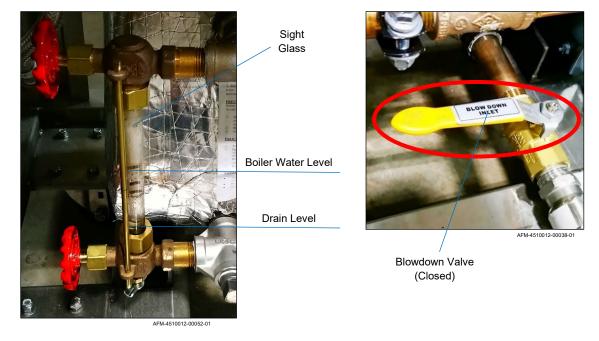


Blowdown Valve (Open)



Blowdown Valve (Closed)

9. Repeat this process of opening and closing the Blowdown Valve until the water level reaches the bottom of the Sight Glass.



- 10. When water discharge is complete, completely close the Blowdown Valve (perpendicular to the line).
- 11. Detach the Blowdown Hose.
- 12. Blowdown is complete.

External Cleaning

The exterior of the GEN S may require occasional cleaning due to environmental contaminants. To clean the external components, gently wipe them with a clean cloth and cleaning spray.

Manual Cleanout

Every 3 months, a manual cleanout of the Boiler Tank and Heating Elements is necessary.



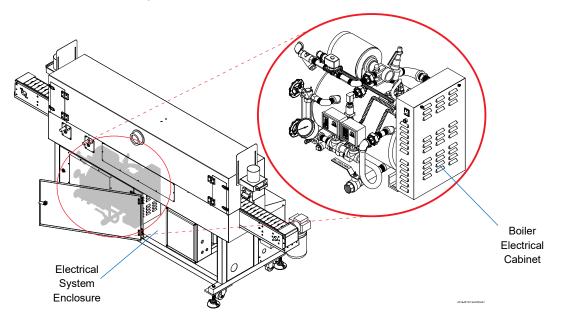
ATTENTION: Do not use boiler cleaning compounds.

Needed to Perform a Manual Cleanout:

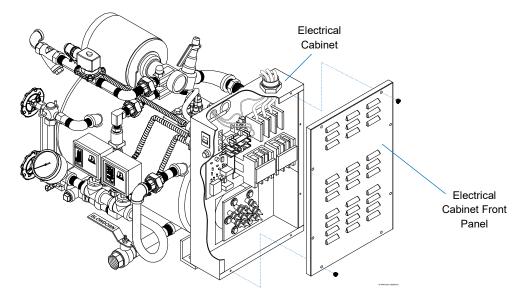
- Long-Handled, Soft Wire Brush
- Teflon Paste
- Heat-resistant Work Gloves
- Safety Glasses/Goggles
- New Gasket

To Perform a Manual Cleanout:

- 1. Perform the blowdown procedure to empty the Boiler of all water (see "Blowdown Procedure" on page 53) and allow the system at least 20 minutes to cool afterward.
- 2. Open the Electrical System Enclosure.



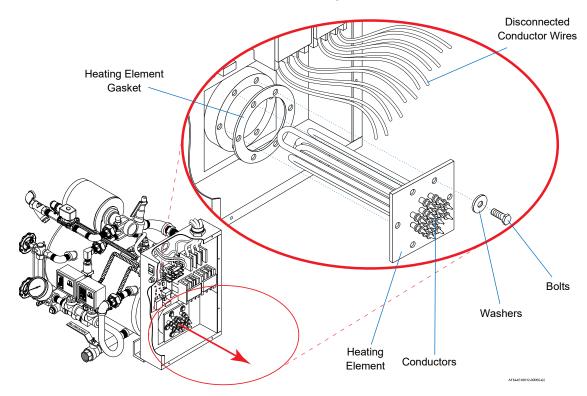
3. Remove the Electrical Cabinet Front Panel to access the inside of the Electrical Cabinet.



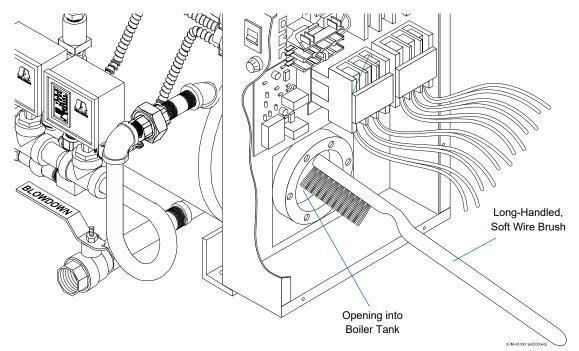
4. Carefully disconnect the Conductor Wires from the Conductors, noting which Wire is connected to which Conductor.

IMPORTANT: Make note of the original wiring arrangement of the Conductors. This information will be necessary during reassembly.

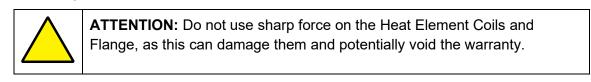
5. Remove the six Bolts and Washers that hold the Heating Element in place.

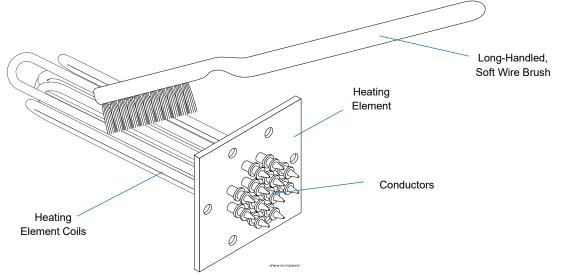


- 6. Carefully pull the Heating Element away from the Boiler Tank, preserving the orientation of the Heating Element. The inside of the Boiler Tank should now be accessible.
- 7. Use water and a Long-Handled, Soft Wire Brush to scrape away any scale or sediment buildup from inside the tank.



