

MIB MASTER-BILT[®] *Refrigeration Solutions*

Deluxe Ice Cream Dipping/Display Merchandisers

DD – Standard Model

DD-L – Low Glass Model

DD-LCG – Low Curved Glass Model



DD-26,46,66,88

R290

Installation & Operations Manual

Master-Bilt Products
908 Highway 15 North
New Albany, MS 38652
Phone: (800) 684-8988

TABLE OF CONTENTS

INTRODUCTION	4
STORE CONDITIONS	4
WARNING LABELS AND SAFETY INSTRUCTIONS	5
PRE-INSTALLATION INSTRUCTIONS	6
Inspection for Shipping Damage.....	6
INSTALLATION INSTRUCTIONS	7
General Instructions.....	7
Electrical.....	7
Mechanical.....	8
Startup.....	8
TEMPERATURE CONTROL	9~10
CLEANING INSTRUCTIONS	11
Can Holder Cleaning.....	11
Frost Shield Cleaning.....	11
OPERATION CONDITIONS AND PRESSURES	12
Trouble Shooting.....	12
SERVICE INSTRUCTIONS	12
CONTROLLER SENSER PROBE LOCATION	13~15
MASTER-BILT® PART NUMBERS	20
ACCESSORIES	21
SALE AND DISPOSAL	21
WIRING DIAGRAMS	22-23

INTRODUCTION

Thank you for purchasing a Master-Bilt[®] cabinet. This manual contains important instructions for installing, using and servicing a Master-Bilt[®] DD case. A parts list is included in with this manual. Read all these documents carefully before installing or servicing your equipment.

STORE CONDITIONS

The Master-Bilt[®] DD cases are designed to operate in the controlled environment of an air-conditioned store. The store temperature should be at or below 75°F and a relative humidity of 55% or less. At higher temperature or humidity conditions, the performance of these cases may be affected and the capacity diminished. It is not uncommon in a newly constructed store for the temperature and humidity to be above design conditions. These excessive conditions may produce sweating in the case until the store is operational and the ambient environment is more desirable.

The Master-Bilt[®] DD should not be positioned where it is directly exposed to rays of sun or near a direct source of radiant heat or airflow. This will adversely affect the case and will result in poor performance.



NOTICE

Read this manual before installing your cabinet. Keep the manual and refer to it before doing any service on the equipment. Failure to do so could result in personal injury or damage to the cabinet.



DANGER

Improper or faulty hook-up of electrical components of the refrigeration units can result in severe injury or death.

NEVER use an extension cord to power this unit. All electrical wiring hook-ups must be done in accordance with all applicable local, regional or national standards.



NOTICE

Installation and service of the refrigeration and electrical components of the cabinet must be performed by a refrigeration mechanic and/or a licensed electrician

The portions of this manual covering refrigeration and electrical components contain technical instructions intended only for persons qualified to perform refrigeration and electrical work.

This manual cannot cover every installation, use or service situation. If you need additional information have the serial number at hand and call or write us:

Customer Service Department
Master-Bilt Products
Highway 15 North
New Albany, MS 38652
Phone (800) 684-8988
Fax (800) 684-8988



WARNING LABELS AND SAFETY INSTRUCTIONS



This symbol is used to alert user that there is risk of fire or explosion since flammable refrigerant is used. This symbol can be observed on back or sides of cabinet.

This



symbol is the safety-alert symbol. When you see this symbol on your cabinet or in this manual, be alert to the potential for personal injury or damage to your equipment.

Be sure you understand all safety messages and always follow recommended precautions and safe operating practices.



NOTICE TO EMPLOYERS

You must make sure that everyone who installs, uses or services your cabinet is thoroughly familiar with all safety information and procedures.

