INSTALLATION and OPERATING MANUAL for REACH-IN and ROLL-IN BLAST CHILLERS

This manual covers the installation, operation and routine maintenance requirements for the following products:

Reach-In Models: **WBC35, WBC60, WBC75 & WBC110**
Roll-In Models: **WMBC175, WMBC220, WMBC350, WMBC480 & WMBC660**

Provided the instructions in this Operating Manual are read and implemented correctly, the optimum performance and reliability of your equipment should be maintained.

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RECEIVING SHIPMENT

All units are performance tested and thoroughly inspected prior to shipment. Upon leaving the factory all units are in perfect condition. During the receipt process, examine the exterior of the shipment packaging for any signs of rough handling. If the cabinet is damaged, it should be noted on the delivery slip or bill or lading and signed. A claim must be filed immediately against the carrier indicating the extent and estimated cost of damage incurred.

UNPACKING

Remove all external and interior packing and accessories. Ensure all packaging is disposed of safely.

INSTALLATION

Proper installation is the first step to good operation. We recommend that your blast chiller be installed by alicensed commercial refrigeration service company.

Reach-In & Roll-In Cabinets:
The cabinet should stand level to ensure correct operation of self closing doors and proper drainage of condensate from the evaporator.

Models fitted with casters are non-adjustable, therefore a level platform/floor should be provided where the cabinet is to be located. On models fitted with adjustable legs leveling may be achieved by adjustment of the bottom section of the legs.

For top mounted refrigeration systems, please ensure there is 20" (500mm) between the top of the cabinet and ceiling for service technician access and ventilation.

If a reach-in cabinet with a self-contained top mounted refrigeration has been laid on its back or tipped, ***DO NOT*** switch "ON" immediately. Leave the cabinet in the upright position for at least 12 hours before switching "ON".

Ventilation
It is essential to ensure that the room in which the cabinet is installed is adequately ventilated. Refrigerators / Chillers generate considerable amounts of heat and, if operated in small unventilated room, especially in warm weather, this will quickly cause the room temperature to rise. This could cause the motor to overheat and possibly damage the windings. At the very least, such an installation will cause the cabinet to use an excessive amount of electricity.

Locking Casters
When a reach-in cabinet has been placed in a desired location, please ensure brakes have been placed into the "lock" position by pressing the metal bar down. Remember to release the brakes before trying to move the cabinet.

Pan Slides & Shelves:
When positioning the slides, present the slide to the racking by holding it in the opposite hand to the side of the cabinet you are installing the slides. Position the slide at a 45° (degree) angle as shown in **Figure 1**. Once in place, let the slide drop into position creating a horizontal ledge on which pans or shelves will sit.

Fig. 1
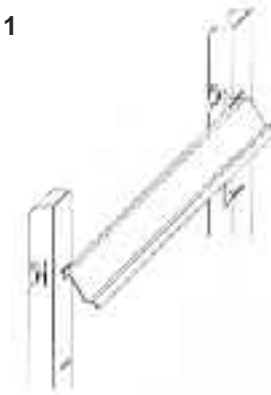
ELECTRICAL SUPPLY

Wiring should be done by a qualified electrician in accordance with local electrical codes. All models with the exception of the WBC110, WMBC175, WMBC220, WMBC350, WMBC480 & WMBC660 come fitted with a NEMA plug for safety, and must be grounded.   The WMBC110 and WMBC's are 3-phase and require connection to a suitable supply.

Voltage supplied to the cabinet must be between 208 Volts to 230 Volts only; no exceptions! WARRANTY IS NOT VALID OUTSIDE THE LIMITS OF 230 VOLTS! A surge protector is highly recommended for added protection.

Note: Please take extra precaution when cabinet is being supplied voltage to a Delta Circuit).

START-UP

Main Control Breakers

Should the equipment fail to run on initial connection, please check that all Main Control Breakers (MCBs) are in the "ON" position at the back of cabinet. **Note:** The "ON" position is confirmed by red indicators on the MCBs.

Thermometer

The controller is marked in Fahrenheit (°F) or Centigrade (°C) for the thermometer display. The thermometer should be checked daily to ensure that the equipment is maintaining the correct temperature.

If the cabinet is operating at the wrong temperature due to a default, the cabinet will alarm.

PRINCIPLES OF OPERATION

Williams blast chillers have been designed to quickly reduce the temperature of food in accordance with Department of Health guidelines on the chilling of cooked foods. All operators should be conversant with Department of Health publication, Chilled and Frozen Guidelines on Cook-Chill and Cook-Freeze Catering Systems.

Fast temperature reduction is not brought about by placing the food in a very cold cabinet like a deep freeze. This would only dry the food badly and take a very long time to reduce its temperature to the required level. The secret of fast temperature reduction is in delivering the correct blast of air and ensuring correct and unobstructed horizontal air flow inside the cabinet. This is why the equipment has the option of soft and hard facility on blast chill.

Exceptions: depending on the density types and sizes of the portions the chiller might not be capable of achieving the required guidelines, therefore, the load and/or depth of the food layers should be reduced. You may find it necessary to experiment with different amounts of food and loading methods in order to achieve the optimum performance with your blast chiller.

LOADING AND PACKING

Regulations state that product should be placed in the Blast Chiller within 30 minutes from completion of cooking. The packaging of food and the way in which it is loaded or placed within the apparatus can have a significant effect on the time within which the temperature can be reduced to the required level and the amount of food which can be processed in each chilling batch.

When blast chilling always use metal or foil containers which

are good conductors. Plastic or polyurethane containers insulate the food from the cold air. When chilling unportioned food we recommend the use of the appropriate pan that is at least 2 $\frac{1}{2}$" (63.5mm) in depth. Likewise, placing lids or covers on food will also increase the chilling time but may be of some use when processing some delicate foods to avoid dehydration.

Always load your machine in such a way that it is possible for the cold air to contact all sides of the containers. Avoid stacking containers directly on top of one another as this will drastically extend the chilling time and take special care not to block the air ducts.

Always load the machine before selecting the blast cycle. Unless it is unavoidable do not open the door of the machine while the blast cycle is engaged.

In the case of roll-in rack models, bumper bars are fitted to the walls inside the machine. This assists in the correct positioning of the rack(s) so as to avoid blocking the air flow.

FOOD STORAGE TIME

Chilled foods can be stored for up to 5 days at between 32°F (0°C) and 38°F (3°C).