8. Staying aware of the orientation of the Heating Element and its Conductors, gently use water and a Soft Wire Brush to remove foreign material from each Heat Element Coil and Flange.





- 9. Apply Teflon paste to both sides of the new Heating Element Gasket and use it to replace the old Heating Element Gasket.
- 10. With the new Gasket in place, install the freshly cleaned Heat Element back onto the Boiler Tank and secure it with the six Bolts.
- 11. Reconnect the Conductor Wires to the Conductor, referring to rewiring notes taken during disassembly to ensure original wiring configuration.



WARNING: Electrical Shock Hazard. Be sure that Conductors and Conductor Wires are dry before reconnecting.



WARNING: Failure to reconnect the Conductors and Conductor Wires in their original configuration will result in a short in the Boiler system and damage to the Boiler Controls and other components.

- 12. If needed, see the Boiler Owner's Guide (included) for additional location of parts.
- 13. Reinstall the Electrical Cabinet Front Panel.

Inside of a Boiler that has not been Cleaned Out for a Year



Cleaning or Replacing the Strainer

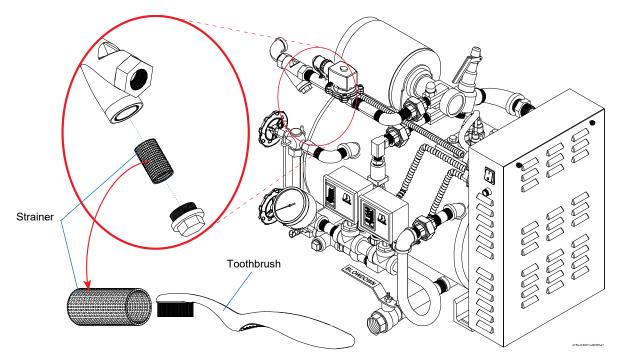
The Boiler's Strainer should be cleaned out every two weeks. Poor maintenance of the Strainer can result in early Boiler failure. The Strainer is located near the Solenoid between the Water Feed and the Pump, on the lower side of the Y in the Water Line. The Strainer itself is a wire screen cup situated inside of the Y-Fitting.

Needed to Clean the Strainer:

- Adjustable Crescent Wrench
- Toothbrush

To Clean the Strainer:

- 1. Perform the blowdown procedure to empty the Boiler of all water (see "Blowdown Procedure" on page 53) and allow the system to cool.
- 2. When the area above the Solenoid has cooled, remove the Pipe Plug with an Adjustable Crescent Wrench and remove the Strainer.



- 3. Depending on the purity of the water supply, the Strainer may be very dirty. Rinse the Strainer in water, and gently clean it inside and outside with a toothbrush.
- 4. If the Strainer cannot be adequately cleaned, it may need to be replaced. Strainers (Part Number 4502783) are available from AFM.
- 5. Place the new or cleaned Strainer back into the Y of the Pipe, oriented as it was before, and use the Adjustable Crescent Wrench to close the Pipe Plug again.

Checking and Cleaning the Probes

Every 3 months, check and clean the Probes that check the water level inside the Boiler.

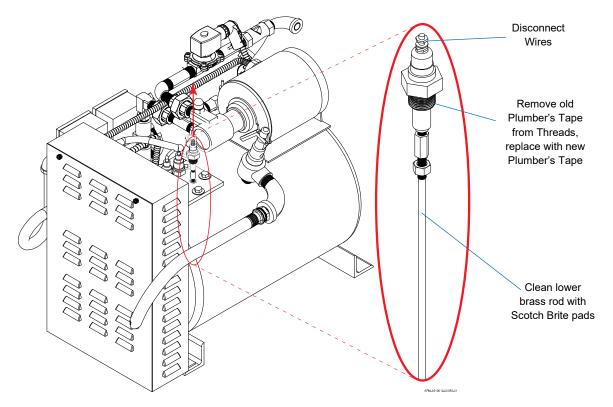
NOTE: Only two of the three Probes are used. The third Probe is included as a spare, which can be cut to match the length of the Probe that it is replacing. However, all three Probes should be cleaned during the maintenance procedure described below.

Needed to Clean the Probes:

- 3/16" Crescent Wrench
- 20mm Socket Wrench
- Scotch Brite[™] Pads
- Plumber's Tape

To Clean the Probes:

- 1. The three Probes are located on the top of the Boiler Tank. Using the 3/16" Crescent Wrench, disconnect the Wires from the top of each Probe, making note of which wire connects to which Probe.
- 2. Using the 20mm Socket Wrench, loosen the Nut that holds each Probe in place and pull each Probe upward to remove it from the Boiler Tank.



- 3. Inspect the Probes for any scale buildup.
- 4. Use a Scotch Brite pad to carefully and gently remove scale from each Probe.



ATTENTION: Do not use hard objects or sharp force to break up the scale, as this can damage the Probes and potentially void the warranty.

- 5. Remove all the old Plumber's Tape from the threads of the Probes.
- 6. Put fresh Plumber's Tape on the threads of the Probes.
- 7. Place the Probes back in the top of the Boiler Tank and use the Crescent Wrench to gently tighten them snugly back into place.
- 8. Reconnect each Probe to the same wire to which it was previously attached.

NOTE: If a Probe is connected to the wrong wire, the Boiler will not operate correctly.

9. For further details, see the Boiler Owner's Guide (included).

Troubleshooting

Below are some common problems that may be encountered during steam heat shrinking. If other issues occur that are not covered in this section, call your authorized AFM distributor for assistance.



WARNING: Live steam and burn hazard. Use caution. Failure to follow this directive can result in serious injury.



WARNING: Always wear proper safety equipment, including Heat-resistant Work Gloves and Safety Glasses/Goggles when operating or maintaining the GEN-S.