Important safety information is presented in this section and throughout this section and throughout the manual. The following signal words are used in the warnings and safety messages:

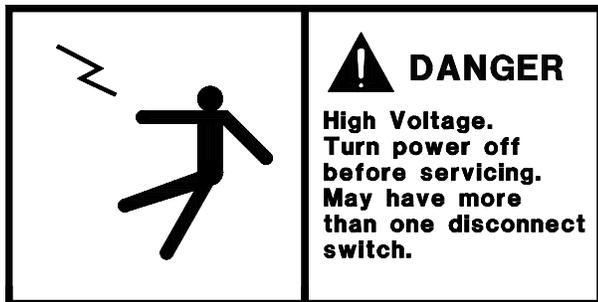
DANGER: Severe injury or death will occur if you ignore the message.

WARNING: Severe injury or death can occur if you ignore the message.

CAUTION: Minor injury or damage to your cabinet can occur if you ignore the message.

NOTICE: This is important installation, operation or service information. If you ignore the message, you may damage your cabinet.

The warning and safety labels shown throughout this manual are placed on your Master-Bilt Products cabinet at the factory. Follow all warning label instructions. If any warning or safety labels become lost or damaged, call your customer service department at (800) 684-8988 for replacements.



This label is located on top of the electrical control label and on the wiring channel.



This label is attached to the cabinet power cord on models with a power cord.

PRE-INSTALLATION INSTRUCTIONS

INSPECTION FOR SHIPPING DAMAGE

You are responsible for filing all freight claims with the delivering truck line. Inspect all cartons and crates for damage as soon as they arrive. If damage is noted to shipping crates or cartons or if a shortage is found, note this on the bill of lading (all copies) prior to signing.

If damage is discovered when the cabinet is uncrated, immediately call the delivering truck line and follow up the call with a written report indicating concealed damage to your shipment. Ask for an immediate inspection of your concealed damage item. Crating material must be retained to show the inspector from the truck line.

INSTALLATION INSTRUCTIONS

GENERAL INSTRUCTIONS

1. Be sure the equipment is properly installed by competent service people.
2. Keep the equipment clean and sanitary so it will meet your local sanitation codes.
3. Rotate your stock so that older stock does not accumulate. This is especially important for ice cream. A "First-In, First-Out" rotation practice will keep the products in good salable condition.
4. Do not place product in the case when it is soft or partially thawed. Also, product should not be put in the case for at least 6 hours after it is started.
5. Stock cases as quickly as possible, exposing only small quantities to store temperatures for short periods of time.
6. When replacing burned out LED, be sure that the electrical power to the lighting circuit is turned off.

NOTICE TO STORE OWNERS / MANAGERS

Moisture or liquid around or under the cabinet is a potential slip/fall hazard for persons walking by or working in the general area of the cabinet. Any cabinet malfunction or housekeeping problem that creates a slip/fall hazard around or under the cabinet should be corrected immediately.

If moisture or liquid is observed around or under a Master-Bilt® cabinet, an immediate investigation should be made by qualified personnel to determine the source of the moisture or liquid. The investigation should determine if the cabinet is malfunctioning or if there is a drainpipe leaking.

ELECTRICAL



Before servicing electrical components in the case, make sure all power to case is off. Always use a qualified technician.



For models with electronic ballast only:



For replacement ballast, use only ballast that complies with UL Type CC rating if unit is equipped with electronic ballast.



MECHANICAL

Remove grille and check refrigeration lines to see that they are free (not touching each other or compressor). Spin condenser fan blade to see that it is free.

Check that all service valves are open. The picture below is Master-Bilt's standard DD-Unit. The compressor is hermetic, it is internally spring mounted and ready to run.



Hermetic Compressors, Jelly Roll

Remove cabinet from crate base and slide into location. Cabinet must be level from side to side and front to back.

To comply with Sanitation requirements the cabinet must be mounted on legs (6" high min.) or casters or the base must be sealed to the floor with an N.S.F. listed silicone sealant.