OPERATION OF BLAST CHILLERS

The cabinet is delivered ready to run. Plug (or connect) to the main power supply and the cabinet is ready for use. Initially the cabinet will be in standby mode, shown by 3 dashes (- - -) in both display windows. The cabinet needs to be pre-chilled (or ran) for at least 30 minutes before being used.

Note: The control systems employed contain no user serviceable components. Instructions on setting up the control panel thermostats are available from the manufacturer. These should only be reset by a qualified service technician.

3 BASIC MODES

Timed Cycle Blast

This is the storage temperature at which food can be held and the blast chiller automatically switches into this mode at the end of each cycle. Normal storage temperature range is 34°C (1°C) to 37°F (3°C).

Storage Mode

During store mode (with no alarm condition or defrost cycle running) the left hand window will display the previous blast cycle duration and the right hand window will display the store temperature. Some chillers have more than 1 fan installed; these may not all operate during the storage mode,

giving a reduced air circulation within the chiller.

From store mode the following functions can be achieved:

1. Go into **standby** mode by pressing and holding ⏻ for 3 seconds.

2. Initiate the setting of a **blast chill** by pressing ①

3. Initiate a **manual defrost** by pressing and holding both ✗ and ① for 3 seconds.

4. Pressing ③ during a probe cycle only will cause all enabled food probes and their respective temperatures to be displayed in a scrolling process (each probe's information is displayed for 4 seconds):

FP1	03	→	FP2	02

5. Further pressing ③ during a blast cycle will cause the displays to revert back to the standard display (ie time and temperature). Also, cancelling the blast cycle or when the blast cycle ends the display will revert back to the standard food probe display.

If no button is pressed for 10 seconds or if ✗ is pressed at any time the cabinet returns to normal store mode.

Continuous Blast Cycle (Reach-in Models Only)

1. Insert the food probe into the desired product.

2. Select the desired temperature and probe blast using buttons ① and ② and confirm your selection with button ③

   It is possible to cancel at anytime by pressing ✗

3. When the LED goes out for the various food probes, this indicates that the food probe relevant to that LED indicator has achieved its target setpoint temperature. If you wish, remove the relevant food probe from the product and insert it into a newly introduced product (e.g: hot food).

   The details for a probe that has achieved its target temperature will be automatically printed and saved onto the Williams Data Logger.

4. After a short delay, the LED relevant to the probe that has been reinserted into the newly introduced product will illuminate once again to indicate that it is attempting to achieve its target temperature (chilling the product) once more.

The blast cycle will only end once all food probes have achieved the target temperature simultaneously.

Function 5 can be initiated in any operating mode except standby.

BLAST CHILL CYCLE PROGRAMMING & OPERATION

Check that the chiller is operating and at storage temperature. Load the products for chilling and refer to the previous loading information. Place the food probes into the center of the product to be chilled. Then program the cycle as follows:

1. By pressing button **'1'** to select the desired type of blast - **soft blast (4 blocks)** or **hard blast (2 blocks)**.
2. By pressing button **'2'** select timer for the desired duration of **90 minutes**, **240 minutes** or **probe** (temperature controlled cycle).
3. By pressing button **'3'** start the blast chill cycle.

If you are not happy with your selection press the ✗ button to cancel your selections and the cabinet will revert back to store mode. Pressing this button will stop the blast chiller in mid cycle and will keep the time displayed following cancellation until a new blast cycle is programmed - this will be displayed in the left window.

During defrost or blast cycle, it is not possible to re-enter the blast set mode.

When a Blast Cycle has been initiated - the following will be displayed:

00

Left Display Window - time counting up

Right Display Window - clockwise rotating LEDS signifying a cycle in progress

The blast cycle is ended under normal operation by:
- Reaching the required temperature 37°F (+3°C).
- Reaching the end of the designated time (90 or 240 minutes).
- Manual cancellation of the cycle by pressing ✗ and holding for 2 seconds.
- Putting the controller into standby mode by pressing ⏻

A blast cycle may also be terminated due to the following faults or failures:
- Over temperature fault.
- HP/LP fault (if enabled).
- Air probe (T1) failure.
- Food probe failure - terminates the blast cycle if all the food probes fail. If a 3 probe system is used, and 1 probe fails, the cycle will continue until the last working probe reaches temperature.
- Main power failure longer than 3 minutes.

Blast Control Panel

Hard or Soft Blast Chill Cycles:
During the *hard blast chill cycle* the air temperature inside the cabinet should go down to approximately 14°F (-10°C). This is for the timed chilling cycle only. Hard blast chill cycles have the potential to go down to 14°F (-10°C) in temperature.

During *soft blast chill cycle* the air temperature stays above 32°F (0°C). Soft blast chill cycles have the potential to go down to 34°F (1°C) in temperature.

DEFROST
A defrost cycle is automatic at the end of each blast chill cycle to clear any ice from the evaporator ready and to prepare for the next cycle. During storage mode a defrost will be performed automatically at the factory preset interval of 6 hours. If a blast cycle is cancelled the machine will automatically initiate a defrost.

During a defrost the display windows will indicate the following:

90	dF	*Following a blast chill cycle*
AL	dF	*An alarm condition is present*
- - -	dF	*- - - will appear in the left window if power failure happens during defrost mode for a duration of 3 minutes or greater*

A manual defrost can be initiated by pressing and holding both ✗ and ①

During the defrost cycle *__all__* fans will stop running. When the defrost cycle is finished the compressor will run for approximately 60 seconds before the fans cut in. It is safe to leave products in the cabinet during the defrost cycle; the air temperature rises slightly but will not affect the products stored.

After every defrost there is a short period; about 5 minutes during which a blast cycle cannot be programmed. This short interval is to allow defrost water to drain away from the evaporator. At the end of each cycle, a defrost will automatically clear any ice from the evaporator ready for the next cycle.

ALARMS
When a fault or adverse operational condition arises, an audible and visual alarm will be initiated:

| AL | 03 | *General alarm in left window / right window will show mode (storage temperature / blast or defrost)* |
| - - - | dF | *Mains failure alarm in left window / right window will show mode (storage temperature / defrost; longer than 3 minutes)* |

The alarm will sound intermittently. Press ✗ to mute the alarm, the alarm will retrigger if the fault causing the alarm has not been addressed. The alarm mode will still be displayed.

