



AN ISO 9001:2008 CERTIFIED COMPANY

USER MANUAL

Delta Table-top Shrink Tunnel

QS4020DSTVT



www.sevana.com

YOUR PACKAGING PARTNER

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1. FOREWORD

Thank you for choosing Sevana. You now belong to the Sevana family of over one million satisfied customers across the world. We are confident that you will have many years of complete satisfaction from this Sevana product.

We want you to derive maximum value from Sevana's reliable service and support infrastructure in India. We maintain Sevana's service mission of working continuously to provide customers with highest level of service, thereby ensuring mutually successful long term business association.

You can contact us through

Email	:	support@sevana.com	
Phone	:	+91-484-2680780	Monday to Saturday
Mobile	:	+91-9388180781	8.30 am – 5.00pm IST
Fax	:	+91-484-2680680	

We value your partnership

Yours sincerely

For Sevana Electrical Appliances Pvt. Ltd.

Manager in charge, Customer support

While contacting the support centre kindly provide the following information for a speedier support and service.

- Model
- Serial No
- The nature of problem

2. HOW TO USE THIS MANUAL

- ❖ Please read this manual carefully before installing and commissioning the machine.
- ❖ Please keep a copy of this manual for reference near the machine.

The information in this document is believed to be accurate and reliable. However, Sevana Electrical Appliances cannot accept any financial or other responsibilities that may result from the use of this information. No warranties are granted or extended by this document.

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3. SAFETY PRECAUTIONS

❖ Introduction

Machines of Sevana have been designed to provide extremely safe and dependable operation when properly used. Safety precautions must be observed during normal operation and when servicing the machines of Sevana.

❖ Warning

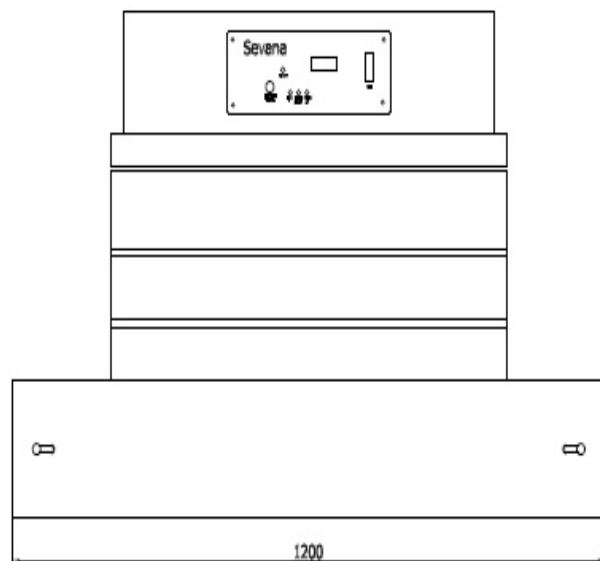
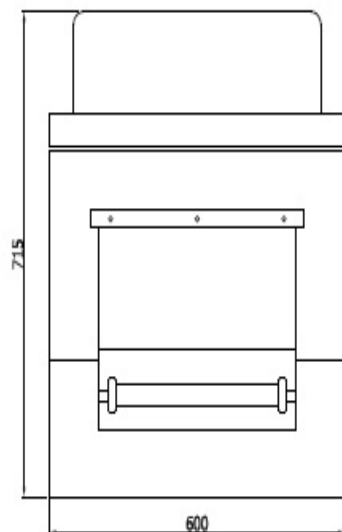
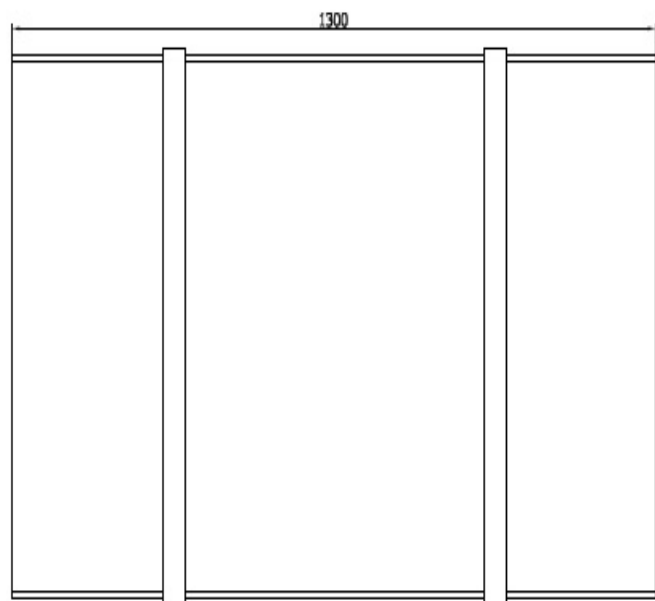
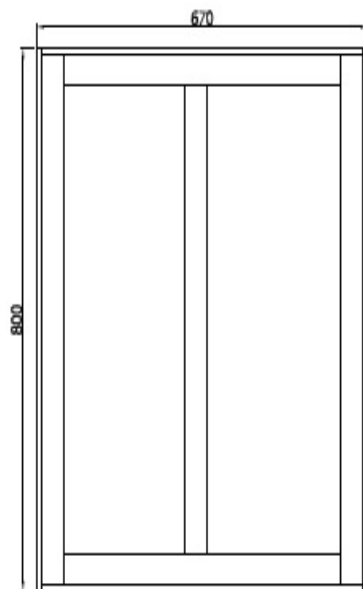
A warning describes safety hazards or unsafe practices which could result in personal injury or loss of life. A warning message is accompanied by a symbol as described in the following paragraphs and is also surrounded by a box to attract your attention.