STARTUP

Uncoil the lead cord and pass it through the hole provided in the grill. While the cabinet is in operation, check the voltage draw and the amperage draw versus this rating on the nameplate. Voltage should be checked at the compressor terminals while the compressor is initially starting. The unit is designed to operate at +/- 10% of 115 volts, 60 cycle, single phase. This means that the voltage should be between 103 and 126.5 volts.

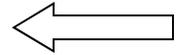
After the cabinet has pulled down in temperature to approximately 0°F at load line, check the thermostatic control by turning it to its warmest position. This should shut the compressor off. A separate 20 amp. fuse circuit for each cabinet is recommended to avoid the possibility of other appliances on a circuit from overloading and causing a malfunction. Make sure that the electrical service is grounded upon installation.

TEMPERATURE CONTROL

The **DD** cabinet has a temperature control that is adjustable from #1 (warmest setting) to #9 (coldest setting). Turn the control knob in line with the punch mark to the desired setting. The temperature control is located near the condensing unit at the bottom of the cabinet.



Punch Mark



WARMEST SETTING



COLDEST SETTING

CLEANING

WARNING: DO NOT REMOVE FROST WITH A KNIFE, PICK, OR SHARP OBJECTS. DO NOT USE ABRASIVE CLEANERS OR CAUSTIC CLEANERS OR SCOURING PADS

Every 30 to 60 days (depending on frost accumulation), the cabinet should be emptied, warmed up, and wiped down using a solution of 1 teaspoon of baking soda with 1 quart of water. This solution will help eliminate odors. Do not use strong soaps or detergents as they leave odors that can contaminate your product. The **DD** line cabinets are equipped with a floor drain that exits out the lower rear of the cabinet. This exit has a convenient garden hose fitting.

If it is not convenient to turn the power off the cabinet, lay a piece of plastic sheeting on the floor of the cabinet and scrape the frost off walls using a plastic scraper. Do not use metal scrapers. This will damage the interior paint of the cabinet.

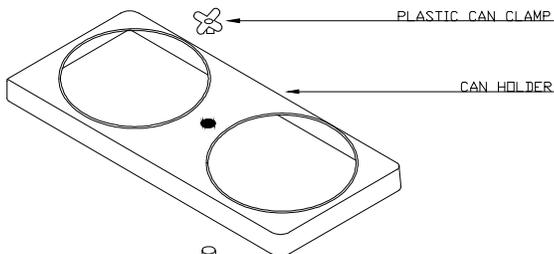
Lid Removal and Cleaning

The lid can be removed by lifting up and out (see picture). The lid is a high-impact plastic. Wash with warm soapy water or non-abrasive detergent to avoid scratching.

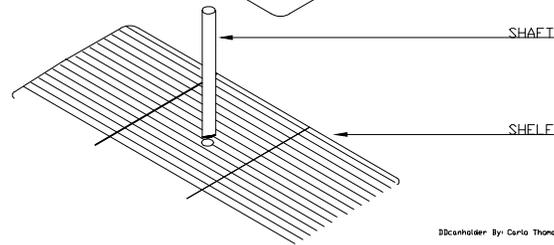


The

Can Holder Assembly Removal and Cleaning (Optional)



Remove plastic can clamp by screwing knob off the threaded shaft. Wash the can holder and can clamp with a non-abrasive detergent to maintain sanitary gloss. Remove the shaft by loosening the wing nut and unscrewing the shaft from the shelf. Wash the shaft and shelf using a non-metallic brush.



Frost-

When to 1 it by water and

Shield Removal and Cleaning (optional)

the frost-shields accumulate approximately 1/2 inch of frost (about two to three days), remove lifting up to disengage from the keyhole slot. Remove the frost by holding under running until clean. Dry and replace the frost-shield by engaging screws at the big end of the keyhole push down.

OPERATION CONDITIONS AND PRESSURES

With room ambient temperature of +80 °F and cold cabinet (unit cycling on control):

DD-66 & DD-88 with R-290a

Suction pressure – 2 to 4 psig.