ATTENTION: Do not attempt to perform troubleshooting beyond what is described in this User Guide. Failure to follow this directive can result in injury, damage the equipment, and will void the warranty. If in doubt, contact your AFM distributor.

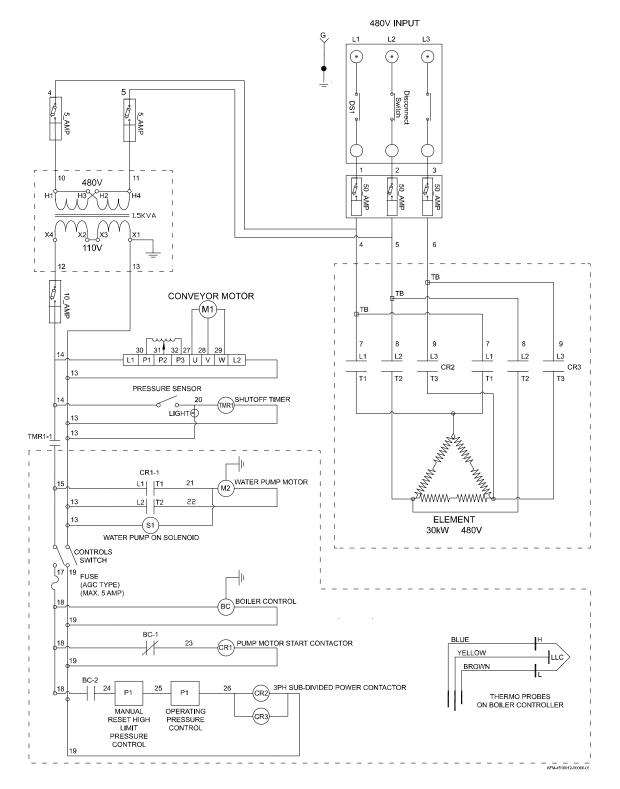
Problem	Possible Cause	Solution
Boiler does not fill.	No water supply.	Ensure that the Water Valve to the Boiler is in the Open position.
	Sight Glass Valves are closed, resulting in the Sight Glass not properly displaying the amount of water in Boiler.	Ensure that both Sight Glass Valves are open.
	Open or leaky Drip Valve below Sight Glass, resulting in the Sight Glass not properly displaying the amount of water in Boiler.	Check for water below the Drip Valve. If any water, ensure that Drip Valve is closed. If problem continues, contact AFM.
	Probes are improperly connected.	Check that each Probe is connected to the correct wire (see "Checking and Cleaning the Probes" on page 61).
	Leak elsewhere in the system.	Contact AFM.
	Water Pump on the Boiler has failed.	Replace the Water Pump (Part Number 4502781).

Problem	Possible Cause	Solution
	Heating Element is burnt out or malfunctioning.	Replace the Heating Element (Part Number 4502779) (see "Manual Cleanout" on page 56 for information on how to access and remove the Heating Element).
		Check the three Fuses and replace any or all of them as necessary (Part Number 4500812). Fuses are inside the AC Power Box (see "Electrical System" on page 25). Contact AFM for guidance on changing the Fuses.
	Fuses are blown. (Lack of steam pressure may be accompanied by a "bang").	Check the three Fuses and replace any or all of them as necessary (Part Number 4500812). Fuses are inside the AC Power Box (see "Electrical System" on page 25). Contact AFM for guidance on changing the Fuses.
Lack of steam pressure.	Dirty Strainer.	Clean or replace the Strainer (see "Cleaning or Replacing the Strainer" on page 60)
	Poor or inconsistent maintenance, resulting in excessive sediment buildup in the Boiler.	Clean out the Boiler (see "Manual Cleanout" on page 56) and practice blowdown procedure (see "Blowdown Procedure" on page 53) at the end of each workday going forward.
	Impure water supply.	Test facility water supply for purity and make necessary adjustments. Ensure that the GEN-S is receiving filtered or softened water.
	Sediment buildup on the Probes.	Check and clean the Probes (see "Checking and Cleaning the Probes" on page 61).
	The High Limit Pressure Control has triggered.	If the tab on the top of the High Limit Pressure Control has popped up, push it back in.

Problem	Possible Cause	Solution
	Pressure Controller on the Boiler has failed.	Replace the Pressure Controller (Part Number 4503284). Contact AFM for guidance.
There is Boiler pressure, but no Steam coming out of Manifolds.	Leaky or blocked Hose.	Contact AFM for guidance.

Electrical Schematics

Complete System: WSN GEN-S



Boiler

		(,				
FACTORY WIRING — FIELD WIRING POINT OF CONTACT	POWER (KW)	VOLT (V)	AMP (A)	OVER-CURRENT PROTECTION RATING	POWER WIRE SIZE (AWG) MIN. 90 C	GROUND WIRE SIZE (AWG) MIN. 90C
(NF) NOT FURNISHED	20 20	208 220	55.6 52.5	70 60	6	10 10
WIRE COLOR CODE	20	240 240 480	48.2	60 30	8 12	10 10
B - BLACK BL - BLUE G - GREEN R - RED W - WHITE Image: Comparison of the second	30 30 30 30 30	208 220 240 480	24.1 83.4 78.8 72.3 36.1	100 90 90 45	4 4 4 8	8 8 8 10
W-WHITE					4 8	

