

PPG 1622 MK-COMBO "L" SEALER & SHRINK TUNNEL



SERVICE MANUAL

IMPORTANT-PLEASE READ THIS CAREFULLY

The development of a good safety program, that is rigidly enforced, is absolutely imperative when involved in the operation of industrial equipment. Our machinery is well designed and includes extremely important safety features. The part you play through proper installation and maintenance procedures is of far greater significance than our designs. Only properly trained individuals following rigidly enforced safety rules, should be allowed to operate these machines.

TABLE OF CONTENTS

Preface
Unpacking
Warranty
Warnings
Sealer Section
Description and Specifications
Installing and Basic Set-up
Film Threading
Sequence of Operation
Operation
Troubleshooting Chart
Service Adjustments
Maintenance Period
Electrical Panel Diagram
Electrical Schematic
Replacement Parts List
Tunnel Section
Description and Specifications
Installation and Basic Set-Up
Operating Panel Diagram
Sequence of Operation
Temperature Control Adjustment
Inverter Adjustment
Troubleshooting
Troubleshooting-Conveyor Malfunction
Troubleshooting-No Air Flow
Troubleshooting-No Head
Maintenance
Maintenance-Replace Conveyor Rollers
Maintenance-Replace Idler Shaft
Maintenance-Replace Drive Shaft
Maintenance-Replace Conveyor Motor
Maintenance-Replace Heater Bank
Maintenance-Replace Temperature Controller
Maintenance-Replace Inverter
Maintenance-Replace Blower Motor
Maintenance Period
Electrical Schematic
Operating Panel Diagram
Electrical Panel Diagram
Replacement Parts List

UNPACKING

If goods are received short or in a damaged condition, it is important that you notify the carrier's driver **before he leaves your company** and insist on a notation of the loss or damage across the face of the freight bill. Unless this is done, no claim can be enforced against the trans portion.

If concealed loss or damage is discovered, notify the carrier at once and insist on an inspection. This absolutely necessary! A concealed damage report must be made no later ten (10) days from the date the shipment was delivered. Unless you do this, the carrier will not consider any claim for loss or damage. The carrier's agent will then make an inspection and grant a concealed damage notation. If you give the transportation company a clear receipt for the goods the have been damaged or lost in transit, you do so at your own risk and expense.

All claims must be filed within six (6) months of delivery date or carrier will not accept them.

We are willing to assist in every possible manner to collect claims for loss or damage; however, this does not make Alpha-Pack responsible for collection on claims or replacement of material.

WARRANTY

OPERATING AND MAINTENANCE MANUAL

The operating and maintenance manual has been carefully prepared to provide the user with all the information needed to properly install, operate, and maintain your Alpha-PACK equipment.

Please read this manual carefully and refer to it for information on the care and use of your Alpha-Pack equipment. It is recommended that additional copies be ordered for use by production, maintenance, and supervisory personnel. Although care design of this sealer incorporates safeguards to protect personnel, care should be used in operating, adjusting, and servicing.

Attention is directed to the warranty which accompanies all your equipment. The terms and conditions of this warranty apply only to unmodified units. Any unauthorized modifications to the equipment voids automatically this warranty.

We warrant each new product manufactured to be free from defects in material and workmanship for a period of one (1) year from date of shipment by us.

This warranty is not transferable with any subsequent resale.

Defective parts under warranty must be returned to us freight prepaid. our sole obligation and purchaser's sole remedy in the event of a warranty dispute shall be, at our option, to repair or replace the part in question Labor incurred in removing or installing the defective part is not covered by this warranty. Prior to returning any parts for any reason, contact us for a Return Authorization Number. This number must accompany all returns.

This warranty shall not apply if equipment has been tampered with, misused, improperly installed, altered, or has received damage due to abuse, carelessness, accident or failure to follow recommended regular maintenance procedures or has been serviced by someone other than a duly authorized factory representative without the express written consent of us.

This warranty is in lien of all other warranties, expressed or implied, including but not limited to warranties of merchantability and fitness for a particular purpose, non-infringement or any other matter.

We shall have no liability to any person for direct, indirect, incidental or consequential damages or delay resulting from any defect negligence, or tort and customer hereby waives for itself any and all claims for punitive damages and all claims of negligence of strict liability or both. In no event shall our liability exceed the purchase price of the product which was actually paid.

We reserves the right to make changes, additions, or improvements to our products with no obligation to make such changes in any previously shipped product covered by this warranty.

We shall not be held liable for any damages arising out of or in connection with the operation of the equipment should customer or its agent fail to maintain equipment in safe operating condition. This warranty shall become unenforceable if and to the extent the customer or its agents remove, disconnect, or otherwise render useless any safety device and or parts designed or affixed by us or fails to maintain and service equipment in a manner as advised.

WARNINGS

Every effort has been taken to ensure your safety while operating this machine; however, there still remain certain risks. Do not allow this machine to be operated before informing all personnel of the following warnings.

WARNING.....

Do not tamper with the electrical wiring. Only use a licensed electrician for maintenance. Always disconnect the electrical power before attempting any maintenance to all electrical and/or moving parts.

WARNING.....

In order to prevent injury to personnel and/or machinery DO NOT INCREASE SETTINGS OR RATINGS ON EITHER ELECTRICAL OR MECHANICAL OVERLOAD SAFETY DEVICES.

WARNING.....

KEEP HANDS AWAY FROM MOVING CONVEYORS AND ASSEMBLIES. Conveyor belts that have become worn or frayed are capable of being hazardous. They should be replaced promptly.

WARNING.....

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 in running nip points, many of which are capable of causing severe injury and/or permanent disfigurement.

WARNING.....

To minimize the potential for personnel injury, always be sure that machine operators and others working on the machinery are properly trained in the correct usage of the equipment and properly instructed regarding the safety procedures for operation.

WARNING.....

Heat sealing arms and jaws on packaging machinery can become very hot after a period of use. KEEP HANDS AWAY WHILE IN OPERATION AND USE CAUTION IF THE MACHINE HAS BEEN RUNNING RECENTLY.

WARNING.....

ANY MODIFICATIONS TO EITHER THE ELECTRICAL CIRCUITRY OR THE MECHANICAL ASSEMBLIES OF THE MACHINERY WILL VOID ANY WARRANTIES ASSOCIATED WITH THIS EQUIPMENT. Such modifications may introduce hazards that would not otherwise be associated with this machinery. We will not be responsible for any consequences resulting from such unauthorized modifications.

WARNING.....

The use of certain types of plastic films in sealing and/or shrinking equipment may result in the release of HAZARDOUS FUMES due to the degradation of the film at 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 MUST BE PROVIDED AT ALL TIMES.

Do not attempt to install, adjust, or operate this machine without first reading the contents of this manual. Although the design of the equipment incorporates safeguards to protect operating and maintenance personnel, care should be used in operating, adjusting, and servicing.

SEALER SECTION

DESCRIPTION AND SPECIFICATIONS OF SEALER

DESCRIPTION:

The purpose of sealer is for low volume packaging requiring excellent seals and minimal maintenance. It features impulse and polyethylene modes for sealing bags. This model incorporates an pneumatic hold-down system, allowing the operator to load another package while the preceding package is being sealed. This system provides consistent seals. In addition, a package take-away conveyer or increases production speed by automatically discharging product into the tunnel.