More information on the alarm can be displayed during normal operation by accessing the diagnostic menu by pressing and holding ② for 3 seconds.

| AL | E3 | *Left window indicates alarm - the right window indicates the type of alarm.* |

When a probe is at fault then the left window will display probe type and the right window indicates the fault type.

T1	-	air probe
T2	-	evaporator probe
T3	-	auxiliary probe (not applicable)
T4	-	Food probe 1
T5	-	Food probe 2
T6	-	Food probe 3

Alarm codes that are displayed are:

E1	-	HP / LP fault (not applicable)
E2	-	Over temperature
E3	-	Mains failure longer than 3 minutes
Hi	-	High temperature
Lo	-	Low temperature
or	-	probe over range failure

ALARMS DURING BLAST CHILL CYCLES

If the blast chill cycle has been terminated as a result of a fault causing an alarm, a defrost cycle will automatically be initiated. However, it an alarm occurs such as evaporator probe (T2) fault then the blast chill cycle will continue.

CANCELLING ALARMS

Alarms may be cancelled in the following way:

- Putting the cabinet in standby will cancel all alarms
- All alarms can be reset when the fault is removed, except the mains failure alarm. This alarm remains displayed until another blast cycle is initiated.

DOOR OPERATED FAN & CONDENSING UNIT CUT-OUT SWITCHES (if fitted)

If the door is opened during blast or store mode the refrigeration unit and evaporator fans will cut out. Both will restart on closure of door.

Note: it is not advisable to open the door during blast mode as this will effect cycle.

AIRFLOW

In the unlikely event that your blast chiller is taking longer to perform its chilling cycle, ensure that the system is operating in the correct way. A possible explanation is that the fan system has been installed the wrong way round. As a result the airflow within the blast chiller will not work as effectively as it should. See the diagram.
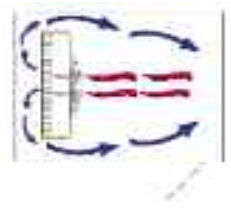
COMPLEMENTARY COMPRESSOR CONTROL

In addition to the conventional operation of the compressor, the following complementary function applies;

Compressor Rest Time

This function is to ensure that the main compressor does not run too frequently, and succumb to damage. The parameter **"crt"** can be adjusted accordingly. The compressor rest time does not apply to the beginning of a blast cycle or hot gas defrost cycle.

Compressor Duty Cycle

This function performs the task of overriding the controller's logic when an air probe **(T1)** fails, thus preserving the food until a service technician performs service work. The parameter **"cdc"** controls the number of forced compressor cycles per hour.

Example: If set to 5, the compressor (compressor used for store) will alternate, 5 minutes running, 5 minutes off and so on.

High Pressure / Low Pressure Control

To enable the High Pressure / Low Pressure control, the parameter **"PS"** must be set to **"YES"**. Once set the main compressor relay output is additionally controlled by the High Pressure / Low Pressure switch (terminals L3 and L2 in series with terminal L1). If the High Pressure / Low Pressure input goes open circuit, then the main compressor will stop running and an alarm **"E1"** will be displayed.

NB: If the High Pressure / Low Pressure input goes open circuit during a hot gas defrost, the alarm is ignored. A subsequent refrigeration cooling cycle will trigger the alarm if the input stays open circuit.

If a High Pressure / Low Pressure switch is not fitted then terminals L2 and L3 have to be linked.

THERMOSTATS & PROBES

Thermostats

The controller can, via the set of thermostat parameters, control the refrigeration for soft blast chill, hard blast chill and chill store.

All have independent parameters for set points and the two hysteresis parameters are for chill thermostats.

NB: The soft blast chill thermostat is a "delta" (floating) value to be added to the store chill thermostat set point to achieve the final soft blast chill thermostat set point.

Example: If the store chill thermostat is set to 37°F (+3°C) and the soft chill value is set to 37°F (-2°C), then the achieved soft blast thermostat will be 28°F (+1°C).

Probes

The type of probe sensor used for all probes is of the KTY-81-121 type.

The controller will always require the air (T1) and evaporator (T2) probes. The number of food probes is selectable from 0 to 3.
If the number of food probes is set to 1, then only the alarm, diagnostics and temperature controlled blast cycle will be respective to probe (T4). All other food probes (T5 and T6) will be ignored. The auxiliary probes (T3) function can be selected via the parameter "3PM" (default to "no").
NB: If any probe is enabled but not connected, a probe failure will arise.

All probes have an offset parameter to compensate for temperature drift and manufacturing tolerances of the probes.

WILLIAMS DATA LOGGER & THERMAL PRINTER

The Williams Data Logger is connected to a thermal printer which requires a 2.24" (57mm) with a diameter not greater than 1.57" (40mm) thermal printer paper roll.

The Data Logger retains approximately 7 days worth of data (depending on usage) by default. This includes all blast cycles that have been completed or cancelled, defrosts, store cycles and all alarms. All of the stored data is printed by pressing and holding the button next to 'Print' (1) for 3 seconds. A confirmation message 'Printing' will be displayed. Please see Page 12 for additional functions and features.
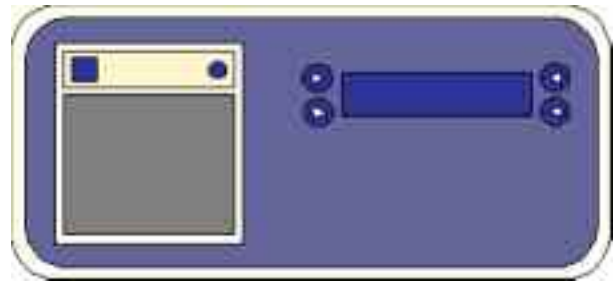
Williams Data Logger & Printer

MISCELLANEOUS FUNCTIONALITY

Condenser Clean

The condenser will require cleaning from time to time. A timer parameter "Acc" is used to log the compressor run time (units of weeks). After the preset period a warning is announced.

For the purpose of notifying the user, a designated condenser clean button and LED are used. A flashing red LED signifies that the condenser requires cleaning.

Pressing and holding the button for 3 seconds will reset the timer and the LED will stop flashing.

Display Slow Down

The purpose of applying a "display slow down" is to delay the real time temperature being displayed on the controllers front control interface. This will avoid rapid fluctuations displayed when a door is opened, or when the controller is "hunting" the instantaneous temperature.

This is achieved by introducing a thermal mass simulation routine in the software to stimulate a thermal mass inside the chiller. The parameter "SiM" (default to 3) is used, and an example being a value of 100 simulates a 0.5 litre (0.1 Gallon) bottle of water.

