COMMERCIAL DISPLAY SHOWCASE

Operation manual

KAC

please read carefully and operate according to manual
please reserve manual for future reference

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Attachment 1: electronical thermostat adjustment

Attachment 2: electric map of display showcase

A. acknowledge of use

Dear Clients:

Thanks for your purchase my company products. Be sure to take advantage of all products to offer,read these instructions carefully and operate properly. If there is any new alternation we will not be obliged to inform.

B. brief introduction to product

My company display showcase worked out according to China environment,select to reputable quality parts,excellent handcraft to guarantee finshied products top quality. My company products hold grand appearance,definite functions, showing relevant cold or frozen foods. our display showcase is supermarket,restaurant,shopping mall best selection.

We are sincerely hope my company Display showcase bring excellent showing efficiency and economic benefit for you

C. safety and sign

Safety: display showcase should install on the place where coincide with operation manual.

Authorization: all works to my company display showcase and cooling system should be operated by qualify authorized skilled staff

Safe operation:in order to avoid danger maybe happen,before operation all workers must read carefully such operation manual

Safety sign: safety sign has been special point out,in order to avoid danger sign must be obey wholly

attention!		Prevent possible danger to equipement occur
carefully!		Prevent possible danger to person occur
caution!		Prevent serious danger to person occur
Danger!		Prevent fatal accident to person occur

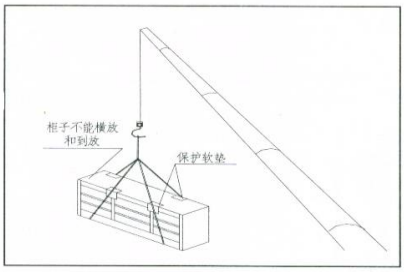
D、ready item for transportation and openning package

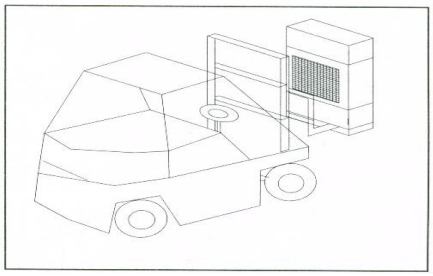
There are glass or other easy smash goods in equipment and package,please be carefully in transporting,handling or moving equipment.

When receive equipment,please check and examine all products as per packing list listed,only confirming all products are good without damage or missing can accept products. If there is visible destroy or damage please remark on the transportation documents or receipt and confirmed signature by transportation agent,unless transportation agent can reject claims for compensation. At the same time please contact

with local staff,our local staff will provide necessary examination paper for claims for compensation.

Unload from truck, double fork is necessary and more attention for safety ,if unload by crane, φ10mm or above tightwire or metal strip should bind to pointed place,slowly unload to ground.





When moving equipment please move wooden pallet under equipment bottom,do not carry or seize equipment parts avoid to damage; Meanwhile equipment should be delivery balanced,no slant,no fell flat,no upset equipment.

There are one set of operation manual,one eligible certificate,one contract products packing list,one set of assembly packing list (if there is no assembly needed,there is no such packing list),please check each listed item .

To Split model of display showcase,cabinet,unit and assembly installation should be made by our company authorized staff ,please do not open package avoid damage to cabinet and accessory.

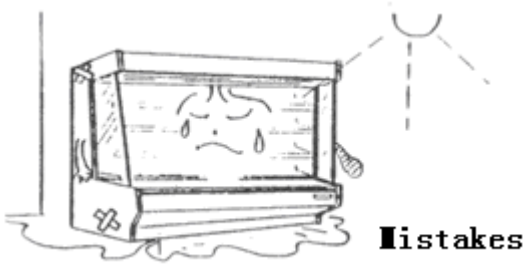
Please slowly and softly operation when opening package avoid damage to display showcase and accessory;remove display package please do not confuse or miss parts and accessory within package, please install directly in place

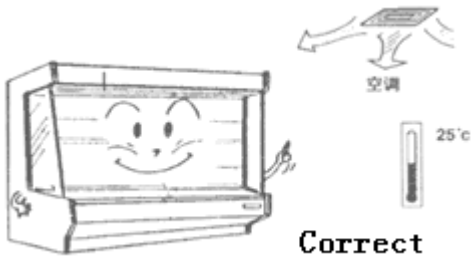
If damage or destroy only found after opening package, claim must be made for loss. Once find damage written application for transportation agent to check ,examination must be made within 15 days,keep all package for examination too.