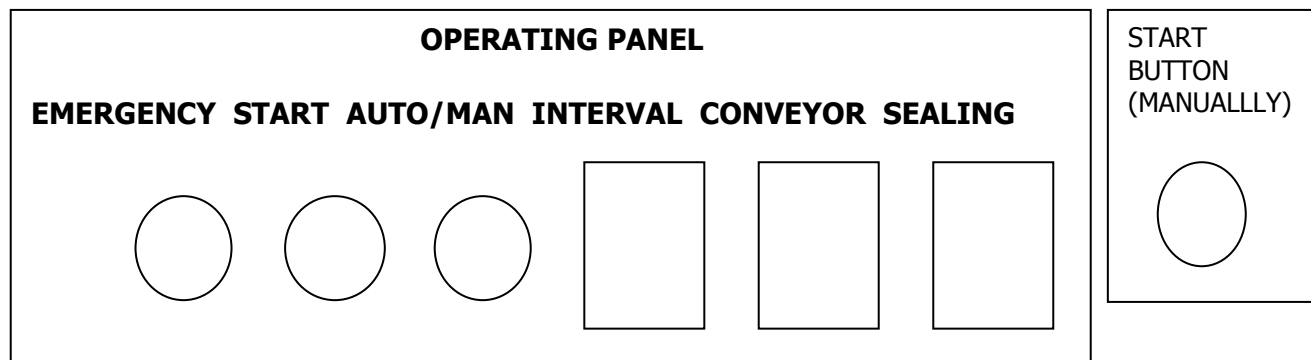
SPECIFICATIONS:

Sealing Area:	Width-16" Length-22"
Pressure air:	80 CFM @ 80 psi

FILM THREADING DLAGRAM



SEQUENCE OF OPERATION



1. Emergency—emergency stop button
2. Start—to start the machine
3. AUTO/MAN-selection of the machine work mode, AUTO-automatic mode, MAN-manual mode
4. INTERVAL-in automatic mode, the interval time between 2 times operation
5. CONVEYOR-the conveyor running delay time after finishing sealing
6. SEALER-the sealing time
7. MANUAL BUTTON-in manual mode, starting the sealer

The sequence of operating

- A. Connecting the single phase power-220VAC50HZ with earth wire, connecting the pressure air (6-7bar);
- B. Product is placed on the film separator tray.
- C. The product tray functions as a means to separate the film, allowing placement of product between upper and lower portions of the film.
- D. Move product into seal head area by pushing the product to the left.
- E. In manual mode, press the manual button, the cylinder will pull the seal head down. As the seal head meets the lower seal pad, the machine automatically activates the seal wires. The sealing timer is adjustable from zero (0) to three (3) seconds.
- F. Take-away Conveyor Unit-Once the seal is completed, the seal head automatically releases and the take-away conveyor begins to run. It is adjustable from zero (0) to three (6) seconds.
- G. In automatic mode, the machine will work automatically according to the interval time setup by interval timer.

NOTE: If too much tension is on the film while the bag is being made, the seals will, more than likely, be weak or will "blowout" in the seal area while passing through the shrink tunnel. Make sure to relax the film tension prior to sealing.

MOUNTING FILM

Select the proper width of center-fold film for the item being packaged, allowing for width and height of package. With the package properly positioned within the film in the sealing area, allow sufficient film to overlap the sealing bars so that a seal may readily be made without any possibility of open areas due to insufficient film.

Place film roll on cradle mount film rack. See page 13 for a detailed drawing. The center-fold is to be placed away from the operator, toward the rear of the machine. Position film roll on rack and tighten film guide nuts to hold film roll in position.

Decide whether the film is A-wind or B-wind and thread it accordingly through the pin perforator. Note that the perforator wheel turns freely and is not binding. See diagram on page 13. Once threaded, separate film top from bottom and insert product tray between. Make sure that the center-fold of film is placed at the rear of the product tray. This allows the operator to insert product between the layers of film on the product

tray and to prepare to move product and film into the sealing area. When threading film, make sure to pull more than sufficient film through the rollers, across the product tray, and into the sealing area to ensure sufficient film to begin operation.

Place product against rear of film separator tray. Then move product into seal area. Be sure to leave the bag loose around the product when making the seal. This helps eliminate the seals from blowing out in the shrink tunnel. This completes threading and/or mounting film.

PIN PERFORATOR

Located between the lower idler rollers, the pin perforator is completely synchronized with the seal arm and creates holes for air escape during shrinking each time a new seal is made.

The pin perforator is adjustable and must be properly placed in conjunction with the width of the desired package. The positioning should always be re-evaluated when setting the machine for different size product or different size film. Adjustments may be made with the adjustment knob attached to the bottom of the film rack.

FILM BRAKE

The film brake is located on the operator side of the film cradle. It serves to create tension on the dispensing film, in order to prevent over-run and/or slack. From time to time, the operator should evaluate its setting to ensure proper tension.

PRODUCT TRAY

The product tray is an adjustable metal platform used to separate film and to insert product between top and bottom layers of film.

The tray is adjustable to achieve proper depth, equal to the depth of the package; thereby, allowing product to be placed exactly in the center fold of the film each time.

OPERATION OF SEALER

After completion of film threading, plug the sealer's cord into the power source.

Because of the importance of the adjustment of the element compensator to the successful operation of the sealer, the following explanation of its operation is given.

PRODUCTION OPERATION OF THE SEALER

After setting the element compensator for the film type in use, proceed as follows:

- A. With film threaded, (See instructions for mounting film) using right hand, slide product into the upper left hand corner of the film (i.e. corner formed by folded rear edge of film and previously sealed left edge of film).
- B. Still using left hand, move package and film into lower right corner of sealing area and then slightly back and away from the corner formed by the sealing bars. This will allow some slack film between the package and the sealing bars.
- C. During the manual mode, press the manual button, the cylinder will press the sealing handle down. The sealing head will remain down for the duration of the time set on the seal timer. During the automatic mode, the cylinder will press the sealing handle down according to the internal time setup by the internal timer.
- D. The operator may then load the next package onto the product tray, thus speeding up the sealing operation.

TROUBLE SHOOTING CHART

The following trouble shooting chart is provided to aid in determining the source of any operation difficulties which may develop. In performing the tests and checks which follow, carefully inspect for any loose components, broken or loose wires, poor electrical connections, etc. While testing the various switches, controls, relays, transformers, etc. For checking electrical problems, use a voltage meter.

Note: While trouble shooting use caution to avoid danger of electrical shock. When power is not required for checking for the presence or value of voltages used. Always have it disconnected.

Refer to components placement sheet and electrical schematic diagrams to assist in all trouble shooting efforts.

Problem

Procedure

<p>NO ELEMENT HEAT</p>	<ol style="list-style-type: none"> 1. Check that the sealer is plugged in and that power is present at the socket. 2. Check element pulse switch adjustment. Also, press switch by hand-if no click is heard, replace it. 3. Check Breaker BS3. 4. Check to see if KM1 is pulling in and voltage is present at coil. 5. Check circuit continuity through normally closed switch contact of timer KT2. KT2 needs to be set above zero (0) on time dial. 6. Check for operation of contactor KM3&4. 7. Check circuit continuity through operated contact of contactor KM3&KM4. If required, clean or replace contact points. 8. Check element compensator setting. You should always have a gap of at least 1/8" to 1/4" between the compensator and the adjustment screw. If the compensator screw is touching the compensator the seal wire will not heat up. 9. Check for voltage present at both secondaries of transformer TF as per values shown in the voltage specifications. 10. Check for continuity from TF through wiring the sealing elements. 11. Check for continuity through sealing elements and replace if open circuit. 12. Check main power switch to determine if damaged or broken.
<p>THE SEAL HEAD DOES NOT GO DOWN</p>	<ol style="list-style-type: none"> 1. The sealing timer must set above 0 2. The magnet valve or cylinder is not good 3. Check the pressure air is available.
<p>SHORT ELEMENT LINE</p>	<ol style="list-style-type: none"> 1. Check element compensator setting. (See element compensator) 2. Improper element installation. 3. Weak spring at element termination (left end of front element, rear end of side element). If questionable, replace. 4. Be certain that heat sink has firm flat contact with element. If deformed, replace or straighten heat sink.
<p>WEAK SEALS AND/OR POOR FILM CUT-OFF</p>	<ol style="list-style-type: none"> 1. Improper setting of element compensator. 2. Improper operating technique. Too much film tension, make sure film is relaxed prior to sealing. 3. Check sealing element wire to see if cleaning or replacement is necessary. 4. Burned Teflon tapes 1/2" or 3/4" replace. 5. Wavy silicone rubber sealing pad Replace. (See instructions on page 22) 6. Seal pad pressure incorrect. (See pages 22 and 23) 7. Hold-down pressure uneven or incorrect on magnets.
<p>CONVEYOR DO NOT RUN</p>	<ol style="list-style-type: none"> 1. Check Breaker BS2. 2. Check conveyor timer KT1, make sure timer is not set on zero. 3. Check conveyor belt and make sure it is not too tight. 4. Check that conveyor motor sprocket set screws are not loose on shaft. 5. Check that conveyor chain is not jammed or broken. 6. Make sure wire number R, S & T are connected to the conveyor motor. 7. Make sure wire number S & T are connected to capacitor C. 8. Make sure the Pulse Switch can work properly.
<p>EXCESSIVE FILM DRAG</p>	<ol style="list-style-type: none"> 1. Check for proper film threading. (See diagram on page 13). 2. Loosen film roll brake. (See diagram.)
<p>EXCESSIVE FILM WINDING OR "SPILL"</p>	<ol style="list-style-type: none"> 1. Tighten film roll brake.