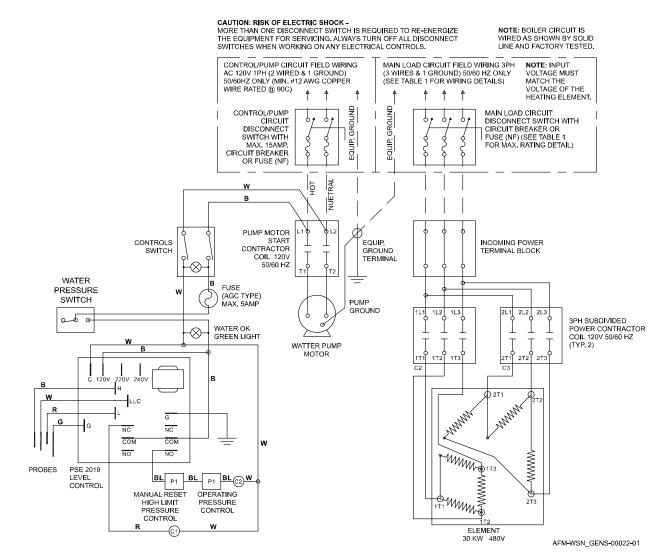


TABLE 1: FIELD WIRING DETAIL (90C TEMP RATED COPPER CONDUCTORS ONLY)

Parts List

Recommended Spare Parts List

Tunnel

Part Number	Description	Quantity
4500773	FUSE UL CLASS CC MID. KLDR-10 600V	1
4500777	FUSE UL CLASS CC MID. ATD-R 5A 600V	2
4500812	FUSE-50A LPJ-SP	3

Boiler

Part Number	Description	Quantity
4502944	CONTROL BOARD-MAB BOILER 240V	1
4503256	SIGHT GLASS, MAB30 BOILER 6.5"	1
4503257	WASHER, BRASS FOR MAB30 SIGHT GLASS	2
4503258	SEAL, PTFE FOR MAB30 SIGHT GLASS	2
4503283	CONTROL, PRESSURE LIMIT MANUAL RESET	1
4503284	CONTROL, PRESSURE	1
4503494	VALVE, SAFETY RELEASE MAB30	1
4502781	PUMP, ROTARY VANE FOR MAB30	1
4502858-3	PROBE ROD 1/4" DIA. WATER SENSOR	1
4502779	ELEMENT, HEATER	1
4503294	HOSE, 900MM	2
4503295	HOSE, 600MM	2
4503296	HOSE, 200MM	2
4503297	HOSE, 450MM	2

Additional Parts

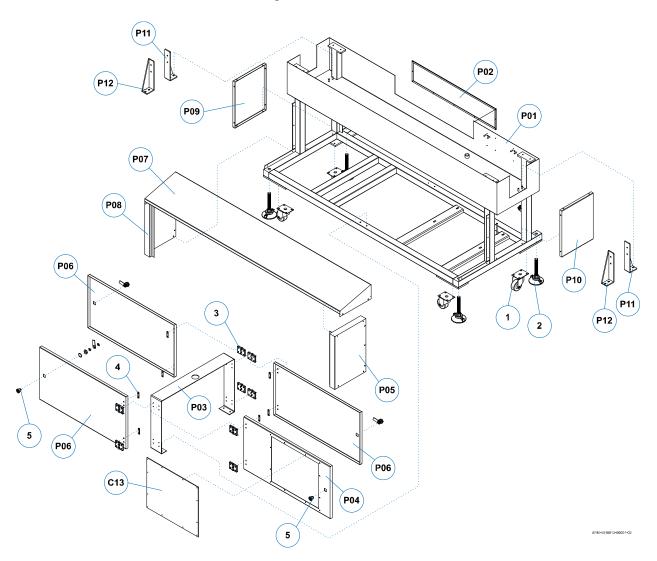
Part Number	Description	Quantity	UOM
055029-018	WASHER-FLAT 1/4 SST	6	EA
058502-854	WIRE-UL 1007,16AWG,GRN/YEL	4	FT
058503-500	WIRE-UL 1015,16AWG,BLK	10	FT
058503-502	WIRE-UL 1015,16AWG,RED	15	FT
058503-509	WIRE-UL 1015,16AWG,WHT	15	FT
058503-900	WIRE-UL 1028, 8AWG,BLK	36.5	FT
058503-905	WIRE-UL 1015,8AWG,GRN	11	FT
062733-003	LUG-RING,16-14G,8 STUD	5	EA
062737-001	LUG-SPADE,16-14G,5-6 STUD	10	EA
062740-001	LUG-FISO,16-14G,.032X.250	2	EA
080837-002	TERM BLOCK-GND,108A,USLKG 16N	2	EA
091183-001	TERM BLK-600V 30A,ENTRELEC	4	EA
091184-001	END SECTION-ENTRELEC	2	EA
093029-001	TERM BLK-JMPR BAR,10P,M4/6	0.2	EA
1602251	NUT, LOCK, 1/4-20, SS,	2	EA
4500543	FUSE BLOCK, CLASS CC 1 POLE	3	EA
4500686	FERRULE TWO-WIRE INS. CRIPM-ON	2	EA
4500715	FITTING CONT FN CONDUIT 45 DEG	1	EA
4500764	FUSE BLOCK UL CLASS J, 3 POLE	1	EA
4500773	FUSE UL CLASS CC MID. KLDR-10 600V	1	EA
4500777	FUSE UL CLASS CC MID. ATD-R 5A 600V	2	EA
4500812	FUSE-50A LPJ-SP	3	EA
4501655	TEMPERATURE GAUGE	1	EA
4501675	TERMINAL BLOCK MOD., DIN 1 & 3	4	EA
4501780	TRANSFORMER TS HIGH-INRUSH AC/	1	EA
4501852	WIRE FERRULE, INS. CRIMP-ON	18	EA
4501860	WIRE FERRULE, INS. CRIMP-ON 8	15	EA
4502636	PIPE, 1" X 6" S.S.	1	EA
4502637	ELBOW, PIPE 1" S.S.	1	EA
4502639	FITTING, 37* FLARED 1/4"	1	EA
4502641	HOSE, S.S. BRAIDED 1/2" X 24"	1	EA
4502642	FITTING, PIPE ELBOW 1/2" BRASS	2	EA
4502647	FITTING, 1/2 X 1/4 REDUCER BRASS	1	EA
4502650	FITTING, PIPE ELBOW 1/2" BRASS	1	EA
4502657	DRIVE, VFD 1HP	1	EA
4502669	FITTING, WYE, BRASS 1/4NPT	1	EA
4502670	HOSE, BRAIDED S.S. 1/4" X 12"	1	EA