MAINTENANCE

The cabinets are fully automatic in operation. Cleaning and loading thermal paper is the only maintenance required. Read the following topics.

Exterior Cleaning

The exterior of the cabinet is stainless steel and if cared for correctly will keep is 'as new' finish for many years. Normal day to day cleaning should be carried out with a soft cloth and soapy water. Always wipe the cabinet vertically in the same direction as the grain in the stainless steel. While stainless steel is a very strong and robust material, the smooth finish can be spoiled by wiping against the grain.

Never use abrasive materials or cleaners, or chemical cleaners, as they can damage the surface and cause corrosion. Occasionally, the exterior should be polished with a good stainless steel polish to protect the surface.

Do not use abrasive cleaners, chemicals or scouring pads on the control panel. Clean the control panel only with a soft damp cloth. Avoid excess water on the control panel, and other areas where electrical components are fitted.

Interior Cleaning

The racking can be removed for easy cleaning (*see Figure 2*). This should be done on a regular basis with warm water and a soft cloth, dry thoroughly afterwards. To remove the racking and shelf supports follow this procedure:

First remove shelves, then supports by gripping firmly at the center and lifting slightly. Turn shelf support towards cabinet interior by pushing at the center as you twist support through 90°. The shelf support will be released. (**Note:** the supports are designed to be anti-tilt and some resistance may be experienced at first. This will be overcome with practice). When all shelves have been removed, remove the racking by lifting up and over the nylon retaining blocks.

Door Gasket

Clean the gasket weekly with warm soapy water and a soft cloth taking care not to damage it. **DO NOT** use a sharp knife to clean or scrape the gasket. Regularly check the gasket for any damage. Damage can be caused by striking the gasket with a sharp object such as the corner of a tray. Damaged gaskets do not seal correctly and can increase the amount of electricity consumed, seriously affecting the efficiency and performance of the cabinet.

Damaged gaskets are easily replaced. To fit a new gasket - simply pull out the old gasket and push the new gasket into the channel (gasket retainer) at the center and work along the gasket pushing it into the channel, continue in the same way on the other three sides, pushing the corners in last.

Condenser Cleaning

The condenser, which is part of the refrigeration unit, is located in the unit compartment and requires cleaning approximately 4 times per year or when the LED indicates. To clean the condenser, **disconnect main power supply before starting,** then brush the fins vertically with a stiff brush (taking care not to damage the fins or push dirt / dust further into the condenser coil) and vacuum the dirt / dust away. **Remember to reconnect main power supply when finished.**

TECHNICAL SERVICE & REPLACEMENT PARTS

Beverage-Air strives to provide excellent customer service along with quality equipment. To help us better assist you, a serial number and / or model number must be provided when contacting the technical service or parts department. The data plate is located inside the reach-in cabinet on the right side wall. Roll-in blast chiller data plates are placed on the exterior of the back panel that supports the controller. All serial numbers are recorded and kept indefinitely.

RULES OF THUMB

1. Pre-chill the cabinet for 30 minutes before you do first load (this is to remove interior residual heat).

2. Doubling the food thickness triples the pull-down time.

3. Don't stack food and / or containers on top or alongside or each other.

4. Covering the food increases pull-down time by 10% - 30%.

5. Pull-down rate initially is about 2°F per minute and approaching final temperature is about 2 minutes per degree Fahrenheit.

6. Factors affecting blast chiller pull-down times:
   - Entering food temperature (the hotter the initial temperature, the longer the pull-down time).
   - Final food temperature (the colder the final temperature, the longer the pull-down time).
   - Food "thickness" (the greater the distance from geometric "core" center of food to its surface pull-down time).
   - Food density (the greater the density, the longer the pull-down time).
   - Food thermal conductivity (the lower the conductivity, the longer the pull-down time).
   - Food specific heats (the higher the specific heat, the longer the pull-down time).
   - Container surface area (the smaller the surface area, the longer the pull-down time).
   - Container material (metals are conductors and render a shorter pull-down time than plastics which are insulators).
   - Covering material (metal preferred instead of plastic for reasons above).
   - Covering method-cover such as aluminium foil or a "stretch wrap film" placed in direct contact with food eliminates the "dead air space" between the cover and the food. Since "dead air space" is an insulator, elimination of reduction of it shortens pull-down time.
   - "Delta T" is temperature difference between the food and the blast of air. The greater the "Delta T" the quicker the pull-down time.
   - Air velocity (the greater the air velocity across the food, the faster the pull-down time).
   - Amount (weight) of food put in as compared to rated capacity machine. Exceeding the capacity increases the pull-down time.

BEFORE CALLING SERVICE GUIDE FOR WBC COMMON PROBLEMS
CAUTION: Disconnect power supply prior to attempting any service!