E.、notice in operation

1、 emplace

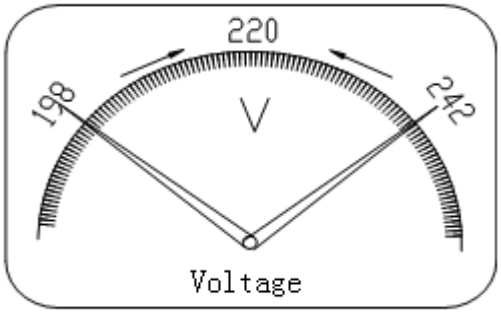
Display showcase must be used indoor, can’t be used outdoor,should be used in supermarket,restaurant,shop where air-conditioner working well,in where temperature keep 25℃ or below,humidity 60%,environment wind speed≤0.2m/S and without heat fountainhead effect. when temperature,humidity or wind speed in high condition freezing efficiency of display showcase couldn’t meet to use requirement.



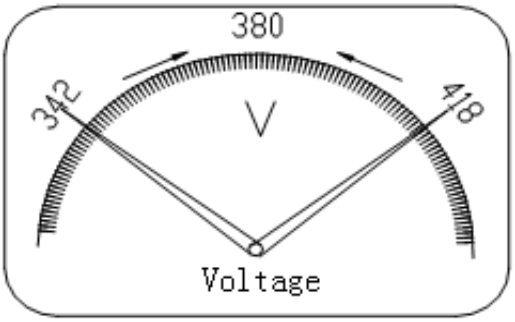


idiographic use requirement:

In using voltage should keep within rated voltage ±10%,if voltage unstable please select safe and reliable regulator



Allow rated voltage 220v range



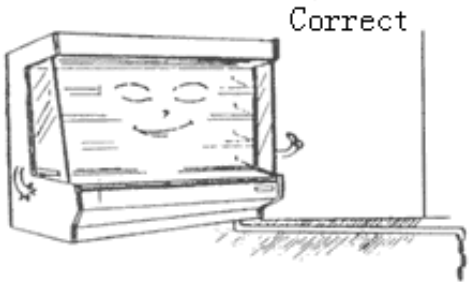
allow rated voltage 380v range

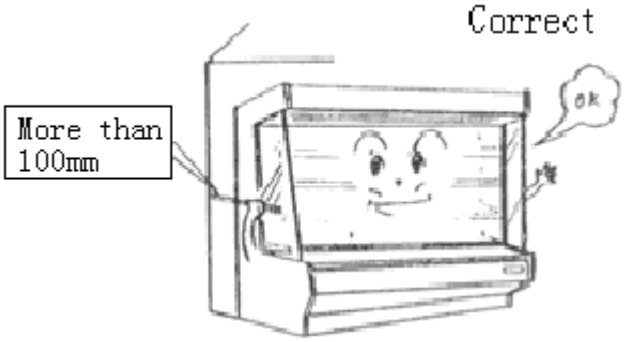
Power supply of display showcase and cooling unit where should add display showcase appropriative electricity creepage safeguard

Cooling unit environment temperature should below 40℃,environment cleanness, no dirty, no sundries,unit in room should in good ventilation;if exposure in air there should add anti-rain,anti-sun sail,wire netting protector.

Display showcase must be installed on level off ground,notice installation even ,guarantee drainage swimmingly

When place against wall,there must be 110mm gap between cabinet backboard and wall,avoid cabinet backboard dew

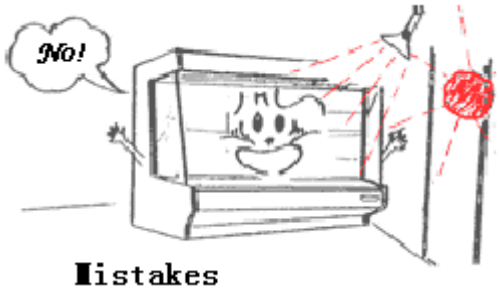


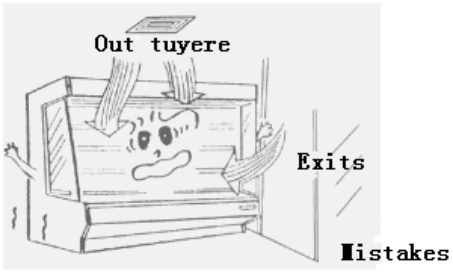


Avoid install display cabinet on the place sun,light point-blank or near by heat fountainhead

Avoid install cabinet near by pass in and out of wind, exit of ventilation,fan or

door,window turn or off frequently, avoid air curtain of display showcase effected negatively





2、 installation

notice for moving display showcase,please refer to <D.ready item for transportation and opening package> part.