SERVICE ADJUSTMENTS

ELEMENT COMPENSATOR ADJUSTMENT

Adjustment of the element compensator may be required under the following conditions:

1. During continuous use. After about 15 minutes of sealer operation, check seal quality and, if required, reset compensator. This may be necessary as a result of heat buildup in the sealing head.
2. After installing new sealing elements.
3. If charring of film is noted (too much heat).
4. If sealing is incomplete (not enough heat).

To adjust the element compensator, refer to the adjustment instructions given below:

Adjust the element compensator (located at the end of the front seal bar) by loosening the wing nut and turning the knurled-head screw until a 1/4" air gap exists. With folded film (i.e. two layers of film) in the sealing position, bring down the sealing head. Set the seal timer from 1 to 3 setting then examine the seal. Experimentally, in small increments, increase the element compensator air gap setting until a setting is obtained which yields a satisfactory seal and film cut off. It is important to remember that the smallest air gap at which a satisfactory seal and film cut off is obtained is the correct setting. If using PVC film we recommend to use a 2" x 3mill Teflon cloth or tape over the sealing wires for a clean cut off and reduced smoking.

On the element compensator, loosen the wing nut and turn the knurled-head screw until a 1/4" air gap exists. Tighten the wing nut. With folded film (i.e.) two layers of film) in the sealing position, bring down the sealing head. Set the seal timer to position 1 or 2 on the timer dial setting.

Ordinarily, it will not be possible to obtain a satisfactory seal with the 1/4" gap setting. Experimentally, in small increments, increase the element compensator air gap setting until a setting is obtained which yields a satisfactory seal and film cut off.

*Please note: Any time you are using polyethylene films we recommend a 2" x 3mill Teflon cloth or tape to be placed over the seal wire for a better seal and performance.

SEALING ELEMENT REPLACEMENT

The sealing elements are subject to constant wear and will eventually require replacement. To replace sealing elements proceed as described below.

REPLACING FRONT ELEMENT

1. Remove heat sink by removing the two screws on front and backside of compensator. Note: Always check for excessive wear and replace heat sink if necessary. (Heat sink part # 1521-08)
2. Loosen the two set screws on the side and front bars. (This holds the opposite end of the front seal wire in place.) Loosen the two set screws on the compensator. Remove old wire. When the wire was originally installed it extended out of the top of the bar 2" and had a loop or book on it to prevent injury to hands. It may be necessary to cut the loop off to remove seal wire.
3. Cut off a piece of new seal wire 5" or 6" longer than necessary. Using long-nosed pliers, measure 3" from one end and form a 90 degree bend. Push the wire through the corner bead and tighten set screws. Note: For safety, please take your pliers and bend a loop in the wire that is extending out of the top of the bar.
4. Insert wire through compensator hole. With long-nosed pliers, grab wire on back-side of compensator, turn long-nosed pliers toward seal bar until there is approximately 1/8" gap between compensator and seal bar. Tighten down Allen-Head screw. Cut excess wire off.
5. Remount heat sink making sure it fits snug against the wire. If it is not snug, the wire will become too hot in this area and break.
6. Make sure the wire lies properly in the bead groove the entire length of the bar. If not, pulse the machine, With the head in the up position. Do this several times to stretch the wire then reset wire temperature for making bags.

IMPORTANT: After replacing sealing wire, be sure to adjust the setting of the element compensator.

TAPE REPLACEMENT

The item most subject to wear on the sealer is the Teflon tape used to cover the silicone sponge rubber on the sealing bar. This tape should never be permitted to burn through. To replace tape, proceed as follows:

1. Strip off old tape.
2. Cut off proper length of new Teflon, peel off backing, and press new tape into position.

SILICONE RUBBER SEALING PAD REPLACEMENT

Occasionally it will be necessary to replace the silicone rubber sealing pads.

This should be done if the following effect are noted:

- Gaps in the seal
- Weak seals
- Improper film cut-off
- Excessive sealing pressure required

To replace rubber, proceed as follows:

1. Seal pads are designed with a channel for easy replacement. Pull silicone rubber out of the channel.
2. Replace with new silicone rubber. Press rubber back into channel.
3. Put 3/4" – 10 mil Teflon tape on top of rubber.
4. Put 1/2"- 10 mil Teflon tape over the 3/4" tape.

SEALING PAD PRESSURE ADJUSTMENT FOR HEAD RETURN CYLINDER

Uniform pressure between the sealing elements and the sealing pads must always be maintained for proper sealing uniformity, and to prevent element hot-spots and premature burnout. This adjustment should be checked periodically, and should always be checked when sealing gaps occur. Proceed as follows:

1. Disconnect the sealer's power plug from the power source. Loosen all five bolts on lower pads just enough to maintain a moderate sliding pressure.
2. With sealing head resting on lower pads, make sure there are no air gaps, then tighten the five bolts on the lower pad.
3. Adjust magnets (see below for adjustment of magnets)
4. At the rear of the machine (making sure head cylinder is straight from front to back), firmly grasp air cylinder bracket and pull full length of cylinder and tighten down set screws.
5. Cycling head up and down, adjust set screw for proper head speed and cushion.

ELEMENT PULSE SWITCH ADJUSTMENT

The sealing cycle should not begin until the sealing head is within 1/4" or less of the film to be sealed. If the magnets energize before the head is within 1/4" of the film, loosen the lock-nut and turn the screw (located at the rear end of the side seal bar) up slightly (counterclockwise when viewed from above). The correct adjustment has been obtained when the magnets energize just as the seal bar comes into contact with lower pads.

CONVEYOR

From time to time it will be necessary to disassemble the conveyer as it will need adjustments or replacement of worn parts and general maintenance. The following information is given to assist the operator in that general fashion. If the problem does not rectify itself with these general explanation, discuss it with an authorized distributor of Alpha-Pack or with Alpha-pack directly.

REPLACING CONVEYOR MOTOR

1. Disconnect power plug from source of power.
2. Disconnect the three power wires from the rear of the motor.
3. Loosen the four bolts that hold the motor mount bracket to the conveyor and slide motor mount forward.
4. Loosen set screw on sprocket that is attached to the motor and remove sprocket.

5. Remove four bolts. These bolts hold the motor in place. Hold motor while removing these bolts so the motor does not drop.
6. Follow steps 2-5 in the opposite order to reinstall new motor against the conveyor frame and tighten set screws.

FRONT AND SIDE SEAL BAR

A. Beads in Front Bar

1. Install standard V-Bead.
2. Be certain that the beads are flush with the end of the seal bar. If the end bead is extending out of the bar, use side-cutters to cut the bead down to size.

B. Beads in Side Bar

1. Install corner bead.
2. On either side of the corner bead, install a beveled bead. For the remaining length of the bar, follow steps A-1 and A-2.
3. Place a screw in the hole at the end of the bar to hold the beads in place.

