TRUE EUROPE • Fields End Road • Goldthorpe • NR, Rotherham • South Yorkshire UK
UK Office/Technical +44 (0) 1709 888 888 • UK Free Phone 0800 783 2049
UK Free Phone from France, Germany, Netherlands, Belgium & Republic of Ireland 00-880-8783-4685
TRUE FOOD INTERNATIONAL, INC. • 2001 East Terra Lane • O'Fallon • Missouri • 63366-4434 • USA
USA Office/Technical (001) 636-240-2400 • Email service@truemfg.com

INSTALLATION MANUAL FOR TGU MODELS (TRUE GASTRONORM UNDERCOUNTER & WORKTOP REFRIGERATORS / FREEZERS)

TGU-2

TGU-3F

TABLE OF CONTENTS

*Spanish, German, French, Dutch, and Polish versions included.

CONGRATULATIONS!
You have just purchased the finest commercial refrigeration available. You can expect many years of trouble-free operation.

TRUE GASTRONORM UNDERCOUNTER & WORKTOP REFRIGERATORS / FREEZERS

..... www.truemfg.com .....

#912630

NOTICE TO CUSTOMER:

Loss Or Spoilage Of Products In Your Refrigerator/Freezer Is NOT Covered By Warranty. In Addition To Following Recommended Installation Procedures You Must Run The Refrigerator/Freezer 24 Hours Prior To Usage.

True Manufacturing Company, Inc.

SAFETY INFORMATION

How to Maintain Your True® Unit to Receive the Most Efficient and Successful Operation

You have selected one of the finest commercial refrigeration units made. It is manufactured under strict quality controls with only the best quality materials available. Your TRUE cooler, when properly maintained, will give you many years of trouble-free service.

WARNING!

Use this appliance for its intended purpose as described in this Owner Manual.

This cabinet contains fluorinated greenhouse gas covered by the Kyoto Protocol (please refer to cabinet's inner label for type and volume, GWP of 134a= 1,300. R404a= 3,800).

SAFETY PRECAUTIONS

When using electrical appliances, basic safety precautions should be followed, including the following:

- This refrigerator must be properly installed and located in accordance with the Installation Instructions before it is used.
- Do not allow children to climb, stand or hang on the shelves in the refrigerator. They could damage the refrigerator and seriously injure themselves.
- Do not touch the cold surfaces in the refrigerated compartment when hands are damp or wet. Skin may stick to these extremely cold surfaces.
- Do not store or use flammable liquids or vapors in the vicinity of this or any other appliance.
- Keep fingers out of the "pinch point" areas; clearances between the doors and cabinet are necessarily small; be careful closing doors when children are in the area.

NOTE: *Any servicing, warranty repairs or maintenance should be carried out by qualified personnel, failure to do so could be dangerous and may invalidate your warranty.*

- Unplug the refrigerator before cleaning and making repairs.
- Setting temperature controls to 0 position does not isolate the unit from the electrical supply, you must disconnect the main power lead from the wall receptacle to isolate.

DANGER!

RISK OF CHILD ENTRAPMENT

HOW TO SAFELY DISPOSE OF USED REFRIGERATION EQUIPMENT

Child entrapment and suffocation are not problems of the past. Junked or abandoned display cases are still dangerous… even if they will sit for "just a few days."

It is much safer if doors and lids are removed so children cannot get trapped inside, leaving the shelves in place will also deter children from trying to climb inside.

If you are getting rid of your old display case, please follow the instructions below to help prevent accidents. Depending on the country where the unit is located there will be officially approved ways of disposing of your used equipment.

It is important that care is taken in disposing of used refrigerators or freezers. Before You Throw Away Your Old Refrigerator or Freezer:

- Take off the doors.
- Leave the shelves in place so that children may not easily climb inside.

Refrigerant Disposal

Depending on the country where the unit is located there will be Officially approved way of disposing of your used equipment. Your old refrigerator may have a cooling system that uses "Ozone Depleting " chemicals. If you are throwing away your old refrigerator, make sure the refrigerant is removed for proper disposal by a qualified service technician. If you intentionally release any refrigerants you can be subject to fines and imprisonment under provisions of the environmental regulations.