Unload ground bolt,down lift cabinet,set up ground bolt to branch leg ,place display showcase to position selected

Take out parts within inner display showcase,check as per packing list if all parts are there

3、 cabinet make up

Stick sponge adhesive tape to cabinet make up panel, equably and contineous spread airproof glue on the outside of sponge adhesive tape

Move two cabinet which want to make up as near as possible,adjust ground bolt and cabinet,line the front and back,top and bottom

Fit localizer on the anchor point,close up two cabinets

Joint cabinet and fix them by bolt and nut

Fit accessories of each display showcase, please be noticed that each accessory (such as sheleves,suport arm,label and so on) should be same position and incline angle

Accoring to reserved drainge place, fit each showcase drain elbow,ternate tie-in and so on,please be careful spread reasonable adhesive glue on every joint part to guarantee no water leakage

Dispose,install and connect refrigeration pipeline and electric control wiring according to project design

After air tight test pressure confirmed,exhaust air then impregnate freon, then examine if electric error or not

Fit decorative panel (including bottom panel,side panel,top panel), joint with decorative panel

Check every accessory,adjust and modulate every parts to appropriate condition

Examine fixed implement,refrigeration parts and accessory if there is missing ,error

Clean inner and outer of cabinet,accessory with alcohol and detergent

Deliver operation manual and usual spare parts to user and explain using methods to user,user signature on the delivery paper,installation finish

4、 use

Interspace should be reserved in display showcase when put foods in order that cooling air circulation and foods deposited

Foods should not exceed or barrier draught back entry to avoid cooling air no circulation

Do not put foods on the draught back entry in showcase,unless temperature couldn’t meet to requirement in showcase

Caution: do not put frozen foods or cold foods to wrong display showcase

In order to lessen unnecessary foods waste and energy loss, foods should have reasonable package in showcase at same time please lessen opening,take out foods frequency as possible

5、 using safety concerned

Connect power to run the display showcase, put into showing products only after temperature in showcase decline to rated range (refrigeration: 5℃~10℃,freeze: 5℃~10℃)

Individual three-core single socket fitted with reliable ground wire and suitable air switch with electricity creepage safeguard,ground wire could not select neutral conductor of network or water pipe or caliduct

Do not keep flammable, explosive,volatile gas or liquid in showcase

Before clean cabinet general power supply must be cut off,only no power confirmation can clean and clear cabinet

Soft cloth dipped with neutral uncorrosive scour wipe cabinet and parts, then clean with dry cloth. Do not use acidic,alkaline or corrossive,poisonious scour to clean cabinet

Take or put into foods softly, do not throw or chuck foods avoid to damage cabinet and accessory

Cut off power please connect power again after 5 minutes avoid to damage electric parts in display showcase

Periodic check evaporator defrost in showcase, if defrost not so clean please contact skilled staff to resolve

For the sake of energy consumption please pull out night blind when market closing

Pull out or close night blind slowly and softly till to night blind into

position avoid to damage night blind and accessory

Please arrange staff examine display showcase regulately ,notice temperature transformation and record temperature digit;if find any problem please contact manufacturer or local service people without delay,settle trouble to guarantee usual use display showcase,avoid unnecessary loss for you.