Head pressure – 130 to 160 psig.

If room ambient is low, 60 °F or lower, then the suction pressure could be as low as 1 psig. Temporary block the condenser coil to raise head pressure to 1300 psig in order to verify proper charge and a suction pressure of 2 psig to 4 psig. Remove blockage after pressure check.

DD-26 & DD-46 with R-290a

Suctions pressure 1 to 5 psig

Head pressure 130 to 160 psig

If room abient is below 70 °F temporarily block the condenser coil to raise the head pressure to 130 psig and recheck suction pressure. Add R-290a if suction pressure is lower than 1 psig.

SERVICE INSTRUCTIONS (Trouble Shooting Guide)

1. High head pressure and high back pressure:
 - A. Condenser coil clogged or restricted.
 - B. Condenser fan motor defective.
 - C. Air in the system.
 - D. Refrigeration overcharge.
2. Low back pressure and low head pressure:
 - A. Capillary tube restriction.
 - B. Refrigerant undercharged.
 - C. Leak in system.
 - D. Moisture in system.
3. Pressures normal – cabinet warm:
 - A. Refrigerant undercharged.
 - B. Thermostat set too warm.
4. Compressor starts and runs – but cycles on overload:
 - A. Low voltage.
 - B. Overload protector defective.
 - C. High head pressure (see#1).
5. Compressor will not start – hums, but cycles on overload:
 - A. Low voltage.
 - B. Relay defective.
 - C. Overload defective.
 - D. High head pressure (see #1).
6. Cabinet sweating:
 - A. High ambient humidity.
7. Special service situations

Controller Sensor Probe Location

In DD-46,66 & 88 the bulbwell is a straight 3/8" copper tube placed 3" below the dog house as shown below. For DD-26 The bulb well is inverted "L" shape as shown in the picture. Please make sure the bulb well opening is properly insulated with permagum. While replacing the sensor probe please make sure the probe is inserted to the end of the bulb well till it stops. Special care needs to be taken during inserting the probe inside the bulb well so that it is not damaged.







Air Filter for DD-66 & 88 fin & tube condenser

The condenser for DD-66 & 88 is a 5mm fin and tube condenser. A special removable and reusable air filter has been provided to protect the condenser and avoid it to be blocked by dust. The filter needs to be removed and cleaned periodically for optimum performance of the unit. Find below the pictorial presentation of filter removal and reinstallation after cleaning.





Draining system

The drain outlet is as shown below in the picture.





If moisture or liquid is observed around or under a Master-Bilt® cabinet, an immediate investigation should be made by qualified personnel to determine the source of moisture or liquid. The investigation made should determine if the cabinet is malfunctioning or if there is a simple housekeeping problem.

Moisture or liquid around or under a cabinet is a potential slip/fall hazard for persons walking by or working in the general area of the cabinet.

Any cabinet malfunction or housekeeping problem that creates a slip/fall hazard around or under a cabinet should be corrected immediately

MASTER-BILT PART NUMBERS

The table below gives Master-Bilt® part numbers. Use this chart when ordering replacement parts for your

DD Standard, Low Glass and Curved Glass Models.