SAFETY INFORMATION

WARNING!

IMPORTANT ELECTRICAL SAFETY INFORMATION

Do not, under any circumstances, cut or remove the ground prong from the power cord.
For personal safety, this appliance must be properly grounded.

Your TRUE unit will come fitted with the correct plug for your Country (if not contact your supplying dealer). This plug has a ground or earth prong or pin, it must be connected to a electrical supply outlet that is also grounding or earthed. This minimizes the possibility of electric shock hazard. Do not connect to any power supply if you have any doubts. Make sure a qualified electrician confirms that the supply is grounded or earthed. Ensure that the supply is correct and matches that on the unit information plate. Do not use adapter plugs or extension leads as these can cause safety issues and early failure of electrical components. The use of adapters and extension cords will invalidate your warranty. Always disconnect the unit by pulling on the plug and not on the power lead. Do not use the unit if the power lead has been damaged.

USE OF EXTENSION CORDS / ADAPTER PLUGS

Do not use adapter plugs or extension leads as these can cause safety issues and early failure of electrical components. The use of adapters and extension cords will invalidate your warranty. NEVER USE AN EXTENSION CORD! NEVER USE AN ADAPTER PLUG!

WARNING

Compressor warranties are void if compressor burns out due to low voltage.

WARNING

Power supply cord ground should not be removed!

The incoming power source to the cabinet including any adapters used must have the adequate power available and must be properly grounded. Only adapters listed with UL should be used.

REPLACEMENT PARTS

- Component parts shall be replaced with like components.
- Servicing shall be done by authorized service personnel, to minimize the risk of possible ignition due to incorrect parts or improper service.
- Lamps must be replaced by indentical lamps only.
- If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer or its service agent.

INSTALLATION / OPERATION INSTRUCTIONS

OWNERSHIP

To ensure that your unit works properly from the first day, it must be installed properly. We highly recommend that your TRUE unit is installed by your supplying dealer or service company. The cost of a professional installation is money well spent. Issues caused by incorrect installation may invalidate your warranty.

Before you start to install your TRUE unit, carefully inspect it for freight damage. If damage is discovered, immediately file a claim with the delivery freight carrier or supplying dealer.

***TRUE** is not responsible for damage incurred during shipment.*

REQUIRED TOOLS

- Adjustable Spanner or Mole Grips
- Phillips Head Screwdriver
- Spirit Level

UNCRATING

The following procedure is recommended for uncrating the unit:

A. Remove the outer packaging by pulling tri-wall nails from skid. Remove (4) cardboard corner pads and dust cover.

B. Inspect for concealed damage. Again, immediately file a claim with the freight carrier if there is damage.

C. Move your unit as close to the final location as possible before removing the wooden skid.

***Note:** Keys for coolers with door locks are located in warranty packets.*

LOCATING

A. Remove packing material behind cabinet as a cushion. Carefully lay the unit on its back to remove skid.

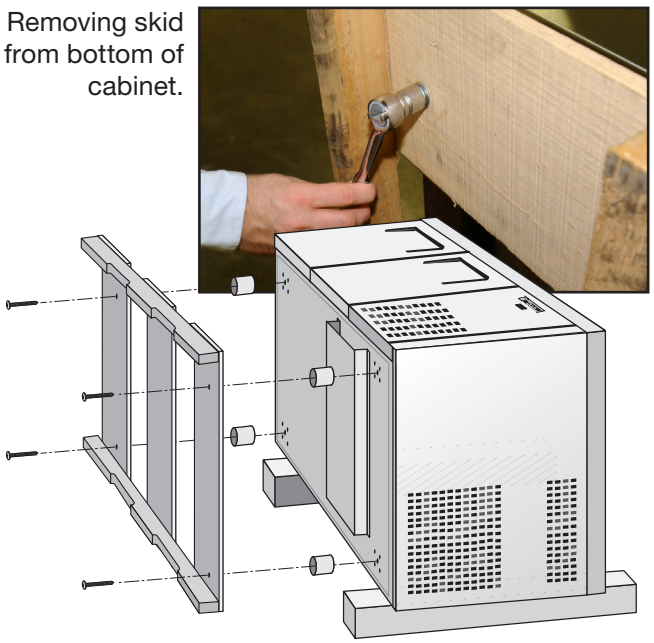
When lifting unit remember to leave the cabinet upright for 24 hours before plugging into power source.