- i.  This is a warning symbol indicating a hot surface.

- ii.  This is a warning symbol indicating moving parts.

1. The machine has to be grounded properly before using.
2. Never try to shrink wrap explosive or inflammable material.
3. Do not insert hand in the chamber when machine is in operation.
4. Do not allow any liquid to go in to the machine.
5. Do not keep Shrinkable film on the machine.

4. PACKING CASE AND MACHINE DIMENSIONS



5. PACKING SLIP

ITEM	QUANTITY
Machine	1
User manual	1
Screw driver (Star type)	1
Allen key (8)	1
Leveling screw	4
Double open-end wrench/spanner (19)	1
Tool storage box*	1

*Contains in disassembled and packed mode

6. UNPACKING

Note: Please verify the items with the packing slip.

- ❖ Inspect for any transit damages. If there are any, notify your dealer/transporter/insurance company or us immediately.
- ❖ The machine is shipped well packed in a plywood box.
- ❖ Place the wooden box with the “TOP” marked to the top.
- ❖ Remove all the side panels and top panel of the box.
- ❖ Lift the machine with the crate using a pallet jack.
- ❖ The leveling screws are separately packed and kept inside the box.
- ❖ Remove all packing materials.

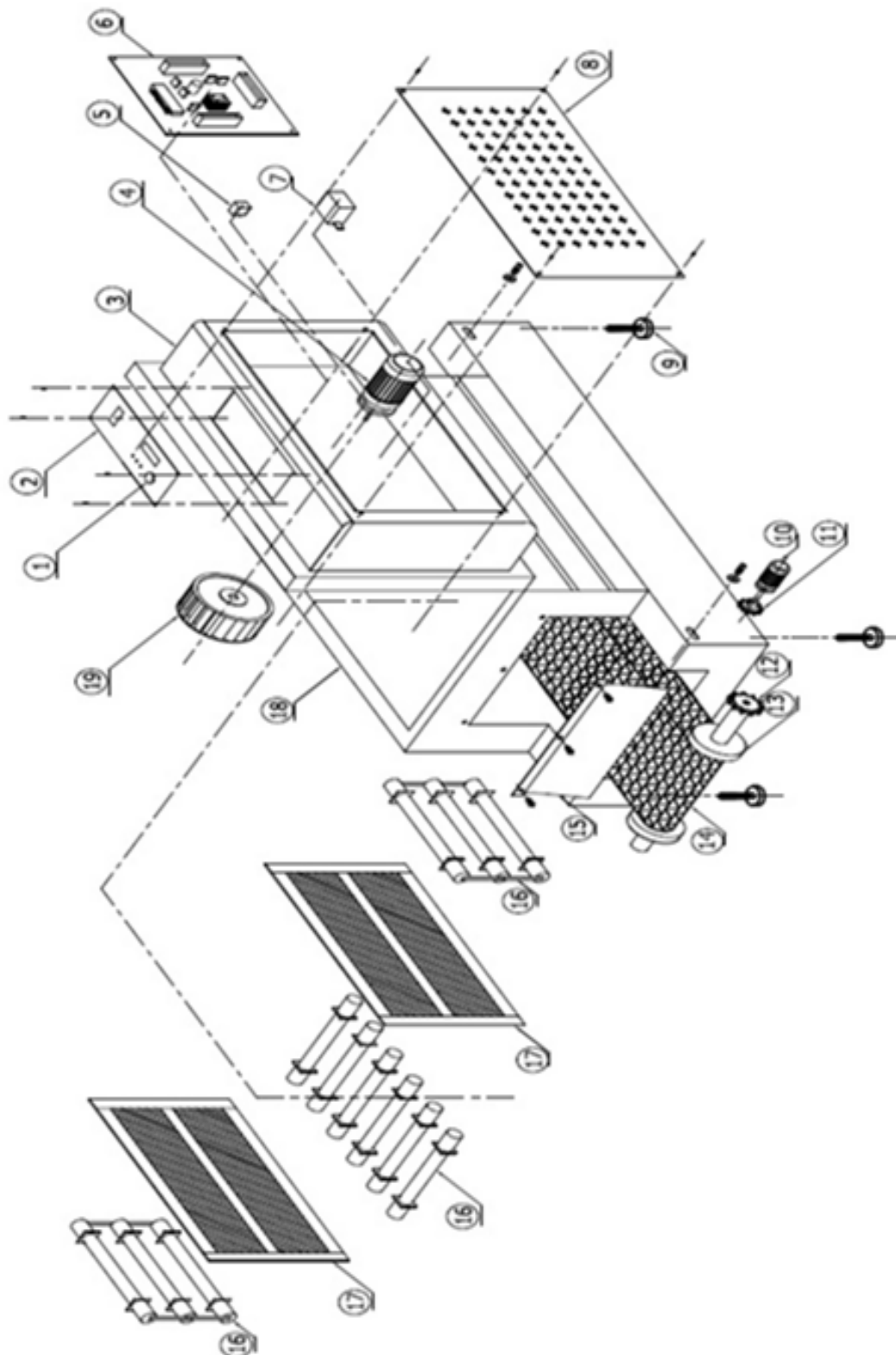
Tools required to unpack & assemble:

- Pry bar/Crowbar
- Claw hammer
- Double open-end wrench/spanner(19)
- Screw driver (Cross type)

7. TECHNICAL SPECIFICATIONS

Model	QS 4020 DSTVT
Window width (mm)	400 mm
Window height (mm)	200 mm
Voltage (V)	415 V
Power (KW)	7.5 KW
Tunnel size(mm)	800mmx400mmx200 mm
Conveyor speed (M/Min)	0-10 m/min
Maximum load weight (Kg)	5 Kg
Machine length (mm)	1200 mm
Machine width (mm)	600 mm
Machine height (mm)	750 mm

8. LIST OF PARTS



Sl no	Item name	Item code
1	Display	1033031
2	Front panel	
	Sticker	1050280
	Acrylic	1032083
3	Control cabin	-
4	Blower motor	1060191
5	Capacitor	1060192
6	Brain plate assembly	-
7	Heater and fan contactors	-
8	Control cabin cover	-
9	Leveling screw	1060195
10	Conveyor motor	1060196
11	Motor end sprocket	1060197
12	Drive end sprocket	1060198
13	Drive shaft	1060199
14	Conveyor chain	1060200
15	Curtain	1060201
16	Far-infrared quartz heater tube	1060202
17	Heater guard	1060203
18	Shrink chamber	-
19	Blower	1060204

9. INSTALLATION

1. Keeps the machine on the ground.
2. Bolt leveling screws to the chassis with the Bolts(M12) provided.
3. Before starting the machine please ensure that the chain is aligned with & rests on the chains sprocket and the links of the conveyor chain properly engaged with the teeth of all the sprocket wheels.