C. Set screws – Hold seal wire

1. Place set screws in threaded holes of seal bars. Make sure set screw holds seal wire tightly in place.
2. Place knurled nut on screw. Make sure nut holds seal wire tightly in place. (For front and side wire)

D. Compensator and springs in side bar

1. Use one 23/8" spring lightly greased and place in hole first.
2. Install compensator with 2" shaft lightly greased. Slide compensator into side seal bar. While holding, compensator guide screw can be installed.
3. Insert insulated guide screw.

PLACING FRONT AND SIDE SEAL BARS

1. Turn power switch to "OFF".
2. Remove wire L63 from side bar compensator.
3. Remove wire L64 from front bar compensator.
4. Remove wire L62 from temperature control bracket.
5. Remove temperature control bracket.
Note: Bracket is held in place with two screws. Also, do not lose the insulators.
6. Compress front bar compensator all the way in using your thumb and hold.
7. Remove compensator guide screw.

Warning: Remove compensator slowly, applying tension, as compensator is spring loaded.

8. Remove bolt holding front seal bar to the outfeed bar.
9. Remove bolts holding side seal bars to casting.
10. Remove seal head from entrance casting and outfeed bar.
11. Remove the side bar compensator following steps 6, & 7.
12. Remove upper magnet holder on side bar.
13. Remove handle.

INSTALLATION OF SEAL BAR COMPENSATORS AND TEMPERATURE CONTROL BRACKET

1. Lightly grease two compensator springs and put on each seal bar.
2. Insert compensator and compress in all the way.
3. Install compensator guide screw assemblies.
4. On the front bar, install the temperature adjustment bracket.

Important: The temperature adjusting bracket must be insulated from the casting to work properly.

5. Install new seal wire and reset temperature adjustment screw assembly.
6. Reconnect wires to seal head assembly.
7. Install upper magnet holder on side bar.
8. Installing handle and tighten set screws on each end.
9. Double check all work done before starting the machine.

MAINTENANCE PERIOD

PER DAY

1. Cleaning the machine with soft cloth, check if the silicone rubber sealing pad and the pin perforator and the electric units are good, if not good, please change it.
2. Check if the conveyor belt is broken, if it's broken, please change it.
1. Check and adjust the element compensator of the film.

PER WEEK

- 1 Put the lubricating oil on the chain.

PER MONTH

1. Check if the chain wheel bearing is not good, if not good, please change it.
2. Check if the wires connection is good, if it's not good, please fix it.
3. Check if the insulation of the electric circuitry and the motors are good, if not, please repair it.
4. Check if the sealing knife base is good, if it's not good, please change it.

PER YEAR

1. Check if the motor bearing is good, if not, please repair it.

ELECTRICAL PARTS LIST(COMBO-SEALER)

NO.	NAME	TYPE	QTY	Manufacturer	Certificate
1	POWER SWITCH	POWER SWITCH	1	ZHONG XUN	VDE
2	BRAEKER	DZ47-C15□1P□15A	1	CHNT	CE
3	BREAKER	DZ47-D1□1P□1A	1	CHNT	CE
4	BREAKER	DZ47-D1□1P□5A	1	CHNT	CE
5	TRANSFORMER	220V/50V,30V,24V 800VA	1	SHENZHEN	-
6	MOTOR	4IK25GN-C,25W,220VAC,0.3A, RATE:10:1	1	Orient	CE
7	CAPACITOR	400VAC□1.5UF	1	Orient	CE
8	Heating Element	0.35*5mm	1	Alpha-pack	-
9	CONTACTOR	CJX2-0910□AC220V□9A□1NO	3	CHITN	CE
10	CONTACTOR	CJX2-0901□AC220V□9A□1NC	1	CHITN	CE
11	RELAY	MY2J□24VAC	1	OMRON	CE
12	RELAY	MY2J□220VAC	1	OMRON	CE
13	TIMER	AH3-NA□3s□220VAC□ON-DELAY	1	ANLY	CE
14	TIMER	AH3-NA□10s□220VAC□ON-DELAY	1	ANLY	CE
15	TIMER	AH3-NA□3s□220VAC,OFF-DELAY	1	ANLY	CE
16	PULSE SWITCH	D4MC-5000	1	OMRON	CE
17	Micro Switch	V-156-1C25	3		
18	Switch	NP2-BD25+BE101+BE102	1	CHNT	CE
19	EMG. SWITCH	LA39-01Z/r	1	APT	CCC CE
20	Magnet Valve	SV-8103, 220V	1	CHELIC	CE
21	Cylinder	DU63*175CB	1	CHELIC	CE

TUNNEL SECTION

DESCRIPTION AND SPECIFICATIONS

DESCRIPTION

The Tunnel is a conveyORIZED heat shrinking device employing electric heating combined with a recalculating air system, and a complete range of adjustments. The main components are the blower, the heater bank, the shrink chamber, and the package conveyor. Conveyor. Cover the entrance and exit of the heat chamber to minimize heat loss as packages travel through the tunnel. This is a live roller tunnel. High-density kits are available on request, to provide 1/2" spacing between rollers to accommodate small packages and special applications.

A simple yet reliable and extremely durable shrink tunnel. The strength and durability of this model are it's greatest features. Straightforward, easy manual operation is employed. Operator training should, at the ultimate extreme, be less than one work shift.

SPECIFICATIONS

Chamber Size: Width: 18" Height: 08" Length: 44"

Alpha-Pack—Front Panel Diagram



- 1.Power Lamp—Yellow
2. Start Lamp—Green
- 3.Run Switch
- 4.Heater Switch

- 5.Digital Temperature Controller
- 6.Inverter (Speed Adj.)
- 7.Air Velocity Control—Black Knob
- 8.Main Breaker Switch

SEQUENCE OF OPERATION



The Front Panel Diagram

- A. Adjust the height of the conveyor, let it be the same level to the conveyor of the sealer.
- B. Turn the tunnel on by turning the main breaker switch (8) to the ON position.
- C. Turn the RUN switch (3) to the on position to start the machine. (Temperature will be displayed on the temperature controller and the power lamp of the inverter will be on, this will also start the cooling fan motor and the blower motor and the conveyor motor).
- D. Turn the HEATER switch (4) to the on position, this will start the heater.
- E. Set the Temperature Controller (5) at the temperature you believe will shrink your product. This temperature may need to be adjusted higher or lower until you have achieved the shrink you are happy with for that product. As long as you are running the same product, this temperature should not have to be adjusted again. Factory setting is 200°, if you want to change the setting, please refer the manual.
- F. Set the INVERTER (6) to about mid-range until the exact desired conveyor speed is determined later (based on packing size and the sealer speed). Factory setting is 50Hz, if you want to change the setting, please refer the manual.
- G. Turn Air Velocity Control Knob (7) to high. Most tunnel applications will use high air velocity. You may lower the Air Velocity for (a) light weight package that may lift or float from excess air pressure or (b) should you want to decrease the shrink force of the film. Factory setting is high.
- H. CAUTION: When turning off the tunnel, be sure to turn off the Heater Switch (4) first, then turn the RUN-switch (3) to off, the machine will stop automatically when the temperature below 70°, then you can turn off the main breaker,.

Temperature Control Adjustment



PV=Present Value

SV=Set Value

On the above temperature controller the set value is 200□, and its present temperature is at 200□.

To Adjust Temperature with Up or Down arrow key:

You press SET key, then the SV value will flash, press ▲ or ▼ arrow key, can change the SV value. Then press the SET again.

Inverter Adjustment



After power the inverter on, its power indicating LED will be light, switch its Start-Stop Switch to the RUN position, rotate its Output frequency Set-up volume Knob to be at a proper position.

TROUBLESHOOTING

The following troubleshooting section is provided to aid in determining the source of any operation difficulties which may develop. In performing tests and checks which follow, carefully inspect for any loose wires, poor electrical connections, etc., while testing the various switches, inverter, contactors, transformers, etc.. For checking electrical problems, use a voltage meter.

Note: while troubleshooting, use caution to avoid danger of electrical shock. When power is not required for the presence of value of voltages used, always have it disconnected.