B. Remove skid by unscrewing all base rail anchor brackets. Place skid to the side.

C. Carefully lift cabinet upright.

D. Applicance tested according to the climate classes 5 and 7 for temperature and relative humidity.

Removing skid from bottom of cabinet.



INSTALLATION OF LEGS AND CASTORS

Securing Castors

To obtain maximum strength and stability of the unit, it is important that you make sure each castor is secure. The bearing race on the castor of the top edge of the leg must make firm contact with the rail.

Unit Leveling

Four leveling shims have been provided for leveling castored units positioned on uneven floors. Shims must be positioned between rail end and bearing race. TRUE recommends a four shim limit to any single castor.

A. Turn the bearing race counter-clockwise until the cabinet is level. Level front to back and side to side. (diagonally)

B. Install the desired number of shims, making sure the slot of the shim is in contact with the threaded stem of the castor.

C. If more than one shim is used, turn the slot at a 90° angle so they are not in line.

D. Turn the bearing race clockwise to tighten and secure the castor by tightening the anchoring bolt with a 3/4 inch open-end wrench, socket, or the tool provided.

CAUTION

To avoid damage to lower rail assembly, slowly raise unit to upright position after installing castors.

Thread four screws into castor in the underside of cabinet frame rail.

Anchor the four screws firmly to the base of the unit.

LEVELING

A. Set unit in its final location. Be sure there is adequate ventilation in your room. Under extreme heat conditions, (100°F+, 38°C+), you may want to install an exhaust fan.

WARNING
Warranty is void if ventilation is insufficient.

B. Proper leveling of your TRUE cooler is critical to operating success (for non-mobile models). Effective condensate removal and door operation will be effected by leveling.

C. The cooler should be leveled inside the cabinet front to back and side to side with a level.

D. Ensure that the drain hose or hoses are positioned in the pan.

E. Free plug and cord from inside the lower rear of the cooler (do not plug in).

F. The unit should be placed close enough to the electrical supply so that extension cords are never used.

WARNING
Cabinet warranties are void if OEM power cord is tampered with. TRUE will not warranty any units that are connected to an extension cord.

ELECTRICAL INSTRUCTIONS

A. Before your new unit is connected to a power supply, check the incoming voltage with a voltmeter. If anything less than 100% of the rated voltage for operation is noted, correct immediately.

B. All units are equipped with a service cord, and must be powered at proper operating voltage at all atimes. Refer to cabinet data plate for this voltage.

TRUE requires that a sole circuit be dedicated for the unit. Failure to do so voids warranty.

WARNING
Compressor warranties are void if compressor burns out due to low voltage.

WARNING
Power supply cord ground should not be removed!

WARNING
Do not use electrical appliances inside the food storage compartments of the appliances unless they are of the type recommended by the manufacturer.

STARTUP

A. The compressor is ready to operate. Plug in the unit.

B. Factory temperature control setting gives refrigerators an approximate temperature of 35°F (1.6˚C) and freezers an approximate temperature of -10°F (-23.3˚C). Allow unit to function several hours, completely cooling cabinet before changing the control setting.

C. Excessive tampering with the control could lead to service difficulties. Should it ever become necessary to replace temperature control, be sure it is ordered from your TRUE dealer or recommended service agent.

D. Good air flow in your TRUE unit is critical. Be careful to load product so that it neither presses against the back wall, nor comes within four inches of the evaporator housing. Refrigerated air off the coil must circulate down the back wall.

NOTE

If the unit is disconnected or shut off, wait five minutes before starting again.