Part Number	Description	Quantity	UOM
4502719	FITTING, 37* FLARED 1/2"	3	EA
4502722	HOSE, BRAIDED S.S. 3/4" X 24"	1	EA
4502723	FITTING, 37* 3/4"NPT BRASS	1	EA
4502725	HOSE, BRAIDED S.S. 1/4" X 30"	1	EA
4502726	ENCLOSURE, FIBERGLASS 15X13X7	1	EA
4502727	BOILER, ELECTRIC 30KW 100PSI	1	EA
4502733	PANEL, FOR FIBERGLASS ENCLOSURE	1	EA
4502734	SWITCH, DISCONNECT 40HP NEMA 4X	1	EA
4502767	HOSE, BRAIDED S.S. 1/2" X 18"	1	EA
4502768	VALVE, BACKFLOW PREVENTION 1/2" BRASS	1	EA
4502769	FITTING, GARDEN HOSE TO PIPE	1	EA
4502770	CONNECTOR, BULKHEAD 1/2"NPT S.S.	2	EA
4502821	SPACER-1/4"ID X 3/4" OD X 1"L,	2	EA
4502823	FTG-1/4 NPT X 1/4 NPT X 2"L,STRAIGHT,BRASS	1	EA
4502824	FTG-3/4 NPT, F/M, 90 ELBOW, BRASS	1	EA
4503021	HOSE-1/2 X 1/2 NPT, 5' LNG	1	EA
4503022	LIGHT-GREEN, PANEL MNT, 13MM, 120VAC	1	EA
4503023	SWITCH-LOW-PRESSURE, 1/2NPT, WASHDOWN, 3-90 PSI	1	EA
4503024	TIMER-MULTIFUCNTION RELAY, 120VAC	1	EA
4503025	FTG-TEE 1/2 NPT	1	EA
4503042	ENCLOSURE,10-1/2" x 8-1/2" x 7-1/4"	1	EA
4503043	PANEL 8-3/4" x 7 FOR 4503042	1	EA
4503294	HOSE, BRAIDED S.S. 1/4" X 900mm	2	EA
4503295	HOSE, BRAIDED S.S. 1/4" X 600mm	2	EA
4503296	HOSE, BRAIDED S.S. 1/4" X 200mm	2	EA
4503297	HOSE, BRAIDED S.S. 1/4" X 450mm	2	EA
4504016	FTG-PLUG 1/2 NPT W/SEALANT, SS	1	EA
4505174	BUSHING, 1" NPT - 3/4" NPT REDUCING SST	1	EA
52000176	CONDUIT LIQUID TIGHT 1/2"	9	FT
52000177	CONDUIT CONNECTOR 1/2" ST	3	EA
EAST0101	CONDUIT 1/2" 90 DEG	2	EA
EAST0906	LABEL HAZARDOUS VOLTAGE	2	EA
EP000551	SCREW 1/4-20 X 1-3/4 SS	2	EA
EP000584	LABEL CAUTION PINCH POINT	4	EA
ESC00571	CONDUIT LIQUID TIGHT 3/4"	9	FT
ESC00572	CONDUIT CONNECTOR 3/4" ST	1	EA
ESC00573	CONDUIT CONNECTOR 3/4" 90	2	EA
ETC00512	LABEL HOT SURFACES	10	EA

Exploded Diagrams

Stand

Drawing Number: YS130EX2-01

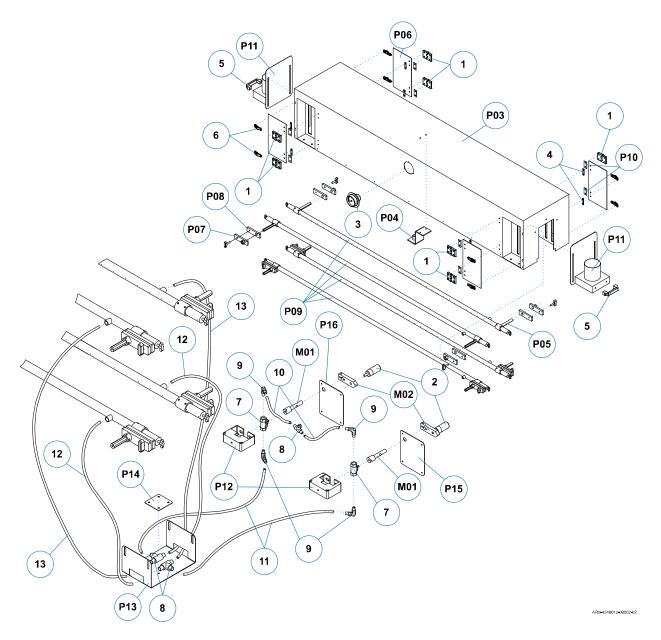


Item	Part Number	Description	Specification	Quantity
01	4505240	Caster	3" x 1"	4
02	4503330	Base	M20X150L add Nut	4
03	4500892	Door Hinge	14104	8
04	4505221	Galvanized Nut	N-30M6	8
05	4505242	Round Lock	C-408A	4