Refer to electrical components placement sheet and electrical schematic diagrams to assist in all troubleshooting efforts.

DISCONNECT ALL POWER BEFORE MAKING ANY REPAIRS.

REFER TO ELECTRIC BOARD LAYOUT AND ELECTRICAL SCHEMATIC FOR LOCATING OF ELECTRICAL COMPONENTS.

TROUBLE SHOOTING

Conveyor malfunction

1. Check the main breaker (MS) on the front panel.
2. Remove the top cover and open the main controlling panel and the operating panel. Check the breaker (BS1) and the controlling breaker (BS2), make sure BS1 and BS2 is proper.
3. Check the RUN switch (CS1). Check the contactor KM2. Check the normal close contactor of the overload relay OL. Make sure they are not burned or damaged.
4. Check the inverter (please refer its operation manual), check its power indicating LED, it should be light, check its Start-Stop Switch which should be at the RUN position. Check its Output frequency Set-up volume Knob which should be at proper position.

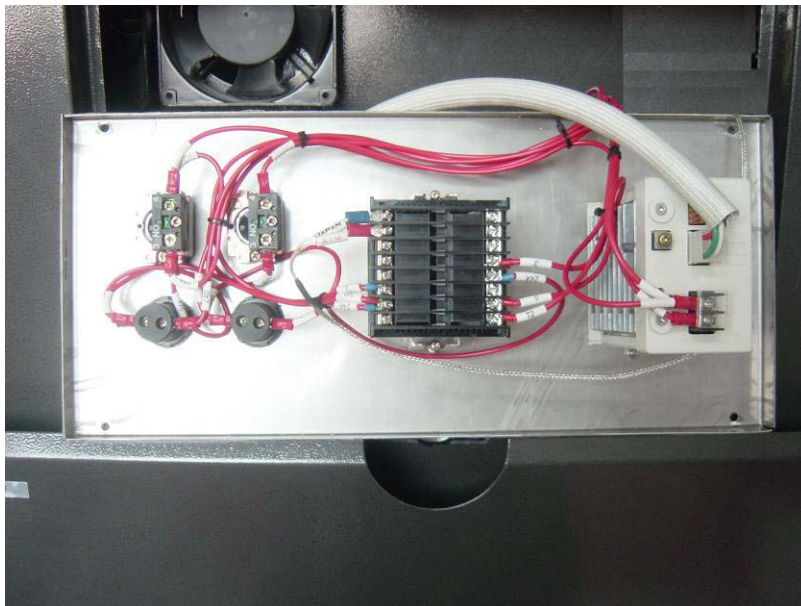


5. Remove end covers and look for obstructed product or lodged rollers.
 - (a) Check lubrication of conveyor chains
6. Make sure the connection wire on the motor and cable are not loose.
 - (a) Refer to the electrical schematic for proper wiring of the motor.
 - (b) Check wires U2 V2 and W2 for power, if power present and motor does not operate, replace motor.
7. Check to make sure the chain is not loose and the sprockets are not touching the frame.
 - (a) Replace the motor if all the above checks properly.

NO AIR FLOW



1. Make sure air velocity knob (7) is not on low.



2. Open the operating panel and the electrical controlling panel, check to make sure the RUN switch CS1 and the contactor KM1 and the overload relay are proper.
3. Check to make sure no air holes are obstructed due to plastic **build up covering air holes**.

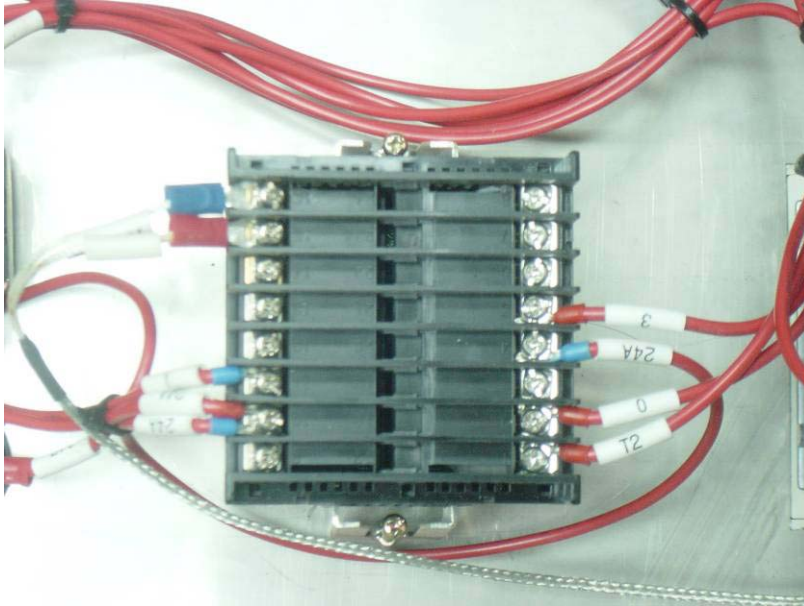


4. Check main blower motor and replace if necessary.
 - (a) Check motor wires U1 and V1 and W1 for loose connection.
 - (b) Check for 3*220VAC power across wires U1 and V1and W1 (motor wires), if voltage is present and the motor still does not operate, replace.



5. Check to make sure blower wheel is not loose on the blower shaft.

NO HEAT OR LOW HEAT



1. Check thermocouple wires at temperature controller (terminal +15 and -16). First disconnect, then check with meter for continuity across the two thermocouple wires.
 - (a) If no continuity is present across thermocouple wires, replace thermocouple.
 - (b) Check to make sure that the heater switch CS2 and the normal open contactor of KM1 are proper. Check terminals at 4 and 5 (wires 3 and 24A) for 24VAC power on the temperature controller when KM3 is not pulled in under set temperature, if the 24VAC power is present, the temperature controller is bad, replace it; Check for 24VAC power on the KM3 coil, if the 24VAC power is present in under set temperature, the KM3 is not pulled, replace the contactor KM3.
2. (a) Check for 3*220VAC on wires R1 and S1 and T1 on KM3 contactor when it's pulled in under set temperature. If voltage is present on the KM3, check the Heater Bank for broken lugs or wire inside the Heater Bank, if the leads and jumper wires on Heater Bank are not broken or burned, then replace the Heater Bank.



- (b) Check Heater Bank for replacement. Make sure no lugs on the Heater Bank have been broken.



3. Check the Heater Bank to make sure the wires are not loose or broken on the Heater Bank. Pull the Heater Bank and make sure the Heater Bank has continuity across wires. If not, replace it.

MAINTENANCE

To aid in maintaining the high reliability of this shrink tunnel, the following maintenance should be provided.

DISCONNECT ALL POWER BEFORE MAKING ANY REPAIRS. IF UNSURE OF ANYTHING, PLEASE CONTACT A QUALIFIED SERVICE TECHNICIAN

- A. The conveyor chains should be lubricated once a month with High temperature oil. The lubricant should be applied with a brush or sprayed while the conveyor is slowly running.
- B. The silicone covering on the tunnel rollers should be inspected regularly to assure that no scrap pieces of film are wrapped around the rollers to cause sticking of packages. To clean, run conveyor until the affected rollers are within the heated chamber, thus heating the film residue to soften the film, then advancing the conveyor to stop the rollers outside the heat chamber for cleaning. Make sure the conveyor is stopped before putting your hands or anything else in the conveyor area. If necessary to remove the film residue, use a dull, blunt-edged tool. Do not use any sharp instruments, as nicking the silicone may result in having to replace the roller covering.

To replace silicone covering on the roller proceed follows:

Replacement of Conveyor Rollers



A. Remove idler end caps.

B.

D. Loosen the two take up bolts for the chain adjustment giving yourself enough slack to pull chain upward and spread chain apart to remove roller. See picture on page 36.

Now you are ready to move the rollers.

E. Remove old roller covering by very carefully slitting the covering and pulling off.

F. Clean all rollers, using steel wool or a wire wheel. Make certain all rollers are smooth and free of residue or burrs.