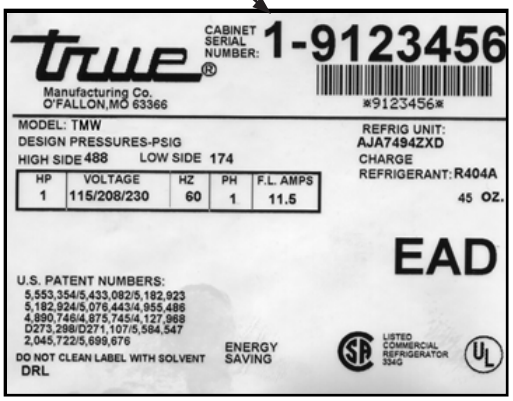
RECOMMENDATION

Before loading product we recommend you run your TRUE unit empty for two to three days. This allows you to be sure electrical wiring and installation are correct and no shipping damage has occurred. Remember, our factory warranty does not cover product loss!

REPLACEMENT PARTS

TRUE maintains a record of the cabinet serial number for your unit. If at any time during the life of your display case, a part is needed, you may obtain this part by furnishing the model number and serial number to the company from whom you purchased the cabinet.

Serial Number



SHELVING INSTALLATION / OPERATION

REQUIRED TOOLS:

- Tray Slide

Step 1

Position tray slide to align front to back (level) with rectangular hole of the standard posts. Make sure tabs on the back-side of the tray slide are facing down. Push in and slide down on both ends so tabs are in the locked position. (See figure 1).

Note

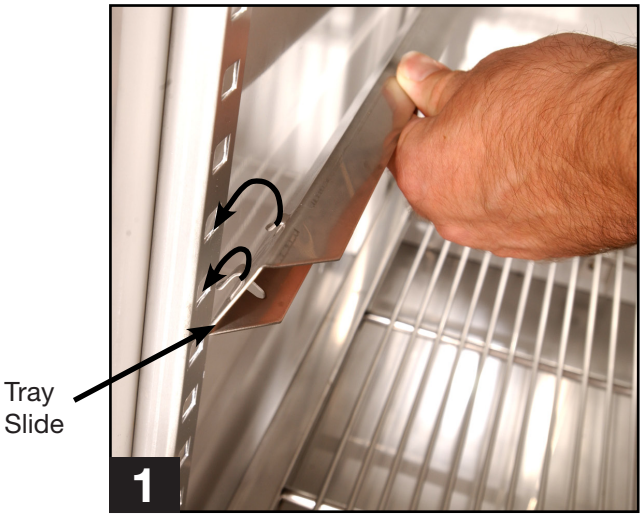
Make sure that pan slide is level front to back within the refrigerator or freezer.

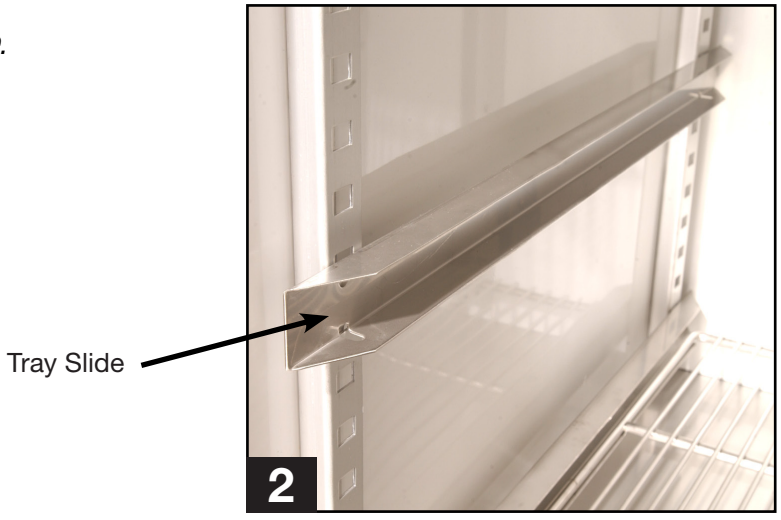
Step 2

Repeat procedure with remaining tray slides.

Note

Figure 2 illustrates correct installation of tray slide.





IF YOUR CABINET IS BUILT WITH THIS TEMPERATURE CONTROL, PLEASE SEE THE FOLLOWING INSTRUCTIONS.

For proper operation, it is important to set correct time of day at time of cabinet installation.

LAE CONTROL SEQUENCE OF OPERATION

1. Cabinet is plugged in.

a. Display will illuminate.
b. Interior light will illuminate on glass door models only. (If lights do not come on please see instructions on following page(s).) Solid door cabinet lights are controlled by door switch.