Problem	Possible Cause	Remedy
Cabinet not running and / or no 1-2-3 controller display	Circuit breaker tripped	Reset circuit breaker (make sure circuit breakers show red indicators for "ON" position)
	Power cord unplugged	Plug in power cord
	Main power supply turned "OFF"	Turn main power supply "ON"
	Improper voltage supplied to cabinet	Supply correct voltage (do not use extension cords or put other equipment on circuit etc)
	Cabinet in defrost cycle	Allow defrost cycle to finish
	Cabinet not pre-chilled prior to placing hot product load	Remove product load and pre-chill cabinet for approximately 30 minutes (only applies to cabinets that do not stay on all the time)
Condensing unit on cabinet runs for prolonged period or continuously	Excessive amount of warm product loaded in cabinet	Allow adequate time for product to cool down
	Whole product loads placed in cabinet	Portion product load(s)
	Improper use of "Soft Chill" mode	Use "Soft Chill" for delicate and less dense product loads only
	Prolonged door opening or door ajar	Make sure door is closed when not in use. Avoid prolonged door openings
	Door gasket not sealing properly	Check gasket condition. Adjust door or replace gasket
	Dirty condenser coil	Clean the condenser coil
	Improper air flow around condensing unit	Ensure adequate air space, relocate away from heat generating equipment, direct sunlight, or direct path of air conditioning or heating ducts
	Evaporator coil blocked with ice	Turn unit off and allow coil to defrost or manually force defrost (while cabinet is "ON", press and hold ■ & ▇ button for manual defrost)
Cabinet temperature too high	Poor air circulation in cabinet	Move product load away from fan(s)
	Excessive amount of warm product loaded in cabinet	Allow adequate time for product to cool down
	Prolonged door openings or door(s) ajar	Make sure door(s) are closed when not in use. Avoid prolonged door openings
	Dirty condenser coil	Clean the condenser coil
	Insufficient clearance around cabinet or excessively high ambient temperature	Ensure adequate air space, relocate away from heat generating equipment (ovens, fryers etc) and out of direct sunlight
	Evaporator coil blocked with ice	Turn unit off and allow coil to defrost or manually force defrost (while cabinet is "ON", press and hold ■ & ▇ button for manual defrost)
Cabinet is noisy	Part(s) loose	Locate and tighten loose part(s)
Product taking to long to pull-down	Product load covered	Uncover product or try to use metal pans. Refer to Page 3 or "The Guide to Cook Chill"
	Improper use of "Soft Chill" mode	Use "Hard Chill" for product loads that are of great density
Compressor will not start hums and trips circuit breaker	Dirty condenser coil	Clean the condenser coil
	Excessive heat generated from equipment nearby	Relocate cabinet, or adjacent heat generating equipment
	Voltage to cabinet too high or too low	Check and correct supply voltage
Door won't close tight	Cabinet is not level	Level cabinet by adjusting casters or legs. Shim casters or legs if necessary
Water or ice at bottom of cabinet	Product load too hot	Cool down product load before placing into cabinet (Note: product load should be no higher than 160°F)
Error code displayed	Loose or defective food probe / thermocouple. Main power failure	Press ■ (cancel) button to stop alarm sound off
Thermal printer paper not feeding or printing tickets	Thermal printer paper jamming, not straight or properly seated. Printer paper spool is finished	Reload paper

OPERATING / ENGINEERS MANUAL for
WILLIAMS DATA LOGGER (W.D.L) with PRINTER MODULE
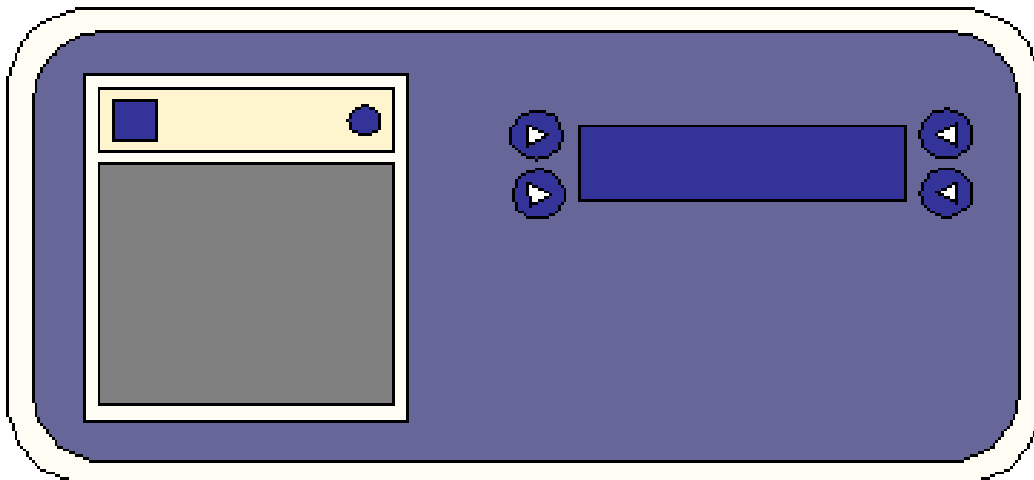
2.0 SPECIFICATION

2.1 POWER SUPPLY
The Williams Data Logger (W.D.L) is supplied with a 12VDC from a Switch-mode power supply (S.M.P.S).

2.2 PRINTER PAPER ROLL
The W.D.L is connected to a thermal printer which requires a (57mm / 2.24" with a diameter not greater than 40mm) thermal printer paper roll.

2.3 I.P (INGRESS PROTECTION) RATING
The W.D.L and printer module are protected by a polycarbonite hinged cover that has an IP rating of 65 when in the closed position.

2.4 HARDWARE AMBIENT OPERATING LIMITS
The printer and W.D.L are guaranteed to operate in an ambient temperature between **-10°C / 14°F and 50°C / 122°F** in a **15 to 80% of relative humidity**.

3.0 OPERATION OVERVIEW

3.1 DISPLAYS DURING CABINET OPERATION
When an operation cycle (e.g.- timed blast) has been initiated, the W.D.L will display information relevant to that cycle (as shown below).

3.1.1 Timed and Temperature Based Blast Cycle
The screens shown below will be displayed during a timed blast and temperature based blast cycle. The W.D.L can still be used during operation (e.g.- parameters can be accessed, stored data can be viewed etc.).
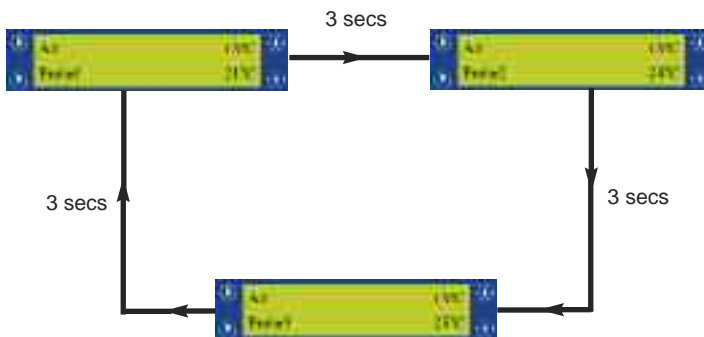
3.1.2 Defrost
The screen shown below is displayed during a defrost cycle. The W.D.L can still be used during operation (e.g.- parameters can be accessed, stored data can be viewed etc.).

3.2 DATA RECORDING MODE
The W.D.L is used to record the controllers status and the temperature measured by the selected probe (through a parameter) every 5 seconds.

3.2.1 Alarms
If an alarm occurs, the time, date, controller status and temperature are recorded into the W.D.L's memory and printed immediately on a ticket.

- Power Failure   =   PWF
- High Temperature   =   HI_T
- All Other Alarms   =   ALM

3.2.2 Blast Mode (Time)
The time, date and temperature of the Air probe at the beginning and the end of the blast cycle are recorded.

3.2.3 Blast Mode (Temperature)
The threshold duration is recorded, i.e. the time taken for the food probe temperature to reach the setpoint from the highest recorded temperature.