Item	Part Number	Description	Specification	Quantity
P01	4505255	Body	AFMYS130EX1-OP01	1
P02	4505254	Repair Board	AFMYS130EX1-OP01	1
P03	4505253	Cover-4	AFMYS130EX1-OP15	1
P04	4505252	Cover-5	AFMYS130EX1-OP16	1
P05	4505251	Cover-1	AFMYS130EX1-OP18	1
P06	4505250	Maintenance Door-1	AFMYS130EX1-OP19	3
P07	4505249	Cover-3	AFMYS130EX1-OP20	1
P08	4505248	Cover-3	AFMYS130EX1-OP21	1
P09	4505247	Cover-6	AFMYS130EX1-OP22	1
P10	4505246	Cover-6	AFMYS130EX1-OP28	1
P11	4505245	Conveyor Belt Stand-1	AFMYS130EX1-OP09	2
P12	4505244	Conveyor Belt Stand-1	AFMYS130EX1-OP10	2
C13	4505243	Windows	AFMYS130EX1-OC01	1

Tunnel

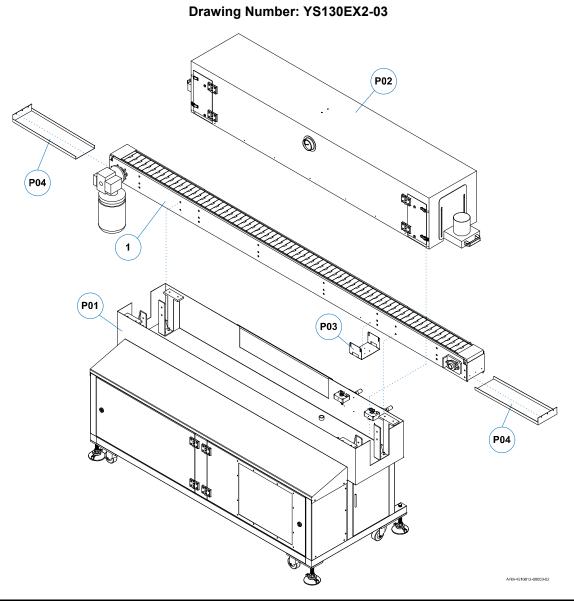
Drawing Number: YS130EX2-02



Item	Part Number	Description	Specification	Quantity
01	4500892	Door Hinge	14104	8
02	4502388	Steam Valve Handle	CB50M6	2
03	4505220	Thermometer	3"X0.5X1/2"X50MMX200C/F	1
04	4505221	Galvanized Nut	N-30M6	8
05	4500249	Bow Handle	AHG110	2
06	4505223	Door Latch	C 12-A (#66)	8
07	4505204	Ball Valve	SVF1316-020 1/4"PT	2
08	4505224	Pipe Fittings	SUTS-002 Outer Teeth Tee1/4"H	3
09	4505225	Pipe Fittings	SLS-0202 1/4"H*1/4"PR	4
10	4503296	Hose Connector	1/4"XSSNX200MM	2
11	4503297	Hose Connector	1/4"XSSNX450MM	2
12	4503295	Hose Connector	1/4"XSSNX600MM	2
13	4503294	Hose Connector	1/4"XSSNX900MM	2

Item	Part Number	Description	Specification	Quantity
M01	4505205	Handle-1	AFMYS130EX1-OM01	2
M02	4505206	Handle-2	AFMYS130EX1-OM02	2
P03	4505239	Outer Hood	AFMYS130EX1-OP02	1
P04	4505238	Fixed Plate	AFMYS130EX1-OP03	1
P05	4505237	Tube Adjustment Seat	AFMYS130EX1-OP05	8
P06	4505236	Shutter-1	AFMYS130EX1-OP06	4
P07	4505235	Tube Fixing Plate-1	AFMYS130EX1-OP11	8
P08	4505233	Tube Fixing Plate-2	AFMYS130EX1-OP12	8
P09	4503310	Steam Manifold	AFMYS130EX1-OP13	4
P10	4505232	Hinge Spacer	AFMYS130EX1-OP14	8
P11	4505231	Windshield	AFMYS130EX1-OP17	2
P12	4503589	Bracket, GEN-S Valve	AFMYS130EX1-OP23X3	2
P13	4505229	Hose Support Plate	AFMYS130EX1-OP24	1
P14	4505228	Hose Support Plate-1	AFMYS130EX1-OP25	1
P15	4505227	Control Panel-1	AFMYS130EX1-OP26	1
P16	4505226	Control Panel-2	AFMYS130EX1-OP27	1

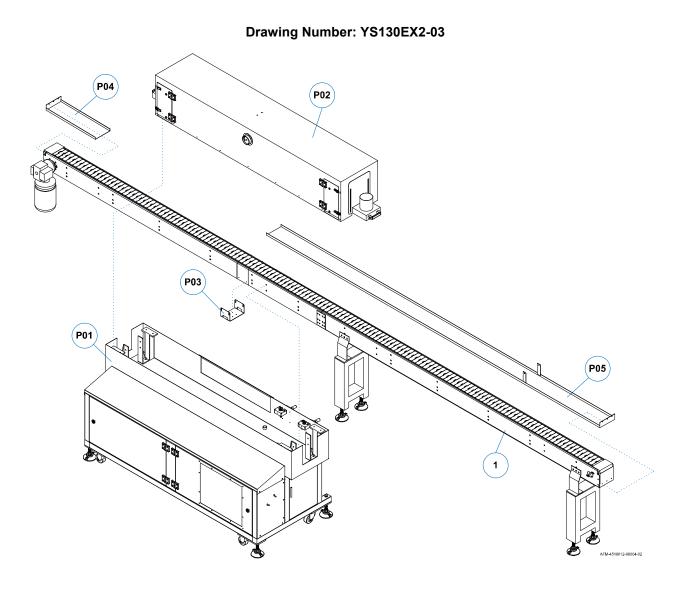
STC-WSN300-2M GEN-S



Item	Part Number	Description	Specification	Quantity
01	4502950	Conveyor	W150XL3000 3 Ø 380V/60HZ	1