2. After the LAE control preprogrammed time delay of 3 minutes, the compressor and evaporator fan(s) will start if the control is calling for cooling.

a. Control may be already pre-programmed from the factory so at the start of every compressor cycle or during a defrost cycle, the condenser fan(s) will reverse for 30 seconds to blow dirt off the condensing coil.

3. The LAE control will cycle the compressor but may also cycle evaporator fan(s) on and off determined by the Set-Point and Differential temperatures. (If the Set-Point needs to be changed due to conditions please see instructions on the following page(s).)

a. The ***Set-Point*** is the preprogrammed temperature which shuts off the compressor.

b. The ***Differential*** is the preprogrammed temperature that is added to the Set-Point temperature that will start the compressor.

Example: *If the Set-Point is -9°F/-23°C and the Differential is 10°F/5°C*
(Set-Point) -9°F + 10 (Differential) = 1°F
Or
(Set-Point) -23°C + 5 (Differential) = -18°C
The compressor and evaporator fan(s) will cycle off -9°F/-23°C and back on at 1°F/-18°C

4. The LAE control may be preprogrammed to initiate defrost by interval or at specific times of day. (If additional Defrost Intervals or Cycles are needed or a Manual Defrost is required due to conditions please see instructions on the following page(s).)

a. At this time the “dEF” will appear on the display and compressor will turn off until a preprogrammed temperature or duration is reached. During this time for freezers only, evaporator fan(s) will also turn off and the coil heater and drain tube heaters will also be energized.

b. After the preprogrammed temperature or duration for defrost has been reached there may be a short delay for both the compressor and evaporator fans to restart. At this time “dEF” may still appear on the display for a short time.

True Manufacturing recommends that ONLY the Set-Point and/or Defrost Interval may be adjusted due to certain conditions.

This sequence is NOT model specific.

If you have any questions, please contact the Technical Service Department.
Phone: 800-325-6152 • Email: service@truemfg.com

LAE Electronic Control

LAE Control Icons

- Compressor Running
- Evaporator Fan Running
- Cabinet in Defrost
- Activation of 2nd Parameter Set - NA
- Alarm - NA

Info/Set Point Button

Manual Defrost/ Down Button

Manual Activation/ Up Button

Stand-By Button

LOCKING & UNLOCKING LAE CONTROLLER

WHY:

LOCKING OF CONTROL IS NECESSARY TO PREVENT CHANGES TO PROGRAM THAT MAY AFFECT CABINET OPERATION

HOW:

A. To change lock setting press and release the info button [i]. "t1" will appear. See image 1.

Press the up button [M] until "Loc" appears. See image 2.

B. While pressing and holding the info button [i] press the up [M] or down [▼] button to change the lock settings. If "no" appears, the controller is unlocked. If "yes" appears, the controller is locked. See images 3 and 4.

C. Once the lock setting has been set correctly release the info button [i].

Wait 5 seconds for the display to show temperature. See image 5.

Image 3: If "no" appears on screen, the controller is unlocked.

Image 4: If "yes" appears on screen, the controller is locked.

LAE Electronic Control

LAE Control Icons

- Compressor Running
- Evaporator Fan Running
- Cabinet in Defrost
- Activation of 2nd Parameter Set - NA
- Alarm - NA

Info/Set Point Button

Manual Defrost/ Down Button

Manual Activation/ Up Button

Stand-By Button

HOW TO CHANGE THE "SET POINT"

May need to unlock control.

WHY:

THE SET POINT IS THE TEMPERATURE AT WHICH THE COMPRESSOR WILL SHUT OFF.

Please note that the "set point" IS NOT the cabinet holding temperature.

HOW:

A. To see the set point, press and hold the info button. See image 1.

B. While still holding the info button [i], press the up [M] or down [] button to change the "set point".

C. Once the "set point" has been set correctly release the info button [i].

The display will show temperature. See image 2.

LAE Electronic Control

LAE Control Icons

- Compressor Running
- Evaporator Fan Running
- Cabinet in Defrost
- Activation of 2nd Parameter Set - NA
- Alarm - NA

Info/Set Point Button

Manual Defrost/ Down Button

Manual Activation/ Up Button

Stand-By Button

HOW TO INITIATE A MANUAL DEFROST

May need to unlock control.