If a blast cycle is not active, the average hourly temperature and any alarms are stored while the recording is taken.

3.3 DATA STORAGE
Data recorded is stored on the W.D.L automatically and can be printed at anytime manually.

3.4 DISPLAY MODE INDICATIONS
The current cabinet status will be displayed in the top right-hand corner of the default display screen during operation.

3.4.1 Standby
When the W.D.L is in standby, '**- - -**' will be displayed.

3.4.2 Temperature Logging
The current internal cabinet temperature (e.g. **'39°F / 4°C'**) will be displayed.

3.4.3 Defrost
A defrost or recovery period is indicated by '**dF**' being displayed (see section 3.1.2 for more details).

3.4.4 Communication Error

In the event of a communication error, **'Err'** is displayed. See section 3.6 for more details should this occur.

3.5 RESOLVING A COMMUNICATION ERROR

In the event of a communication error, 'Err' is displayed on the top right of the W.D.L. If this should happen, check that the data cable is not damaged and is connected properly and, that the assigned cabinet address parameters on the Williams Easy Blast (W.E.B) (parameter "nr") controller and W.D.L (parameter "Cab.ADR") are the same (see section 4.6.4).

3.6 BACKLIGHT AND DISPLAY

The backlight will remain on permanently (even when in Standby mode). The contrast of the display can be adjusted using the W.D.L's parameters (see section 4.5.4 for more details).

4.0 DISPLAY SCREENS AND BUTTON OPERATION

4.1 SWITCHING ON THE W.D.L AND PRINTER

The data logger and printer will be switched on from Standby mode automatically when the main controller is switched on from Standby mode. For approximately 3 seconds after switching on the cabinet, '- - -' will be displayed, this indicates a standard internal self-test phase before the controller is ready for use.

4.2 DEFAULT DISPLAY SCREEN

The default display screen will show the company name and date on the left-hand side, the current cabinet status and time are displayed on the right-hand side as shown in the diagram directly below. The W.D.L will revert back to the default display automatically after 30 seconds.

Access the Main Menu (refer to diagram below) by pressing any button.

4.3 MAIN MENU SCREEN

The main menu screen allows you to select a number of parameters and operations. See below for more details and a diagram of the menu layout.

4.3.1 Printing Stored Data

The W.D.L retains approximately 7 days worth of data (depending on usage) be default. This includes all blast cycles that have been completed or cancelled, defrosts, store cycles and all alarms. All of the stored data is printed by pressing and holding the button next to **'Print'** (1) for 3 seconds. A confirmation message **'Printing'** will be displayed.

4.3.2 Viewing Stored Data

The stored data can be viewed by pressing the **'View'** (2) button. In some instances (such as when viewing blast cycle or power failure alarm information) further information is available relevant to the cycle / alarm (as shown below).

4.3.2.1 Blast Cycle Extended Information

View the stored data by pressing the **'View'** (2) button (as shown below).

By pressing and holding the **'V'** (4) button, it is possible to view the extended information relevant to the cycle (as shown below).
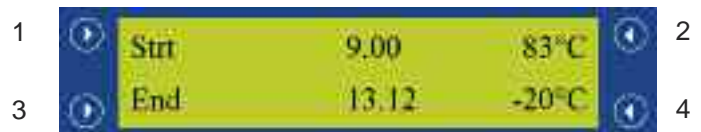
By pressing and holding the **'V'** (4) button for 3 seconds or more, the start temperature and duration for each enabled food probe will be displayed. The display will automatically cycle to the next food probe after 3 seconds (as shown below).
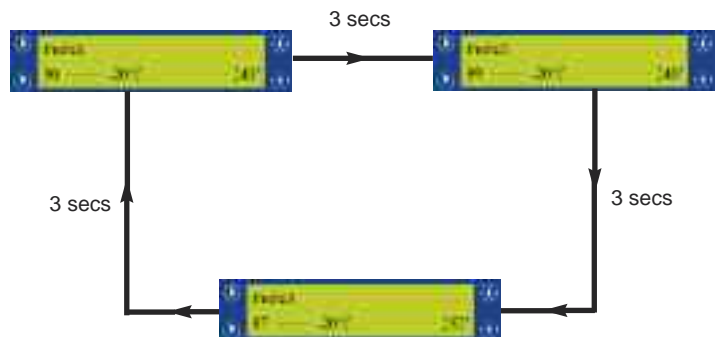
The display will exit the advanced information as soon as the **'V'** (4) button is released.

4.3.2.2 Power Failure Alarm Extended Information
View the stored data by pressing the **'V'** (4) button (as shown below).

By pressing and holding the **'V'** (4) button, you are able to see exactly when the power failure occurred and when the power supply was re-established (as shown below).

4.4 MAIN SETUP MENU
The main setup menu (as shown in the diagram below) can be accessed by pressing the **'Settings'** (4) button ont he main menu (see section 4.3 diagram for more details).

4.4.1 Clearing Stored Data
It is possible to clear the stored data by pressing and holding **'Rst Data'** (4) for 3 seconds. The confirmation message **'Data Deleted'** will be displayed to show that the data deletion has been successful.

4.4.2 Setting the Time and Date
The time and date setup menu can be accessed by pressing the **'Time'** (2) button. The screen shown below will be displayed.

Use the '⟶ ' (2) and '⟵ ' (1) buttons to scroll forwards and backwards between Hour, Minute, Day. Month and Year. Adjust the selected Hour, Minute, Day etc by pressing the **'Set'** (4) button whilst the desired parameter is displayed. It will now be possible to adjust the value (see example below).

Use the **'+'** (2) and **'-'** (1) buttons to increase and decrease the value. When you are happy with your selection. Press the **'Ok'** (4) button to save and exit. Alternatively, press the **'<<'** (3) to cancel and exit.

4.5 ADVANCED SETUP MENU
The advanced setup menu can be accessed by pressing the **'Setup'** (1) button at the main setup menu (see section 4.4). The diagram below depicts the screen that will be displayed. Use the '⟶ ' (2) and '⟵ ' (1) buttons to scroll forwards and backwards between Tect, Date Format, Summertime, Contrast and Passcode. Adjust the selected Text, Date Format, Summertime etc by pressing the **'Set'** (4) button whilst the desired parameter is displayed. It will now be possible to adjust the selection (as shown below).