In using do not take out foods by wet hand or stand by showcase long time avoid frostbite person

F. maintenance

1、 display showcase cabinet maintenance

frequency	parts	contents	remarkable issue
Everyday discover clean in time	appearance parts	1.Water soiled,besmirch wipe 2.Rust vestige clean	1.Clean with water,with neutral scour if necessary 2. Do not use corrossive solvent 3. Pay more attention to clean merchandise containing salt
	shelves and panels	1.Water soiled,besmirch wipe 2.Merchandise trifling, dunghill clear	every hole and corner should clean avoid bacterial multiply
	showcase cessory and food rack net	1.soiled,besmirch wipe 2.Partition net,price code clean	clean ice ,dunghill in net hole,crack
once/month	cabinet and all accessory	Water soiled,besmirch wipe	notice clean and clear outside and inside everywhere
	viewfinder	Water soiled,besmirch , dust wipe	use neutral scour notice glass edges and corners
	lighting	1.dust,besmirch wipe 2. moisture wipe	clean in time moisture in fluorescent lamp avoid electric short circuit burn
	launch exit, evaporator shelves,evaporator room	dunghill,sundries clean and clear	do not pour sundries into drainage pipeline avoid to block channel
	compressor room, refrigeration unit	refer to evaporator clean	notice must cut off power supply then operate
Once/3 months	cabinet place with draught back entry	1.Merchandise trifling, dunghill clear 2.Deposited erchandise clean 3.Drainage pipe exit block clean 4.Swash with clean water	remove relevant spare parts,such as guide glass,side glass,low shelves and so on. Pay attention to keen-edged steel edges and corners,bolt neb and so on,beware scratch
	evoporate fan motor	appendiculate wipe and clear	Notice: prevent water into fan motor

	evaporate room	1.Merchandise trifling, dunghill clear 2.Deposited merchandise clean	Notice:keen edges and corners of steel ,ice and frost on evaporator couldn't knocked and root out by tools
	compressor room,compressor unit	1.Dust in compressor room clean 2.Condensor dust clean 3.Refrigeration system examination 4.Joint wire of electric parts examination	Notice: prevent water into electric components,avoid pipeline and electric wiring destory

2、refrigeration system maintenance

Condensor maintenance:condensor is main heat disperse components in refrigeration system,which heat disperse aluminium sheet easyly cling dust,poor situation decline compressor cooling capacity temperature in cabinet rise;severity situation can burn compressor lead to magnitude loss

Before clean chief power supply must be cut off,guarantee there is no power supply can operate start

Swash condensor from up to down with water,swash uniformly to each wing of condensor

When oil besmirch or dust badly,neutral scour or special aluminium besmirch scour should be added to swash

Caution:prevent water into fan motor,compressor and such electric components

Finish evaporator rinse,puff wash condensor with high pressure nitrogen or compressed air,puff out water and filth between wing

Caution: do not puff to the direction of fan motor,compressor

Check condensor fan motor,compressor and such electric components,all components in good condition can power supply and start machine

compressor and electric implement maintenance

Check compressor bottom foundation is fixed or not,lessen crowded or shift

Check compressor or unit oil mirror,oil level should between 1/2～2/3 on oil mirror (shut down condition), between 1/4～2/3 (running condition)

Check system pressure controller,temperature thermostat,defrost controller,oil pressure controller,cooling spray system and three way cock,close cock and such components condition

Check lighting components,temperature display instrument,electromagnetic valve,heater elements working condition

Check electric wiring fasten or not,every joint point insulation and airproof

Check power supply each phase voltage,phase sequence meet to demand,relevant phase voltage imbalance ≦3%,compressor,condensor fan motor supply phase voltage and phase sequence right

Observe if unconventionality noise or phenomena when system working

caution: power supply must be cut off when check electric components, or check by authorized staff

drainpipe maintenance

Check cabinet inside and outside drain situation,guarantee outfall no ice or dirty block

Check drainpipe,guarantee drainpipe slope lead to ground leak,gradient 1/50～1/200

Check drainpipe leakage,disrepair

G、Trouble,settlement,after-sale service

1. Usual trouble reason and settlement

trouble	possible trouble parts	reason	settlement
compressor no start	power supply	1. switch off 2. fuse off 3. voltage too lower	1. turn on switch 2. check and renew fuse 3. check power supply and wiring pathway
	electric component	circuit disconnection or touch badness	Check circuit,connect well
	controller component or protector	1. thermostat work but electricity off 2. high pressure work no well 3. low pressure work no well 4. electromagnetic valve close 5. start relay no work 6. operator relay work no well 7. over loading protector disconnection	1. wait for theremostat work 2. wait for action point close, pressure recovery then turn on start button 3. wait for action point close, pressure recovery 4. check eletromagnetic valve if damaged then renew 5. check ,repair or renew 6. check ,repair or renew 7. wait for work,or check