Description	DD-26(L)(LCG)	DD-46(L)(LCG)	DD-66(L)(LCG)	DD-88(L)(LCG)
LED Driver	23-01878	23-01878	23-01878	23-01878
LED	23-01947	23-01945	23-01947(2 REQ)	23-01950(2 REQ)
Jumper			23-01951	23-01951
Bracket/Attachment	23-01948	23-01948	23-01948	23-01948
Capillary Tube	11-01306	11-01306	11-01306 (2 REQ)	11-01306 (2 REQ)
Compressor	03-50992	03-50992	03-50996	03-50996
Condenser Coil	07-14190	07-14190	07-14186	07-14186
Condenser Fan Blade	15-13093	15-13093		
Condenser Fan Motor	13-00311	13-00311	13-13453	13-13453
Condenser Fan Motor Bracket	13-00754	13-00754		
Compressor grommet	03-50994	03-50994	03-50994	03-50994
Drier	09-09864	09-09864	09-09864	09-09864
Controller	19-14239	19-14239	19-14239	19-14239
Controller Sensor	19-14785	19-14785	19-14785	19-14785
Top Gasket	(37-01544)(37-01536)	(37-01545)(37-01537)	(37-01546)(37-01538)	(37-01547)(37-01539)
FRONT GLASS				
(Straight Glass Model)	31-03991	31-03992	31-03993	31-03994
(Low Glass Model)	31-03976	31-03977	31-03978	31-03979
(Low Curved Glass)	31-04011	31-04012	31-04013	31-04014
SIDE GLASS				
(Straight Glass Model)	31-03995	31-03995	31-03995	31-03995
(Low Glass Model)	31-03480	31-03480	31-03480	31-03480
(Low Curved Glass)	31-04015	31-04015	31-04015	31-04015
Lid Assembly	394-145A	395-145A	396-145A	397-145A
Light Switch	19-14810	19-14810	19-14810	19-14810
Shelf, Wire	33-01879	33-01879	33-01879	33-01879
Recess Bumper	29-01691	29-01691	29-01691	29-01691
Wire Harness (126" Power Cord)	21-01741	21-01741	21-01741	21-01741
Condenser Air Filter			44-01140	44-01140
Distributor			11-02006	11-02006

Accessories

Description	DD-26(L)(LCG)	DD-46(L)(LCG)	DD-66(L)(LCG)	DD-88(L)(LCG)
Can Holders –Includes White Can Covers	A394-20301	A395-20301	A396-20301	A397-20301
Can Covers				
Clear	44-00984	44-00984	44-00984	44-00984
White	44-01084	44-01084	44-01084	44-01084
Casters				
Set (4), 3" Dia.	A059-11340	A059-11340	A060-11340	A060-11340
Condiment Holders and Food Pan Display	A059-10650	A062-10650	A060-10650	A061-10650
Individual Containers for Condiment Holders (Clear)	44-01020	44-01020	44-01020	44-01020
Dipper Well w/Installation Kit	A060-20400	A060-20400	A060-20400	A060-20400
Frost Shield (Patented) Master-Bilt Exclusive	A390-11150/A394-11150	A391-11150/A395-11150	A392-11150/A396-11150	A393-11150/A397-11150
Legs 6" leg kit	A062-11270	A062-11270	A061-11270	A061-11270
DDN Flavor Tags	A062-20225	A062-20225	A062-20225	A062-20225