4.5.1 Language Selection
Upon entering the advanced setup menu, the language selection option will be displayed immediately (as shown in 4.5). Press the **'Set'** (4) button to access the language selection (as shown below). Use the **'+'** (2) and '-' (1) buttons to scroll forwards and backwards through the available languages. When you are happy with your selection, press the **'Ok'** (4) button to save and exit. Alternatively, press the **'<<'** (3) to cancel and exit.
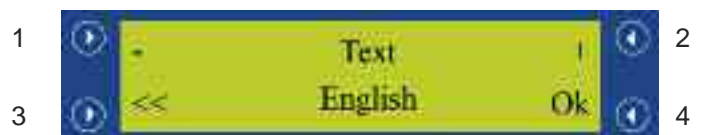
The W.D.L can be selected to operate in the following languages:

-       English
-       Deutsch (German)
-       Espanol (Spanish)
-       Francais (French)

4.5.2 Date Format Selection

The date format can be changed to suit European or American layout formats. Whilst in the Advanced Setup Menu (see section 4.5), scroll to the **'DateFormat'** parameter by using the '——►' (2) and '◄——' (1) buttons and press the **'Set'** (4) button to adjust the selection. The screen shown below will be displayed.

The W.D.L can be selected to operate in the following date formats:

- DD/MM/YY
- MM/DD/YY

Use the **'+'** (2) and **'-'** (1) buttons to scroll through the available selections.

4.5.3 Summertime Enabling / Disabling

The 'Summertime' mode is used for daylight savings. Whilst in the Advanced Setup Menu (see section 4.5), scroll to the **'Summertime'** parameter by using the '——►' (2) and '◄——' (1) buttons and press the **'Set'** (4) button to adjust the selection (as shown below).

The W.D.L can be set to daylight savings enabled / disabled as follows:

- On (+1 hour to the set time)
- Off (Time remains unadjusted)

Use the **'+'** (2) and **'-'** (1) buttons to scroll through the available selections.

4.5.4 Setting the Display Contrast

The contrast can be adjusted to make the screen more / less visible. Whilst in the Advanced Setup Menu (see section 4.5), scroll to the **'Contrast'** parameter by using the '——►' (2) and '◄——' (1) buttons and press the **'Set'** (4) button to adjust the selection (as shown below).

The contrast can be set between 0 and 50. The greater the value, the more 'clouded' the display will appear. Use the **'+'** (2) and **'-'** (1) buttons to increase / decrease the value.

4.6 ENGINEERING PARAMETERS

The engineering parameters are used to control much of the W.D.L's temperature logging and other advanced functionalities. Should these parameters require modification, it should only be undertaken by an engineer as the behaviour of the W.D.L can be greatly affected.

Whilst in the Advanced Setup Menu (see section 4.5), scroll to the **'Pass Code'** parameter by using the '——►' (2) and '◄——' (1) buttons and press the **'Set'** (4) button. A pass code will be required to access the engineering parameters (as shown below).

The pass code to enter the engineering parameters is **'127'**. Use the **'+'** (2) and **'-'** (1) buttons to increase and decrease the value and press **'Ok'** (4) to confirm the selection.

The screen shown below will be displayed to confirm that you have successfully entered the pass code and are now in the engineering parameters.

Use the '——►' (2) and '◄——' (1) buttons to scroll forwards and backwards between the avilable parameters (see page 17 for more details).

4.6.1 Setting the Company Name (Parameter 'Company name')

The company name can be adjusted accordingly to change the company name that will be displayed in the top left-hand of the Defauly Display screen (see section 4.2 for example diagram). Whilst in the engineering parameters (see section 4.6 for eaxmple diagram), scroll to the **'Company name'** parameter by using the '——►' (2) and '◄——' (1) buttons and press the **'Set'** (4) button to edit the selection (as shown below).

Use the **'+'** (2) and **'-'** (1) buttons to scroll through the available selections.

Parameter	Section Number	Min. Value	Max. Value
Company Name	4.6.1	Williams	Blank
ReadProbe	4.6.2	Air	Food3
ADR	4.6.3	00	255
Cab.ADR	4.6.4	00	255
Rec.Mode	4.6.5	Normal	FDA
BlastCycle	4.6.6	Normal	NonStop
Print blast	4.6.7	Yes	No
Store cycle	4.6.8	1	168
ChillHigh	4.6.6 and 4.6.9	20	212
Chill Low	4.6.6 and 4.6.10	-20	70
Freeze high	4.6.6 and 4.6.11	00	212
Freeze low	4.6.6 and 4.6.12	-40	30
FDA1H	4.6.6 and 4.6.13	00	212
FDA1L	4.6.6 and 4.6.14	-40	70
FDA2H	4.6.6 and 4.6.15	00	212
FDA2L	4.6.6 and 4.6.16	-40	70

4.6.2 Setting the Sample Probe
(Parameter 'ReadProbe')

The sample probe (Read probe) is the probe that is sampled to display the temperature at the top right-hand corner of the defauly display screen (see section 4.2 for example diagram). Scroll to the **'ReadProbe'** parameter by using the '——▶' (2) and '◀——' (1) buttons and press the **'Set'** (4) button to edit the selection (as shown below).

The read probe can be selected as follows:
- Air   Measures cabinet air temperature (default probe).
- Evp   Measures evaporator temperature.
- Aux   Auxiliary probe (optional and often used for additional fuctionality).
- Food1 Measures the temperature of food probe 1.
- Food2 Measures the temperature of food probe 2 (if fitted).
- Food3 Measures the temperature of food probe 3 (if fitted).

Use the **'+'** (2) and **'-'** (1) buttons to scroll through the available selections.

4.6.3 Setting the Cabinet Device Address (Parameter 'Cab.ADR')

The cabinet device address is to be set to the same value on both the W.E.B controller and the W.D.L to enable communication between them. Parameter 'nr' of the W.E.B controller (see W.E.B controller engineer's manual for more details) is to have the same value as parameter 'Cab.ADR' of the W.D.L. Scroll to the **'Cab.ADR'** parameter by using the '——▶' (2) and '◀——' (1) buttons and press the **'Set'** (4) button to edit the selection (as shown below).
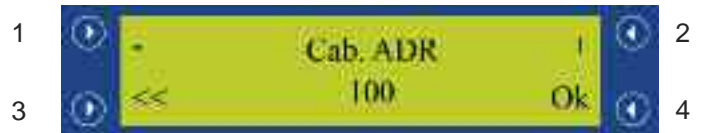
The W.D.L address can be adjusted from 0 to 255. Use the **'+'** (2) and **'-'** (1) buttons to increase and decrease the value.