Item	Part Number	Description	Specification	Quantity
P01	4505255	Body	AFMYS130EX1-OP01	1
P02	4505239	Hood	AFMYS130EX1-OP02	1
P03	4505229	Hose Support Plate	AFMYS130EX1-OP24	1
P04	4505256	Drip Tray	AFMYS130EX1-OP04	2

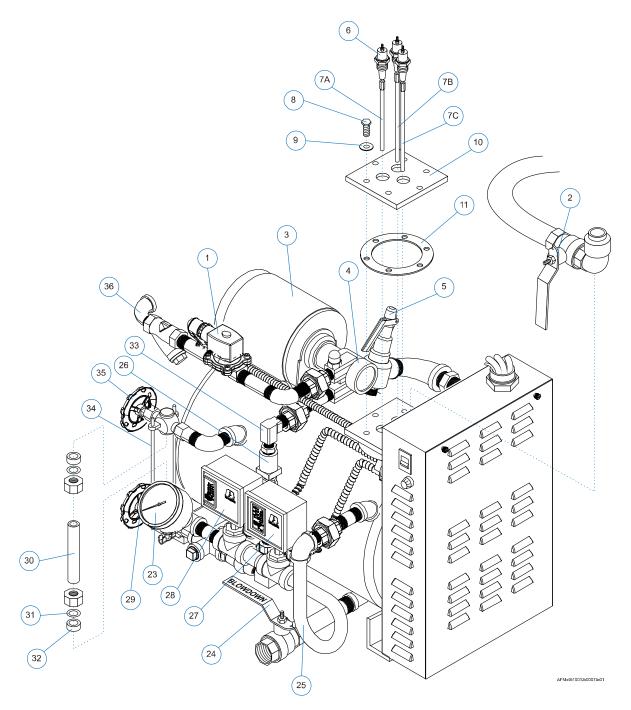
STC-WSN600-2M GEN-S



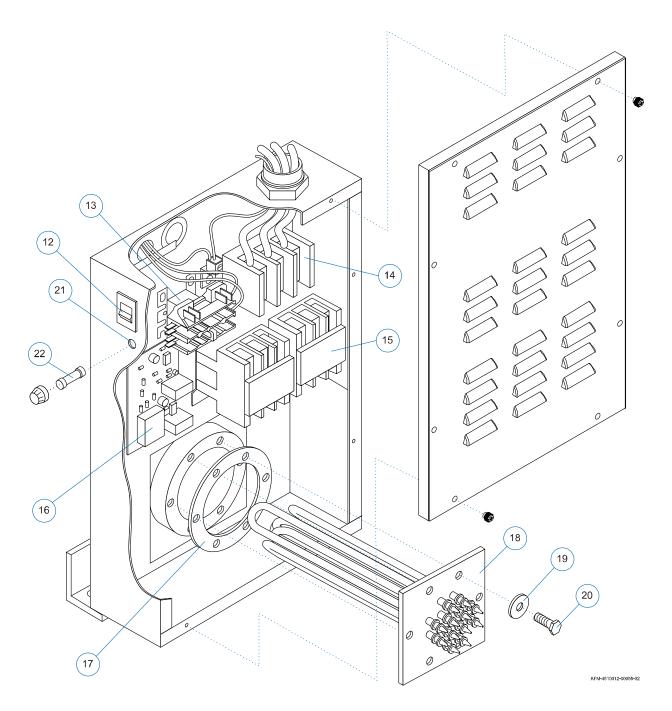
Item	Part Number	Description	Specification	Quantity
01	4505257	Conveyor	W150XL6000 3 Ø 380V/60HZ	1

Item	Part Number	Description	Specification	Quantity
P01	4505255	Body	AFMYS130EX1-OP01	1
P02	4505239	Hood	AFMYS130EX1-OP02	1
P03	4505229	Hose Support Plate	AFMYS130EX1-OP24	1
P04	4505256	Drip Tray	AFMYS130EX1-OP04	1
P05	4505258	Drip Tray	AFMYS130EX1-OP29	1

Boiler



Inside Boiler Electrical Cabinet



Item	Part Number	Description	Specification	Quantity
01	4502796	Solenoid Valve Ware ½" 120V	EVW3120	1
02	4503692	Ball Valve ½", 600WOG 150WSP	VALBAC3	1
03	4503274	Pump Motor 1/4HP 115V	MTR1	1
04	4502781	Rotary Vane Pump	MTP200	1
05	4503494	Safety Valve ¼" x ¾" 100psi	VALSA34100	1
06	4502780	Probe	3B1A	3
07A	4502858-2	Probe Rod 1/4" x 3 1/8"	ROD318	1
07B	4592858	Probe Rod ¼" x 4 1/8"	ROD418	1
07C	4592858	Spare Probe Rod ¼" x 4 1/8"	ROD418	1
08	4503861	5/16 – 18 x Grade 8 Bolts	VSB87	6
09	5003025	5/16 Flat Washer	VSB130	6
10	4503693	Probe Holding Flange Cover		1
11	4502984	Gasket for Heating Element	EG	1
12	5002857	Main Switch	2600A11E	1
13	5002853	Contractor 120V Coil 2Ph 40 Amp	R4243B1038	1
14	4503694	Terminal Block for PSE 12-108	BUCH416	1
15	5002854	Contractor 120V Coil 3Ph 50 Amp	ACC433UMM20	2
16	4502944	Liquid Level Control Circuit Board, Dual Function	PSE-2019	1
17	4502984	Gasket for Heating Element	EG	1
18	4502779	30KW/480V Heating Element	MEA30480	1
19	5003025	5./16 Flat Washer	VSB130	6
20	4503861	5/16 – 18 x Grade 8 Bolts	VSB87	6
21	4503695	Fuse Holder	НКР	1
22	4503860	Fuse	AGC4	1
23	4503696	Pressure Gauge 2" 160 psi	J2652	1
24	4503679	Ball Valve ¾", 600WOG 150 WSP	VALBAC4	1
25	4503697	Syphon ¼"	972B	1
26	4503698	Ball Valve 3/8" W/T-Handle	VALBAC2T	1
27	4503284	Pressure Control	1651035	1
28	4503282	Manual Reset Pressure Control	165151035	1
29	4503516	Glass Fixture ½" Lower	946	1
30	4503256	Sight Glass 6.5"	SG065	1
31	4503257	Brass Rings for TOPOG	TOPOG-BR	2
32	4503258	Sight Glass Gasket, Teflon	TOPOG-T	2
33	4502782	Inline Check Valve 3/8"	VALINB3	1
34	4503699	Sight Glass Protection Rod		1
35	4503515	Glass Fixture ½" Upper	905	1
36	4502783	Strainer ½"	STRAINER3	1