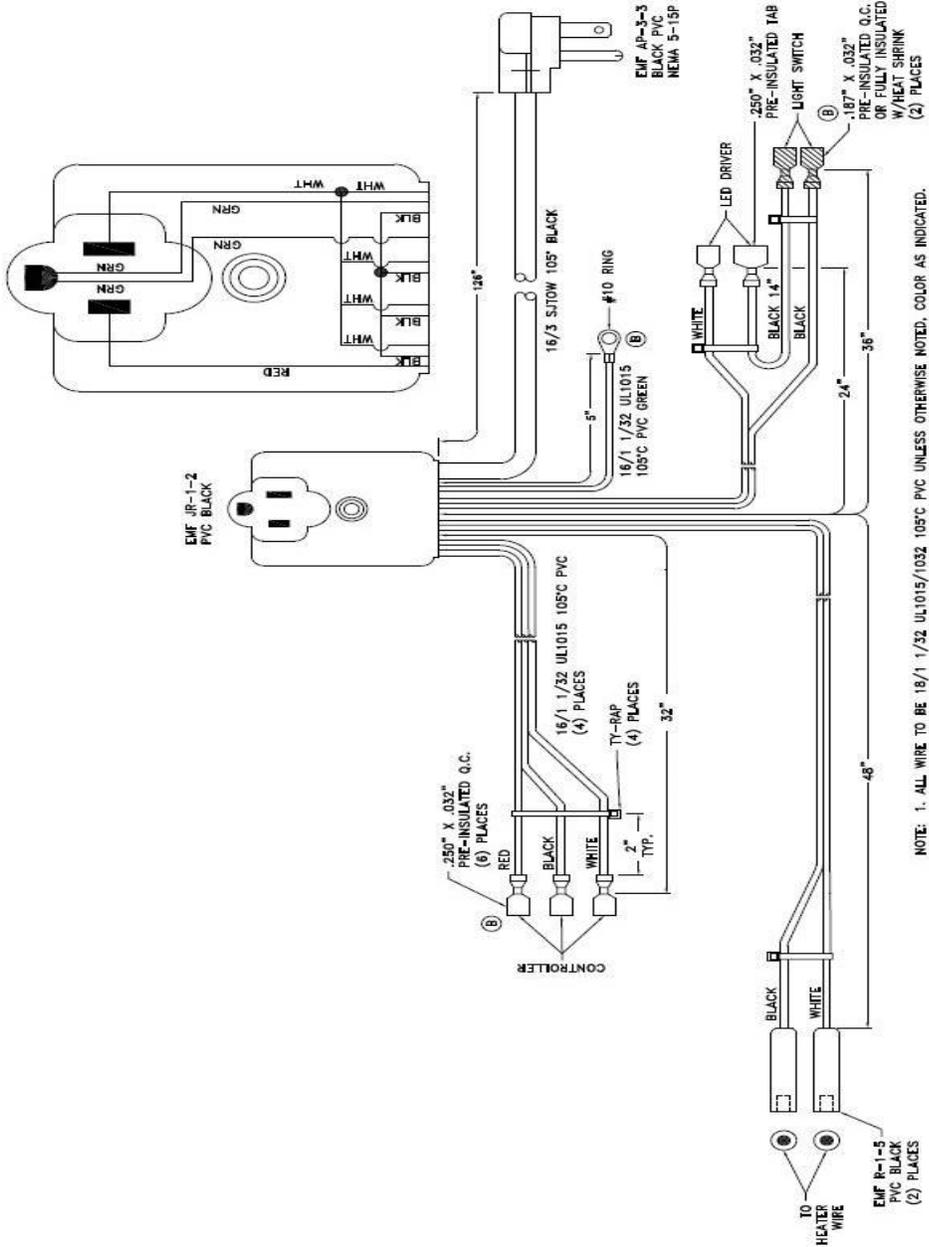
SALE AND DISPOSAL

OWNER RESPONSIBILITY

If you sell or give away your Master-Bilt® cabinet you must make sure that all safety labels and the Installation - Service Manual are included with it. If you need replacement labels or manuals, Master-Bilt will provide them free. Contact the customer service department at Master-Bilt at (800) 684-8988.

The customer service department at Master-Bilt should be contacted at the time of sale or disposal of your cabinet so records may be kept of its new location.

If you sell or give away your Master-Bilt® cabinet and you evacuate the refrigerant charge before shipment, Master-Bilt recommends that the refrigerant charge be properly recovered in compliance with section 608 of the Clean Air Act effective November 1995 and in accordance with all applicable local, regional, or national standards.