10. POWER CONNECTION

Five terminal points on the power connection block with indication R, Y, B, N and E. Connect the terminal points R, Y and B to phases N to the neutral and E to the earth. Switch on MCB.

11. CONTROL PANEL

MCB
LEDs
Blower on/off switch
Heater on/off switch
Control buttons
LCD display

12. STARTING THE MACHINE

CONTROL BUTTONS :

- ❖ MODE button
- ❖ STOP button
- ❖ UP button
- ❖ SET button
- ❖ DOWN button

To start the machine, connect the machine to appropriate power supply and switch on.

A LCD check function is done first; version of the software is displayed.

»»»»»»»»»»»»»»»»»» »»»»»»»»»»»»»»»»»»	SHRINK TUNNELS SEVANA Ver 3.0
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The machine has four (4) modes/program presets. Each mode preset parameters are

- Speed of conveyor
- Temperature of Chamber

These parameters can be modified by the operator if required. (Each mode can be used for different type of films/products)

The machine will automatically go to the previously used mode after initializing. Now the temperature will be building up. When the temperature is not built up to the preset level a message “Not ready” is displayed as

NOT READY TEMP:107° SPD:09
--

When the temperature is built up to the preset level the message will change to “MODE:x, TEMP: xxx, SPD:xx” also an audio indication is also given.

MODE: 1 TEMP:150° SPD:09
--

PROGRAM MODES :

Sevana’s micro-processor based shrink tunnel machine has 4 preset modes or programs. Each program can be set with different parameters.

Variable parameters in each mode/program are:

- Temperature
- Speed

Temperature represents the temperature to be set in shrink chamber in degree Centigrade (°C). Speed represents the speed of conveyor (Minimum-maximum = 0-7.5 Meters per minute). Parameter values 0-20.

TO PRESET PROGRAM MODES :

Eg: Target

Temperature : 203

Speed : 18

Select the mode by pressing “MODE” button

To set the temperature press “SET” button. It displays “Set Temperature”.

SETTINGS TEMP:40°C

To increase the temperature press the “UP” button continuously till the required value is displayed.

SETTINGS TEMP:203°C

Press the “SET” button to save the values. Now press the “UP” or “DOWN” button to increase or decrease the speed.

NOT READY TEMP:150° SPD:18
--

Any time pressing “UP” or “DOWN” button will increase or decrease the speed of the conveyor. The value is stored to the preset Mode/Program.

FEATURES:

If the temperature sensor probe fails, a message will be displayed on the Digital Display

CHECK TEMPERATURE
PROBE

13. SHUT DOWN/ SWITCHING OFF MACHINE

Press the “STOP” button for 1 second.

COOLING DOWN
TEMP:100° SPD:18

When the temperature is reduced to safe levels, the heaters, conveyor and fan is switched off automatically.

A message is displayed when ready to switch off.

SAFE TO TURN OFF
THE MACHINE

Now the power supply to the machine can be switched off.

14. SHRINKING OPERATION

- a. Special plastic films which shrink on application of heat are used for shrink wrapping. The temperature required for shrinking each film varies and this information can be obtained from the film manufactures. Shrink films commonly available are,
 - Low Density Poly Ethylene (LDPE)
 - Poly Vinyl Chloride (PVC)
 - Poly Olefin (POF)
- b. Insert the article in a preformed sleeve or tube of shrinkable film of suitable size. Seal the open ends & make a few holes on the film by pricking it with a pin. The corners of the film may also be sealed cut off for better appearance. If open ends are desired, the ends of the tube need not be sealed. An L – Sealer can be used to make this easier and for better productivity.
- c. Place the wrapped article on the conveyor at the inlet. The article will come out of the outlet properly shrunk. Inspect the article.
- d. If the shrinking is not sufficient increase the temperature setting or reduce the conveyor speed. If over shrunk, reduce the temperature setting or increase the conveyor speed. By manipulating the temperature and conveyor speed one could get the best result and productivity. Make final adjustment of speed and temperature after the temperature has reasonably stabilized.
- e. If POF or PVC film used, to avoid the conveyor rod marks on the product then adjust the conveyor rod support so that conveyor rod support will fret conveyor rods and the rod will rotate.