WHY:

A ONE TIME ADDITIONAL DEFROST MAY BE NECESSARY TO CLEAR ACCUMULATED FROST/ICE FROM EVAPORATOR COIL.

HOW:

The method to initiate a manual defrost is determined by the Defrost Mode Parameter "DTM" preprogrammed in the controller.

A. REGULAR TIME DEFROST (TIM)

If controller is preprogrammed for "TIM", press and release the Manual Defrost button until "dEF" appears.

B. REAL TIME CLOCK (RTC)

If controller is preprogrammed for "RTC" press the and hold the Manual Defrost button for 5 seconds until "dh1" appears. Release the Manual Defrost button and then press and hold for an additional 5 seconds until "dEF" appears.

DEFROST WILL ONLY TERMINATE ONCE A SPECIFIC PRESET TEMPERATURE OR A PRESET TIME DURATION IS REACHED.

LAE Electronic Control

LAE Control Icons

- Compressor Running
- Evaporator Fan Running
- Cabinet in Defrost
- Activation of 2nd Parameter Set - NA
- Alarm - NA

Info/Set Point Button

Manual Defrost/ Down Button

Manual Activation/ Up Button

Stand-By Button

HOW TO CHANGE "DEFROST INTERVALS"

May need to unlock control.

This can only be changed if defrost mode parameter "DFM" is set for "TIM".

WHY:

THE DEFROST INTERVAL IS THE TIME DURATION BETWEEN DEFROST CYCLES.

The Defrost Interval time starts when the cabinet is supplied power or after a manual defrost.

HOW:

A. To see the set point, press and hold the info button [i] and the stand-by button [⏻] at the same time. "ScL" will appear. See image 1.

B. Push the up button [▲M] until "dFt" appears. See image 2.

C. Press and hold the info button [i] to see the "defrost interval time". See image 3.

D. While pressing and holding the info button [i], press the up or down button to change the "defrost interval times" (higher the number the less frequent the cabinet will defrost).

E. Once the "defrost interval time" has been changed, release the info button [i].

Wait 30 seconds for the display to show temperature. See image 4.

DISPLAY

DISPLAY			
dEF	Defrost in progress	hi	Room high temperature alarm
oFF	Controller in stand-by	Lo	Room low temperature alarm
do	Door open alarm	E1	Probe T1 failure
t1	Instant probe 1 temperature	E2	Probe T2 failure
t2	Instant probe 2 temperature	E3	Probe T3 failure
t3	Instant probe 3 temperature	th1	Maximum probe 1 temperature recorded
min	Minutes of the Real Time Clock	tLo	Minimum probe 1 temperature recorded
hrS	Hours of the Real Time Clock	Loc	Keypad state lock

Resistance Readings for LAE Probes

Temperaure		K-ohm
C	F	
-40	-40	195.652
-35	-31	148.171
-30	-22	113.347
-25	-13	87.559
-20	-4	68.237
-15	5	53.650
-10	14	42.506
-5	23	33.892
0	32	27.219
5	41	22.021
10	50	17.926
15	59	14.674
20	68	12.081
25	77	10.000
30	86	8.315
35	95	6.948
40	104	5.834
45	113	4.917
50	122	4.161
55	131	3.535
60	140	3.014
65	149	2.586
70	158	2.228
75	167	1.925
80	176	1.669
85	185	1.452
90	194	1.268
95	203	1.145
100	212	0.974
105	221	0.858
110	230	0.758
115	239	0.671
120	248	0.596
125	257	0.531

LAE Controller Parameter Settings for Celsius

SCL	1C
SPL	(X-32) / 1.8
SPH	(X-32) / 1.8
SP	(X-32) / 1.8
C-H	
HYS	(X) / 1.8
CRT	
CT1	
CT2	
CSD	
DFM	
DFT	
DH1	
DH2	
DH3	
DH4	
DH5	
DH6	
DLI	(X-32) / 1.8
DTO	
DTY	
DPD	
DRN	
DDM	
DDY	
FID	
FDD	(X-32) / 1.8
FTO	
FCM	
FDT	(X) / 1.8
FDH	(X) / 1.8
FT1	
FT2	
FT3	
ATM	
ALA	(X-32) / 1.8
AHA	(X-32) / 1.8
ALR	(X) / 1.8
AHR	(X) / 1.8
ATI	
ATD	