G. Fit the new silicone rubber tubing onto each roller and work on by hand at least 1/2". At the opposite end of the tubing, attach and secure an air supply hose of low pressure, maximum pressure 5 lbs. While the tubing is slightly expanded by the air pressure, push the tubing onto the roller. Be very careful to hold the roller at all times so it does not escape due to the air pressure.

H. Replace rollers on conveyor by inserting roller end holes into the extended pins on the chain.

I. **Check conveyor chain tension as described.**

J. **The adjustment of package conveyor chain tension should be** checked occasionally to ensure that it is not excessive, as this would cause unnecessary wear of the sprockets. To check or adjust tension, shut off power to the tunnel. Remove idler end caps. Adjust conveyor to these specifications. On the idler end of the conveyor, bring a roller to the three o'clock position (the center of the end of the conveyor). From that point count seven roller in; the seventh roller should be evenly touching the conveyor roller bottom rails.

K. **Replacement of idler roller shaft, bearings, or sprockets.**

Remove idler end caps to gain access to idler shaft. Disconnect the conveyor chains by removing the master links. Remove two bolts from the idler block holder and shaft assembly should pull right out. Remove two tension bolts from idler block holder, then the shaft and sprockets will come right off. Replace and reassemble in the same manner as disassembled.

M. Drive shaft, bearings, or sprockets replacement.

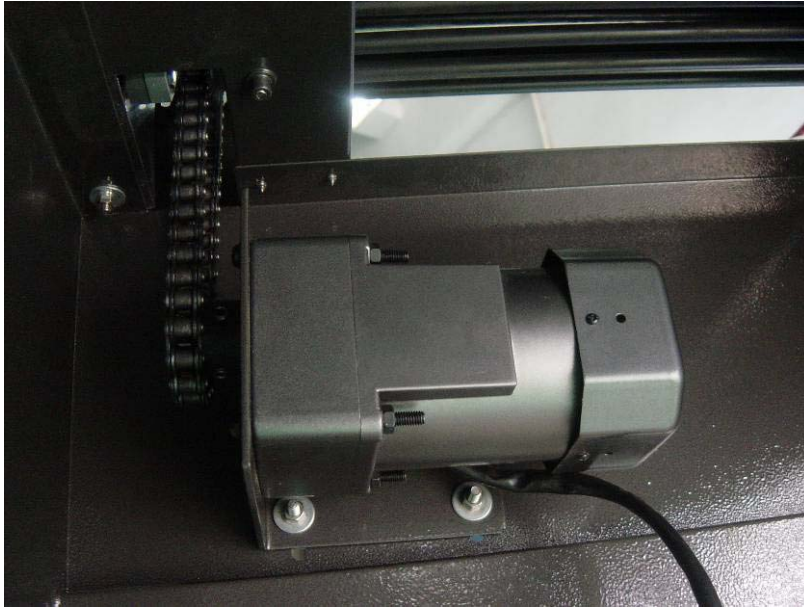
(1) Remove drive end caps instead of idler end caps.

(2) Disconnect the conveyor chain by removing the master links.

(3) Remove two bolts from the flange bearings and remove drive shaft assembly.

(4) The drive shaft has one sprocket pinned to it and must be reinstalled the same way. The other sprocket and bearings will slide right off the drive shaft. Replace and reassemble.

N. **Conveyor motor replacement.**



- (1) Disconnect power to machine.
- (2) Disconnect electrical wires from drive motor, and remove four bolts that hold the drive motor.
- (3) Remove sprocket from old motor and place on new drive motor, Reassemble in the same manner it was disassembled. For wire hook up refer to electrical schematic.

O. Heater Bank replacement

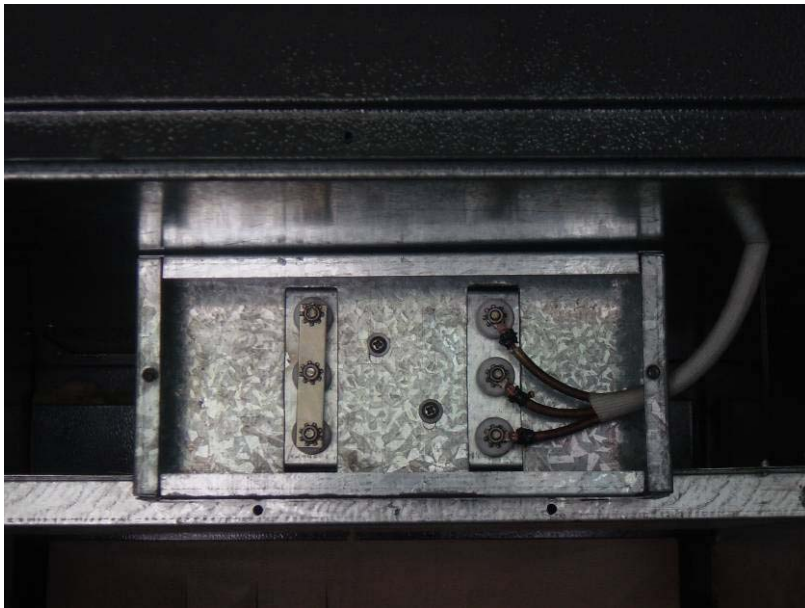
- (1) Shut off power to machine.



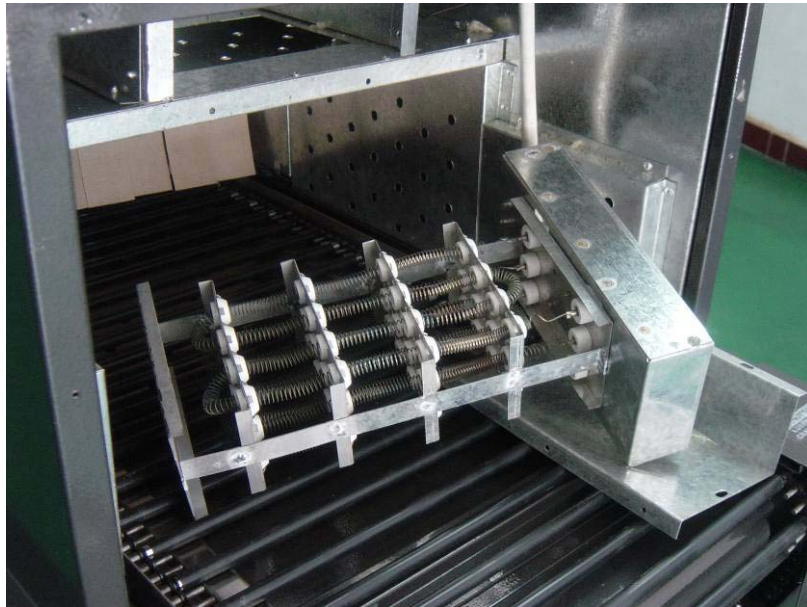
- (2) Remove left side safety shield and panel



(3) Remove access cover and pull insulation out



(4) With a nut driver, remove wires on the heater bank, set wires off to side. Remove heater bank terminal box from the heater bank.