Shrink Film	Thickness(Microns)	Conveyor Speed	Temperature(° C)
POF	8	3 - 5	135 - 140
PVC	40	1 - 4	110 - 120
LDPE	60	1 - 3	150 - 170

15. MAINTENANCE

Caution: Isolate electric power supply before doing the maintenance.

A) Daily Maintenance

1. Blow off the dust and film debris using a blower or compressed air.
2. Remove any plastic leftover on the conveyor

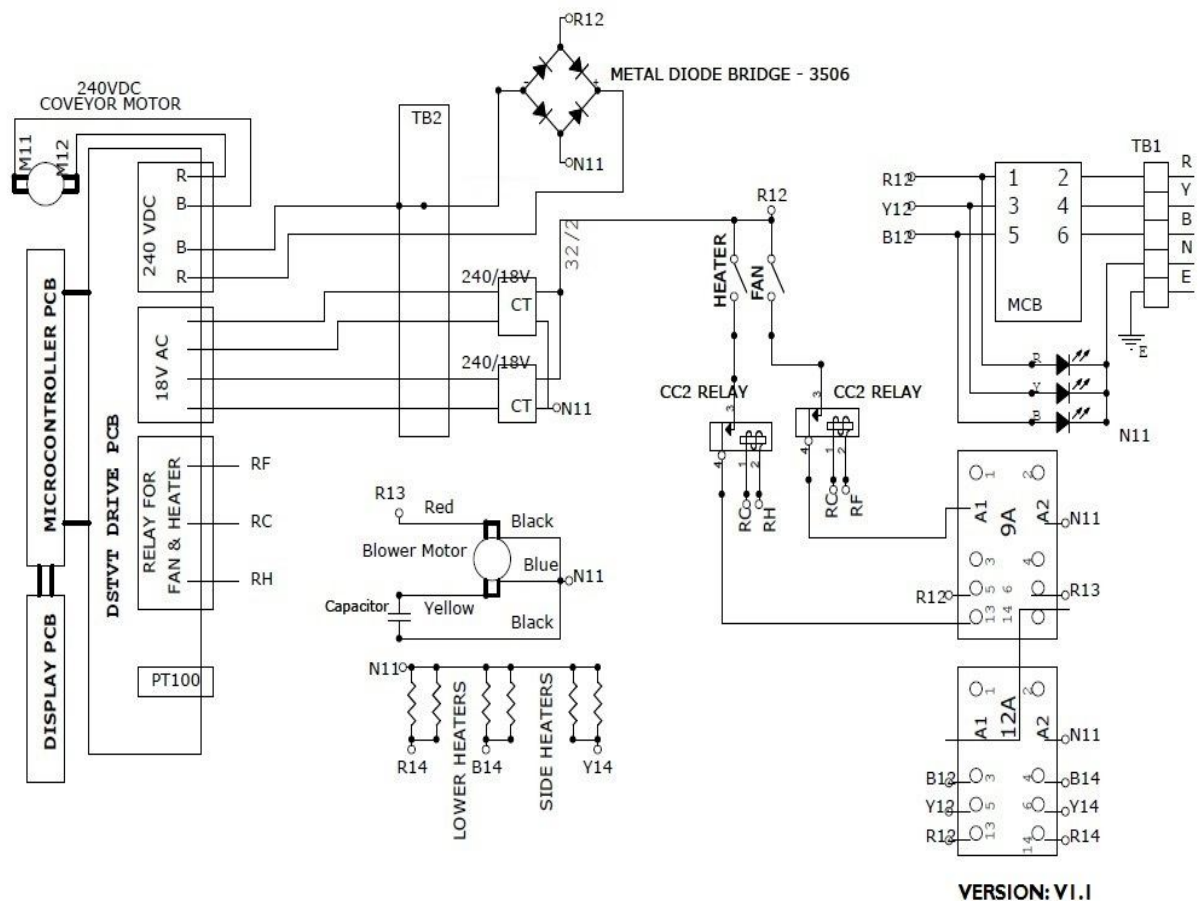
B) Weekly maintenance.

1. Apply graphite grease on the conveyor
2. Check the conveyor chain tension. Adjust if required
3. Apply lubricant to other moving parts.

C) Monthly maintenance.