				or repair or renew
	refrigerant	refrigerant leakage		check and block leakage,repair then fill in refrigerant
	compressor	1. compressor inner mechanism trouble 2. compressor inner motor burn		1. repair and renew 2. check out reason and renew
start then soon stop,protect or work	power supply	fuse broken		check capacity and renew
	over load protector	1. over load protector setting value too low 2. electricity exceed 3. voltage too low or three phases imbalance 4. condensation no well or condensation pressure too high 5. evaporate pressure too high		1. modify setting value 2. check reason and modify 3. check reason and modify 4. check reason and modify 5. check reason and modify
	safety protector	high pressure switch work	1. mix air in system 2. condensor dirty block or environmental temperature too high 3. refrigerant exceed 4. setting value too high	1. eliminatel no refrigeration gas 2. clean condensor or reinforce ventilation 3. reduce refrigerant filling quantity 4. modify setting value
		low pressure switch work	5. refrigerant leakage or filling less quantity 6. expand valve start no well 7. setting value too high	1. repair leakage point,add refrigerant filling 2. adjust start degree or renew 3. modify setting value
	thermostat	thermostat setting improper		modify setting value

	compressor over hot	1. voltage too high or low 2. three phase voltage phase shortage 3. refrigerant not enough, motor cooling no well 4. pressure output over high 5. inhalational gas temperature too high 6. mix no refrigeration gas 7. compressor cooling capacity shortage	1. check power supply, guarantee within rated voltage ±10% 2. check switch touch point and fuse 3. fill refrigerant 4. check condensation, ventilation 5. adjust expand valve or buildup inhalation pipe heat prevervation 6. eliminate no refrigeration gas 7. reinforce ventilation,debase environment temperature
unconventional sound in running	liquid condensation	1. Stop running,liquid refrigerant keep in crooked axis cabinet,start then lubricant oil and liquid refrigerant condensed 2. refrigerant filling too much 3. expand valve open exceed ,liquid flow backwards	1. augment oil tunk,reduce liquid refrigerant flow to compressor ,when long time stop machine please run crooked axis cabinet heat element 2. reduce refrigerant 3. adjust expand valve openning degree
	refrigeration piplline	pipeline tremble	fasten pipeline
	unit foundation	installtion bolt lossen and tremble	fasten bolt,renew shakeness structure
	compressor	1. motor magnetic noise 2. link,bearing abrasion 3. mix with impurity 4. inspiration,exhaust valve disrepair.	1. check reason and renew 2. check reason and renew 3. check reason and renew 4. check reason and renew
refrigeration efficiency no well	exhaust pressure too high	1. mix no refrigeration gas 2. refrigerant filling too much 3. condensor dirty block 4. sun-light directly 5. compressor ventilation no well	1. eliminate no refrigeration gas 2. reduce refrigerant filling 3. clean condensor,boost up ventilation 4. avoid sun-light directly 5. boost up ventilation,

			avoid air recycle
	exhaust pressure too low	1. refrigerant not enough 2. environment temperature too low 3. expand valve openning exceed 4. compressor condensation capacity letdown	1. add refrigerant filling 2. reduce condensor ventilation 3. adjust expand valve openning degree 4. check compressor inspiration and exhaust valve leakage
	inspiration pressure too high	1. load exceed 2. expand valve openning degree exceed 3. compressor compress capacity letdown	1. check load capacity and adjust 2. check thermostat connection;adjust expand valve openning 3. check inspiration and exhause valve of compressor leakage
	inspiration pressure too low	1. load capacity lessen 2. evaporator frost too much 3. expand valve block or adjust no well 4. pipeline leakage or draught back pipe block	1. check load capacity and adjust 2. defrost 3. check,adjust or renew 4. check,repair filter or blocked or leakage parts

2. after-sales service

My company display showcase guarantee to keep showcase in good repair one year after sales (invoice listed date),below listed repair item should pay expense

1. Guarantee repair expire products
2. damaged in transportation or conservation not in good condition,do not operate according to manual lead to damage
3. disassembly oneself or make hold to move machine without manufacturer permission
4. damage owing to voltage exceed rated range or voltage unstable