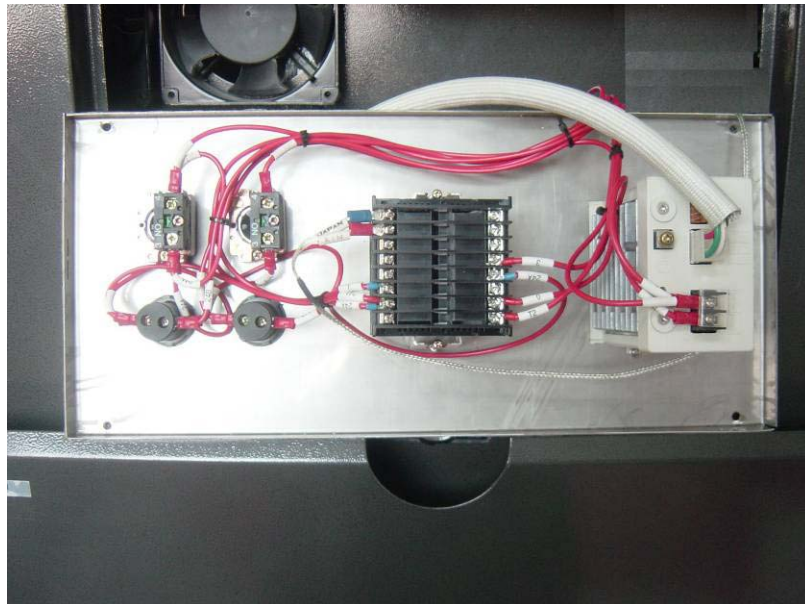


(5) Then remove heater bank

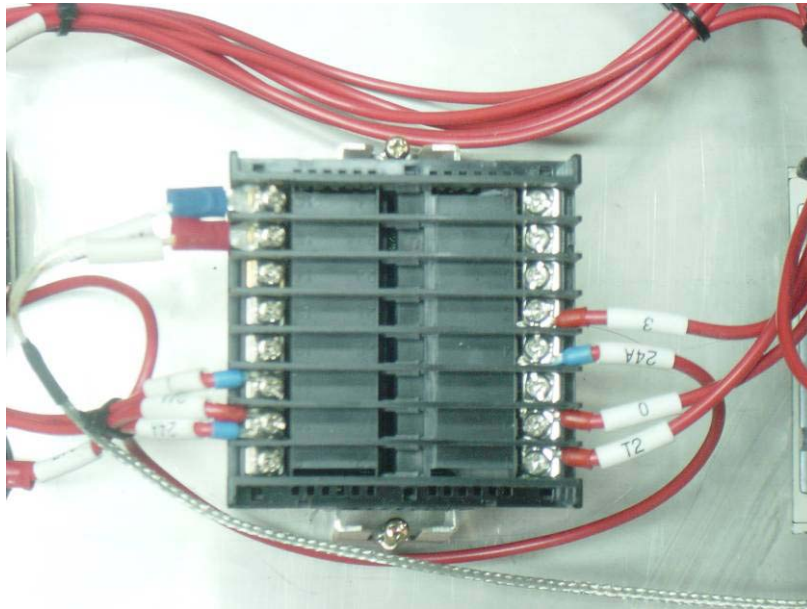
(6) Place the heater bank terminal box on the new heater bank. Reassemble in the same manner it was disassembled.

P. Temperature controller replacement

(1) Shut off power to machine.



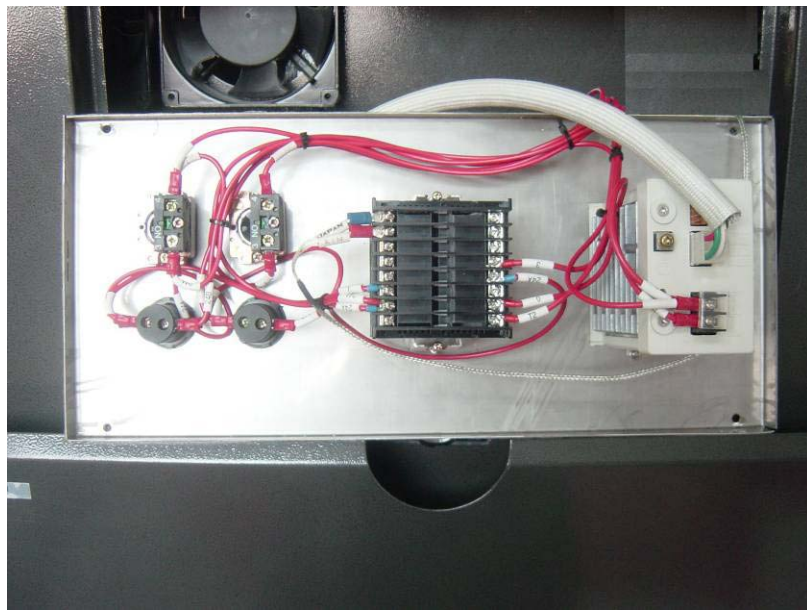
(2) Open the operating panel.



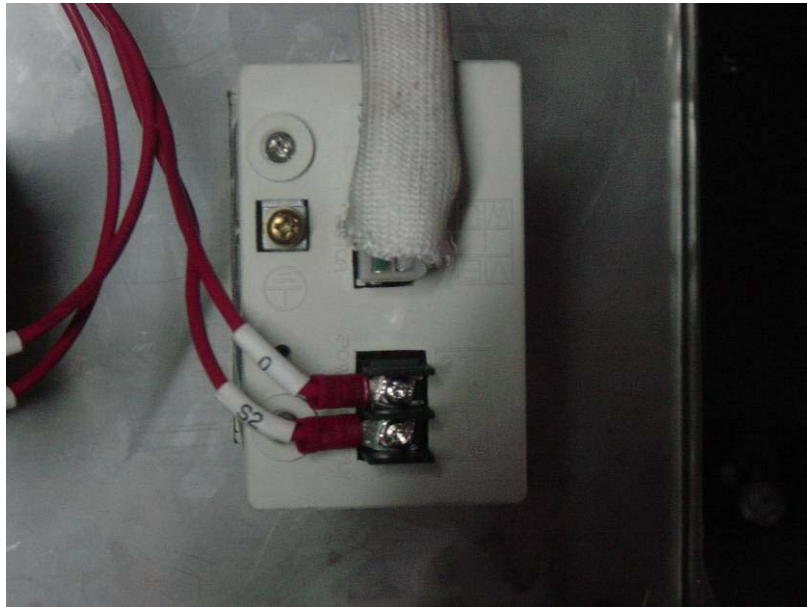
- (3) Disconnect four wires (two O, T2, 3 and 4) and thermocouple wires from temperature controller.
- (4) Loosen screws on side of controller itself and pull controller out off the operating panel. Replace with new controller and refer to the controller manual and set it.

Q. Inverter replacement

- (1) Shut off power to machine.



- (2) Open the operating panel.



- (3) Disconnect two wires (two O and S2) and pull the output plug out of the inverter.
- (4) Loosen and remove screws on front of inverter itself and pull the inverter out of the operating panel. Replace with new inverter and refer to the inverter manual and set it.

R. Blower motor replacement

- (1) Shut off power to machine.



- (2) Remove top cover and screws holding the blower chamber cover.
- (3) Disconnect wires on the blower motor.



- (4) Remove four bolts at motor base, and move the blower out of the tunnel chamber.



- (5) Once blower housing is on the bench, loosen the four bolts holding the blower wheel screen and remove screen, remove out screen covering of blower wheel housing.



(6) Remove bolt holding blower wheel to blower motor.



(7) Loosen and remove four bolts holding the motor to its base. Replace with new motor.
**Note: This housing should be tested outside the tunnel to assure that it works.
Reassemble in the same manner as disassembled.**

MAINTENANCE PERIOD

PER DAY

1. Cleaning the machine with soft cloth, check if the silica roll and the electric units are good, if not good, please change it.
2. Check if the portiere cloth is broken, if it's broken, please change it.