1. Inspect window curtains for damage.

16. ELECTRICAL SCHEMATIC



17. TROUBLE SHOOTING CHART

No.	Complaint	Reasons	Remedy
1	Machine does not work.	1.No AC supply. 2.MCB tripped. 3.No output from CT18V.	1.Restore AC supply. 2.Check the wiring for any short circuit. If satisfactory, reset the MCB or replace the MCB. 3.Check and replace if defective.
2	Conveyor is not moving.	1.Conveyor speed set to 0. 2.Conveyor motor stalling. 3.Defective conveyor motor. 4.Wear & tear of carbon brush. 5.Conveyor chain disengaged from the sprockets. 6. Conveyor chain breakage. 7.Defective conveyor driver sprocket. 8.Defective board for conveyor drive. 9. Blown out of FUSE in the board. 10.Defective IRF740/optocoupler in the board.	1.Increase the conveyor speed. 2.Reduce load on the conveyor. Install the machine with a slope towards the direction of the conveyor movements to increase the load carrying capacity of the conveyor. Use leveling screws to attain this. 3.Rectify/replace the conveyor motor. 4.Clean & reinsert it. 5.Engage the conveyor chain with the sprocket. 6.Replace both chain together to avoid the mismatching of chains. 7.Replace the conveyor driver sprockets. 8.Replace the board for conveyor drive. 9.Replace the FUSE. 10.Replace it.
3	Conveyor chain slips from the guides.	1.Lower conveyor tension. 2.Misalignment of sprockets and chain rails.	1.Increase the tension by adjusting the conveyor tension adjusters. 2.Align the sprockets and chain rails.
4	Air blower is not working	1.Fan switch is off. 2.Phase sequence RYB is not in sequence. 3.Defective blower motor/No supply at motor end.	1.Switch on the fan. 2.Interchange any of the two phases.(Check Phase sequence indicator LED's and Phase sequence OK indicator). 3.Check supply voltages at the motor end & replace if defective.
5.	Blower motor works , but the air turbulence fan does not rotate freely	1.Shaft fitting Allen screw loose.	(a) Check the fan shaft assembly. (b) Ensure free rotation of the shaft and a little axial play. (c) Refit the Fan Assembly Mounting Plate.

6.	Insufficient shrinking	1.Heater switch is off. 2.Low temperature setting. 3.Temperature is not building up.	1.Switch on the heater. 2.Increase the temperature setting. 3.Refer to complaint no. 7
7.	Temperature is not building up.	1.Loose connection of heaters. 2.Heater failure. 3.Low temperature setting. 4.Defective contactor for heaters/relay for heaters. 5.Defective PT100.	1.Make proper connections. 2.Replace the defective heater. 3.Increase temperature setting. 4.Replace the relay from the board/ replace the contactor. 5.Replace it.
8	Excessive Shrinking	1.High temperature setting. 2.Low conveyor speed. 3.Defective Temperature Sensor (PT100). 4.Defective Heater Contactor due to contact welding.	1.Reduce the temperature setting. 2.Increase the conveyor speed. 3.Replace the defective part. 4.Replace the contactor for heater.
9.	Shrinking is not uniform	1.Air turbulence fan is not working or rotating in wrong direction. 2.Heaters are not working.	1.Refer complaint troubleshooting Case 4. 2.Identify the defective heater and replace.
10.	Abnormal sound and vibration	1.Air turbulence fan loose. 2.Fan Motor Bearing failure. 3.Machine is not installed on a level surface.	1.Tighten the nut with which the Air Turbulence Fan is attached to the blower drive shaft. 2.Replace the defective bearing. 3.Level the machine using the leveling screws.
11.	Conveyor is moving at constant speed	1.Defective IRF740 in the conveyor drive board.	1.Replace it.
12.	Shows different Temperature values	1.Defective 18V CT. 2.EMI. 3.Open wires.	1.Replace 18V CT 2.Make proper FRC & other cable routing. 3.Check and make proper connections.
13.	Garbage values or Display black out when heaters are turned on.	1.EMI generated through contactor arcing.	1.Replace contactor connections for loose terminals. 2.Connect a 220ohm resistor and a 104/1kv capacitor in series across A1 and A2 of contactor. 3. Replace Contactor.

18. SERVICE LOG

[illegible]

[illegible]