ADO	
AHM	
AHT	(X-32) / 1.8
ACC	
IISM	
IISL	(X-32) / 1.8
IISH	(X-32) / 1.8
IISP	(X-32) / 1.8
IIHY	(X) / 1.8
IIFC	
HDS	
IIDF	
SB	
DS	
DI2	
STT	
EDT	
LSM	
OA1	
OA2	
2CD	
INP	
OS1	(X) / 1.8
T2	
OS2	(X) / 1.8
T3	
OS3	(X) / 1.8
TLD	
SIM	
ADR	

All Parameters with formula above need to be converted for Celsius applications.

Example:

If current SPL is set for 20 degrees F the formula is (X-32) / 1.8

(20-32) / 1.8 = -6.7 Celsius

We want to make it very clear that all parameter set points on the LAE controller have been set at the factory to optimize performance and adjusting any of these parameters in the field will affect the cabinet's performance and could void the Warranty.

CLEANING THE CONDENSER COIL

When using electrical appliances, basic safety precautions should be followed, including the following

TOOLS REQUIRED:

- Phillips screwdriver
- Stiff bristle brush
- Adjustable Spanner or Mole Grips
- Vacuum Cleaner

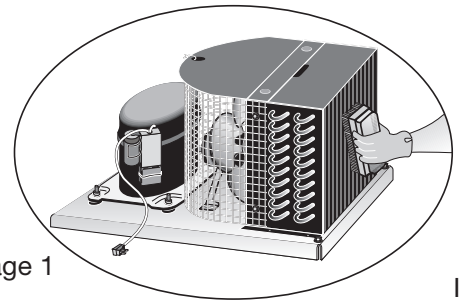


Image 1

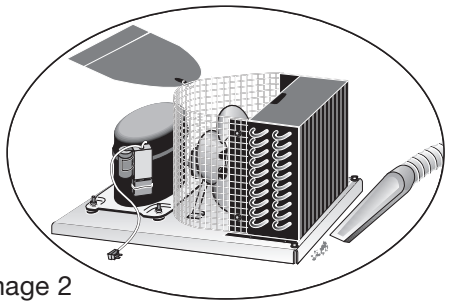


Image 2

Step 1
Disconnect power to unit.

Step 2
Removing the four Phillips screws to allow removal of the front grill.

Step 3
Remove bolts anchoring compressor assembly to frame rails and carefully slide out. (tube connections are flexible)

Step 4
Clean off accumulated dirt from the condenser coil and the fan with a stiff bristle brush. (See image 1).

Step 5
Lift cardboard cover above fan at plastic plugs and carefully clean condenser coil and fan blades.

Step 6
After brushing condenser coil vacuum dirt from coil, and interior floor. (See image 2).

Step 7
Replace cardboard cover. Carefully slide compressor assembly back into position and replace bolts.

Step 8
Reinstall rear grill assembly onto unit. Tighten all screws.

Step 9
Connect unit to power and check to see if compressor is running.

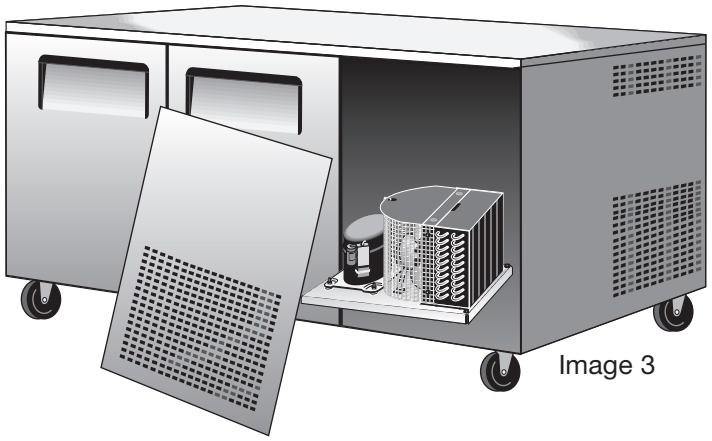


Image 3

THE CLEANING OF THE CONDENSER IS NOT COVERED BY THE WARRANTY!