PER WEEK

1. Put the lubricating oil on the chain.

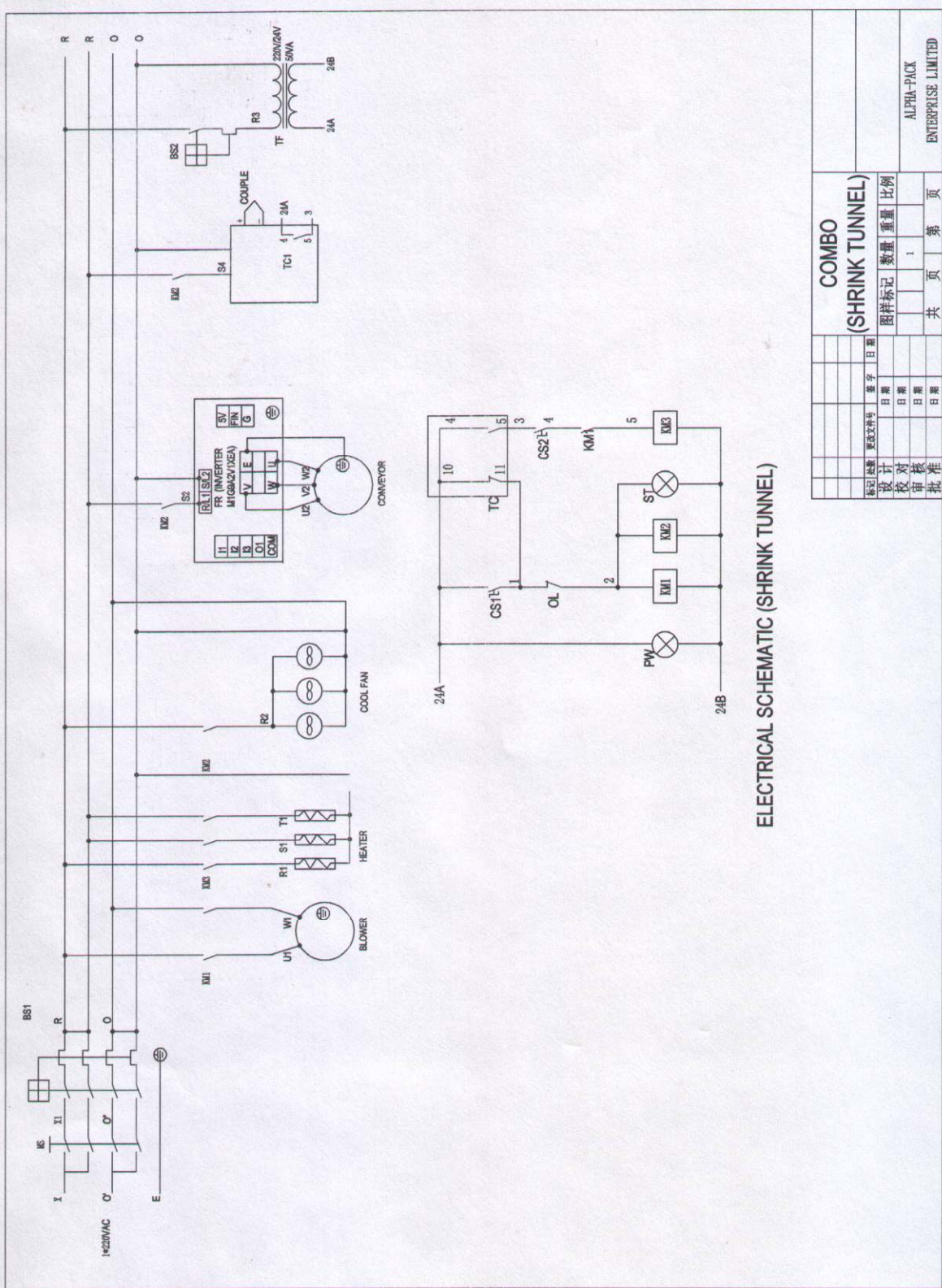
PER MONTH

1. Check if the chain wheel bearing is not good, if it's broken, please change it. Fix the blower wing.
2. Check if the wires connection is good, if it's not good, please fix it.
3. Check if the insulation of the electric circuitry and the motors are good, if not, please repair it.

PER YEAR

1. Check if the motor bearing is good, if not, please repair it.
2. Check if the heat insulation material is good, if not, please repair it.

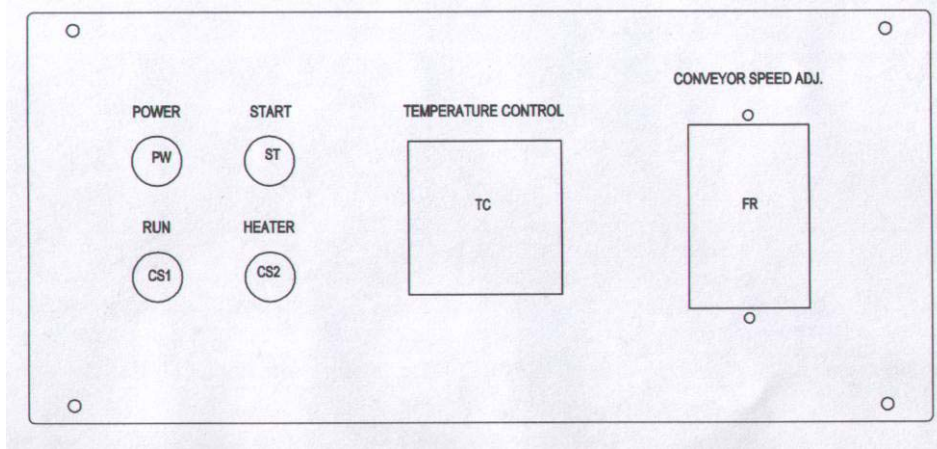
ELECTRICAL SCHEMATIC



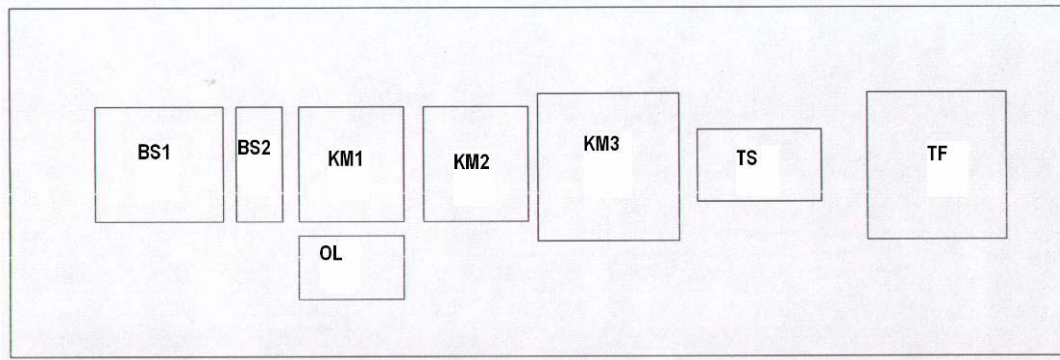
ELECTRICAL SCHEMATIC (SHRINK TUNNEL)

COMBO			
(SHRINK TUNNEL)			
图样标记	数量	重量	比例
	1		
设计	日期	校对	日期
审核	日期	批准	日期
共	页	第	页
ALPHA-PACK ENTERPRISE LIMITED			

Operating Panel Diagram



Electrical Panel Diagram



ELECTRICAL PARTS LIST(COMBO-TUNNEL)

NO.	NAME	TYPE	QTY	Manufacturer	Certificate
1	Main switch	LW42B25-1016/LF101	1	TIANYI	CE
2	Circuit breaker	DZ47-60□4P□C25, 25A	1	CHNT	CE
3	Circuit breaker	DZ47-60□1P□D1, 1A	1	CHNT	CE
4	INVERTER	Panasonic, M1G9A2V1XEA	1	Panasonic	CE
5	Cool fan	AC220V,16W, 120mmX120mm	2	SHENZHEN	CE
6	Temp-controller	TM227,DENKI	1	Jinnou Denki	CE
7	Transformer	220V/24V□25W	1	SHENZHEN	-
8	Lamp	AD16-22D/S□AC24V□yellow	1	APT	CE□
9	Lamp	AD16-22D/S□AC24V□green	1	APT	CE□
10	Contactor	CJX2-2510□AC24V□9A□1NO	2	CHNT	CE
11	Contactor	CJX2-0910□AC24V□25A□1NO	1	CHNT	CE
12	Switch	NP2-BD25+2*BE101	2	CHNT	CE
13	Blower	1*220VAC, 1PH, 2850rpm,50/60Hz	1	NANGUO	CE
14	Motor	51K60GN-SF+5GN15□60W□3*220VAC□	1	ORIENT	CE
15	Heater	H-H□220VAC□3*2500W	1	Alpha-PACK	-