Warranty Statements

American Film & Machinery (AFM) warrants that all the products it ships will be in good working order and free from defects in material and workmanship for a period of one year from the date of shipment by AFM and will conform to the published specifications for that product.

Limitations

The warranty of AFM is contingent upon installation, operation, and maintenance of equipment under normal operating conditions. The warranty is void on equipment or parts: damaged by corrosion, improper use, accident, negligence or not operating within the specifications provided; damaged by fire, flood, earthquake, or such other causes beyond the control of AFM; that have been altered or repaired in any way changing the original performance and; that are normally expendable in the usual course of operation. Expendable items include, but are not limited to, heater elements, cutter blades and belts. The warranty period on each replacement equipment or part in fulfillment of the warranty on new equipment or parts shall be for the unexpired portion of the original warranty.

Repairs

All in-house repairs are rigorously tested for optimum operation and performance and warranted to be, under normal and proper use, free from defects in material and workmanship for a period of 90 days from the date of service.

Shrinking Quality

Shrinking quality achieved in a given application is dependent on the film, product, installation, material handling, and the maintenance provided. AFM makes no warranty that the shrinking quality achieved in an application will be the same as that achieved on a test piece in our demo facility.

Shipping Policy

Customer pays all incoming shipping charges for replacement components. If the item is defective and under warranty, AFM will pay all return shipping charges via the least costly method. If expedited shipping is desired, the customer must furnish their shipping account number and shipping fees will be charged to that account.

Exclusions

Damage due to tampering, abuse, improper adjustment, electrical interference, or the use of non-approved components will void any and all warranties by AFM and its distributors.

Warranty Verification

If you believe that a product or component may be defective and may be covered by warranty, obtain a Return Material Authorization number by contacting AFM technical support (Phone:

714-974-9006, Fax: 763-795-8867, or Email: info@afmsleeves.com). Based on the recommendation from AFM technical support, replacement components may be shipped out via UPS Ground or similar method. If expedited shipping is desired, customer must furnish their shipping account and shipping fees will be charged to that account.

Customer is required to return the defective component to AFM. If, after 30 days, AFM has not received the defective component, the customer will be invoiced for the replacement component. If the returned component is found to not be eligible for warranty, AFM will contact the customer, and the customer will be invoiced for the replacement component.

Warranty Eligibility

The warranty provided by AFM is only to the original buyer.

Limited Warranty

THIS WARRANTY SHALL NOT APPLY IF ANY MODIFICATION, ALTERATION OR ADDITION IS MADE TO THE PRODUCT WITHOUT AFM'S PRIOR WRITTEN APPROVAL. FURTHERMORE, THIS WARRANTY DOES NOT APPLY TO PRODUCT DEFECTS DUE TO MISUSE, ABUSE, NEGLECT, OR FAILURE TO FOLLOW RECOMMENDED PROCEDURES. ANY PRODUCT REPAIRED OR ALTERED BY PERSONS OTHER THAN AUTHORIZED AFM REPRESENTATIVES WILL NOT BE COVERED BY THIS WARRANTY. THIS WARRANTY DOES NOT APPLY TO CONSUMABLE ITEMS.

EXCEPT AS EXPRESSLY PROVIDED IN THIS WARRANTY, AFM MAKES NO REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, WITH RESPECT TO THE PRODUCT, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT OR ANY OTHER MATTER.

AFM SHALL HAVE NO LIABILITY TO ANY PERSON FOR INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES OF ANY DESCRIPTION WHETHER ARISING OUT OF WARRANTY OR OTHER CONTRACT, NEGLIGENCE OR OTHER TORT, OR OTHERWISE. NO AGENT, EMPLOYEE, OFFICER OR OTHER REPRESENTATIVE OF AFM, INC. HAS AUTHORITY TO BIND AFM TO ANY REPRESENTATION OR WARRANTY EXCEPT AS STATED HEREIN. UNDER NO CIRCUMSTANCES SHALL AFM'S LIABILITY HEREUNDER, FOR ANY REASON OR CAUSE EXCEED THE PRICE PAID TO AFM FOR THE PRODUCT.

Disclaimer of Damages

REGARDLESS OF WHETHER ANY REMEDY SET FORTH HEREIN FAILS OF ITS ESSENTIAL PURPOSE, IN NO EVENT WILL AFM BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, INDIRECT OR SIMILAR DAMAGES, INCLUDING LOST PROFIT OR LOST OPPORTUNITIES OF ANY TYPE ARISING OUT OF THE USE OR INABILITY TO USE THESE PRODUCTS EVEN IF AFM HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Technical Support

For assistance with installing, operating, or maintaining the STC-WSN GEN-S, contact your authorized AFM reseller or AFM Technical Support.

Phone: 714-974-9006

Fax: 763-795-8867

Email: info@afmsleeves.com

Web: www.afmsleeves.com

Thanks again for your purchase of AFM products. We are pleased to be a part of your shrink sleeving needs.