Condensers accumulate dirt and require cleaning every 30 days. Dirty condensers result in compressor failure, product loss, and lost sales... which are not covered by warranty.

If you keep the Condenser clean you will minimize your service expense and lower your electrical costs. The Condenser requires scheduled cleaning every thirty days or as needed.

Air is pulled through the Condenser continuously, along with dust, lint, grease, etc.

A dirty Condenser can result in NON-WARRANTEED part & Compressor Failures, Product Loss, and Lost Sales.

Proper cleaning involves removing dust from the Condenser. By using a soft brush, or vacuuming the Condenser with a shop vac, or using CO_2, nitrogen, or pressurized air.

If you cannot remove the dirt adequately, please call your refrigeration service company.

World Headquarters Service Department Availability Monday-Thursday 7:00 a.m. to 7:00 p.m., Friday 7:00 a.m. to 6:00 p.m., and Saturday 8:00 a.m. to 12:00 p.m. CST.

STAINLESS STEEL EQUIPMENT CARE AND CLEANING

CAUTION: Do not use any steel wool, abrasive or chlorine based products to clean stainless steel surfaces. Please ensure that you use appropriate products when cleaning and polishing your TRUE unit. Cleaners containing chlorine must not be used as these will attack the stainless steel causing damage and in some cases corrosion. Your supplier of cleaning products should be able to advise you of the products suitable to keep your TRUE unit looking like new.

- **Stainless Steel Opponents**

There are three basic things which can break down your stainless steel's passivity layer and allow corrosion to rear its ugly head.

1) Scratches from wire brushes, scrapers, and steel pads are just a few examples of items that can be abrasive to stainless steel's surface.
2) Deposits left on your stainless steel can leave spots. You may have hard or soft water depending on what part of the country you live in. Hard water can leave spots. Hard water that is heated can leave deposits if left to sit too long. These deposits can cause the passive layer to break down and rust your stainless steel. All deposits left from food prep or service should be removed as soon as possible.
3) Chlorides are present in table salt, food, and water. Household and industrial cleaners are the worst type of chlorides to use.

8 steps that can help prevent rust on stainless steel:

1. **Using the correct cleaning tools**

   Use non-abrasive tools when cleaning your stainless steel products. The stainless steel's passive layer will not be harmed by soft cloths and plastic scouring pads. Step 2 tells you how to find the polishing marks.

2. **Cleaning along the polish lines**

   Polishing lines or "grain" are visible on some stainless steels. Always scrub parallel to visible lines on some stainless steels. Use a plastic scouring pad or soft cloth when you cannot see the grain.

3. **Use alkaline, alkaline chlorinated or non-chloride containing cleaners**

   While many traditional cleaners are loaded with chlorides, the industry is providing an ever increasing choice of non-chloride cleaners. If you are not sure of your cleaner's chloride content contact your cleaner supplier. If they tell you that your present cleaner contains chlorides, ask if they have an alternative. Avoid cleaners containing quaternary salts as they can attack stainless steel, causing pitting and rusting.

4. **Water Treatment**

   To reduce deposits, soften the hard water when possible. Installation of certain filters can remove corrosive and distasteful elements. Salts in a properly maintained water softener can be to your advantage. Contact a treatment specialist if you are not sure of the proper water treatment.

5. **Maintaining the cleanliness of your food equipment**

   Use cleaners at recommended strength (alkaline, alkaline chlorinated or non-chloride). Avoid build-up of hard stains by cleaning frequently. When boiling water with your stainless steel equipment, the single most likely cause of damage is chlorides in the water. Heating any cleaners containing chlorides will have the same damaging effects.

6. **Rinse**

   When using chlorinated cleaners you must rinse and wipe dry immediately. It is better to wipe standing cleaning agents and water as soon as possible. Allow the stainless steel equipment to air dry. Oxygen helps maintain the passivity film on stainless steel.

7. **Hydrochloric acid (muriatic acid) should never be used on stainless steel**
8. **Regularly restore/passivate stainless steel**