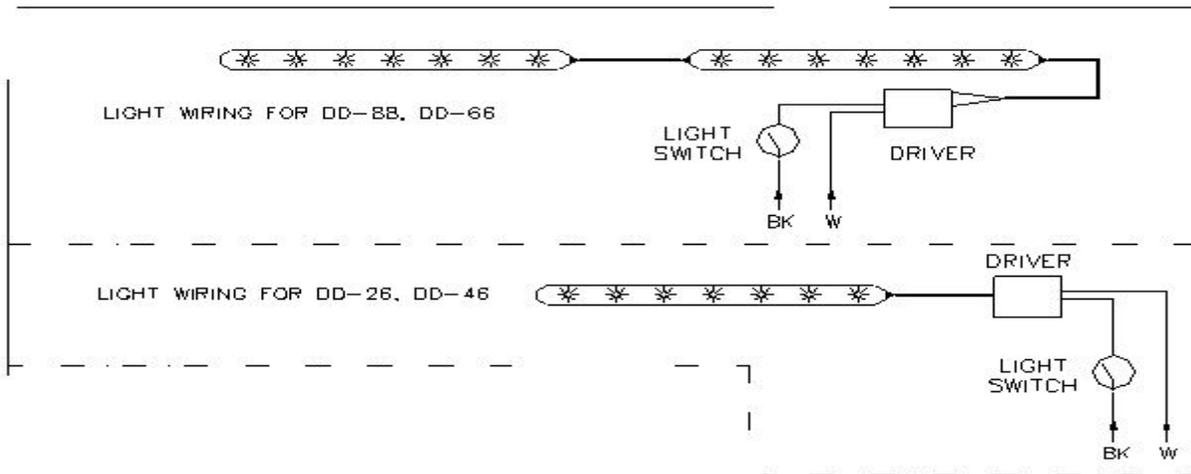


NOTE: 1. ALL WIRE TO BE 18/1 1/32 UL1015/1032 105°C PVC UNLESS OTHERWISE NOTED, COLOR AS INDICATED.
 2. MASTER-BILT P/N MUST MEET UL AND C-UL REQUIREMENTS

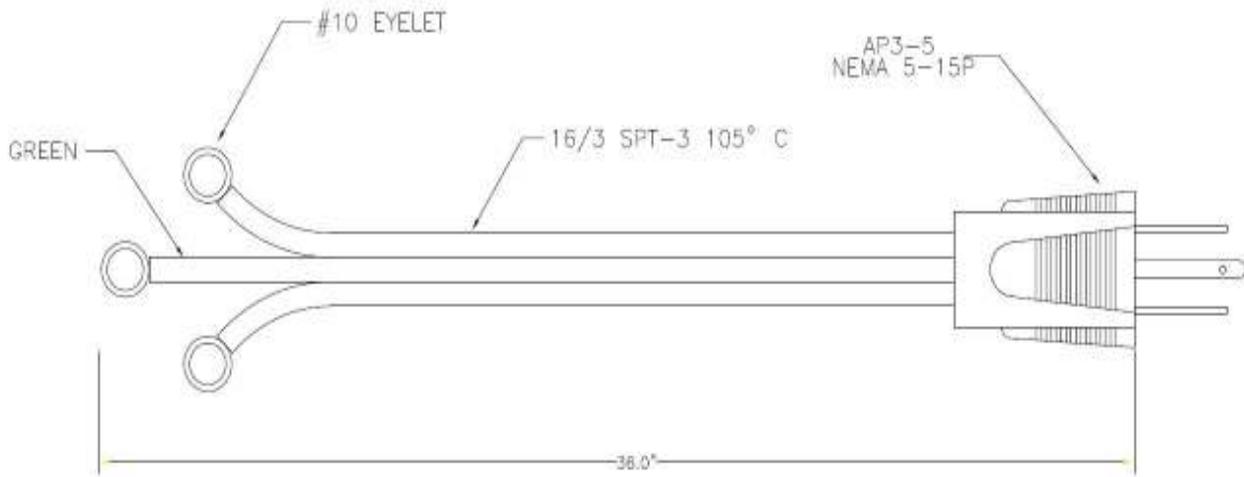
WIRING HARNESS WITH MOLDED JUNCTION ASSEMBLY

LED CONNECTION





POWER CORD TO CONNECT CONDENSING UNIT TO MOLDED JUNCTION ASSEMBLY



❖ **FOR COMPRESSOR WIRING CONNECTION, PLEASE REFER THE COMPRESSOR MANUFACTURER WIRING DIAGRAM**