4.6.4 Setting the Recording Mode (Parameter Rec.Mode)

The recording mode dictates in the way in which the W.D.L will store and print data. Scroll to the **'Rec.Mode'** parameter by using the '——▶' (2) and '◀——' (1) buttons and press the **'Set'** (4) button to edit the selection (as shown below).

The recording mode can be selected as follows:

4.6.4.1 Normal
The probe blast cycle start and end temperature for each enabled food probe and duration will be stored and printed. If the cycle is cancelled, the highest and lowest reached temperatures for each enabled food probe and duration upon cancelling the cycle are recorded.

4.6.4.2 French
If a *soft or hard blast chill cycle* is selected, the time take for each food probe to pull down the temperature assigned to parameter **'ChillHigh'** to **'ChillLow'** is stored and printed.
If a *blast freeze cycle* is selected, the time taken for each food probe to pull down from the temperature assigned to parameter **'Freeze high'** to **'Freeze low'** is stored and printed.
If a blst cycle terminates without reaching the temperature limits, the duration is not stored and is replaced by '??' when the information is printed.

4.6.4.3 FDA

Two time durations will be stored and printed for each enabled food probe. The first will be the time taken to pull down from parameter **'FDA1H'** to **'FDA1L'**, and the second is the time taken to pull down from **'FDA2H'** to **'FDA2L'**.

If a blast cycle terminates without reaching the temperature limits, the duration is not stored and is replaced by '??' when the information is printed.

Use the **'+'** (2) and **'-'** (1) buttons to scroll through the available selections.

4.6.5 Enabling / Disabling Auto. Print After A Blast Cycle (Parameter 'PrintBlast')

It is possible to enable / disable the auto print after a blast cycle by scrolling to the **'Print blast'** parameter by using the '⟶' (2) and '⟵' (1) buttons and pressing the **'Set'** (4) button to edit the selection (as shown below).

The auto print after a blast cycle mode can be selected as follows:

- Yes   A ticket will be printed automatically after a blast cycle or when a probe achieves its temperature setpoint.

- No   A ticket will not be printed automatically after a blast cycle or when a probe achieves its temperature setpoint.

4.6.6 Setting the Number of Hours of Data to be Stored (Parameter 'Store cycle')

The number of hours worth of data to be stored can be altered by adjusting parameter **'Store cycle'**. Scroll to the the **'Store cycle'** parameter by using the ⟶' (2) and '⟵ (1) buttons and pressing the **'Set'** (4) button to edit the selection (as shown in the diagram below).

The number of hours worth of stored data to be retained can be adjusted between 1 and 168. Use the **'+'** (2) and **'-'** (1) buttons to increase and decrease the value.

4.6.7 First Temperature Setpoint Used in French Blast Chill Mode (Parameter 'ChillHigh')

See section 4.6.5. The parameter can be set between 20 and 212.

4.6.8 Second Temperature Setpoint Used in French Blast Chill Mode (Parameter 'ChillLow')

See section 4.6.5. The parameter can be set between -20 and 70.

4.6.9 First Temperature Setpoint Used in French Blast Freeze Mode (Parameter 'FreezeHigh')

See section 4.6.5. The parameter can be set between 0 and 212.

4.6.10 Second Temperature Setpoint Used in French Blast Freeze Mode (Parameter 'FreezeLow')

See section 4.6.5. The parameter can be set between -40 and 30.

4.6.11 First Temperature Threshold Value 1 Used in FDA Blast Mode (Parameter 'FDA1H')

See section 4.6.5. The parameter can be set between 20 and 212.

4.6.12 Second Temperature Threshold Value 1 Used in FDA Blast Mode (Parameter 'FDA1L')

See section 4.6.5. The parameter can be set between -40 and 70.

4.6.13 First Temperature Threshold Value 2 Used in FDA Blast Mode (Parameter 'FDA2H')

See section 4.6.5. The parameter can be set between 20 and 212.

4.6.14 Second Temperature Threshold Value 2 Used in FDA Blast Mode (Parameter 'FDA2L')

See section 4.6.5. The parameter can be set between -40 and 70.

PARTS LISTS, WIRING DIAGRAMS and CONTROLLER SET-UP for REACH-IN and ROLL-IN BLAST CHILLERS

PARTS LIST FOR A WBC35

WBC35 BLAST CHILLER PARTS LIST

DRW NO		DESCRIPTION	PART NUMBER	AM NO
1	(SP)	Compressor: CAJ 4492Y R134A	COMP 345	----
1a	(SP)	Condenser: 3" x 11" x 21"	COND 250	----
1b	(SP)	Drier: Hercules/Texan Sweat	DRIER 050	----
1c		Sight Glass: 1/4" Sweat	SIGHT 020	----
2	(SP)	Receiver: RT507V-TR	RECEIVER 060	----
3	(SP)	Expansion Valve Body TEN 2 R134a	VALVE 196	----
3	(SP)	1/4" Solder Adaptor	VALVE 198	----
3	(SP)	Orifice No.00 068 - 2090	VALVE 201	----
4	(SP)	Condenser Fan Motor 16watt	MOTOR 270	----
		Condenser Fan Blade 10" 27 DEG Pitch	BLADE 070	----
5		Condenser Fan Plate	FAN PLATE 26255-1	26255-1
6	(SP)	Evaporator Fan 315mm Axial Fan (Ziehl Ebm)	MOTOR 420	----
7		Evaporator Wire Fan Guard 50mm Deep	GUARD 090	----
8		Evaporator Fan Plate	FAN PLATE 26263-3	26263-3
9		Racking (Front L & R)	LADDERACK 26263	26263
10	(SP)	Easy Blast (WEB) Food Probe	PROBE 190	----
11		Unit Cover (Top)	UNIT COVER 25596	25596
11a		Unit Cover (Bottom)	UNIT COVER 14327	14327
12		Gasket: 680mm x 430mm	GASKET 905	----
13		Hinge Plate: R7 Opal - Top	HINGE 020	----
14		Hinge: Spring Loaded	HINGE 290	----
15		WBC35 Std Door	DOOR 26251-1	26251-1
16	(SP)	Evaporator 4" x 13" x 17"	EVAP 485	----
17		Drip Tray	DRIP TRAY 26263-5	26263-5
18	(SP)	Defrost Heater 3 Bend 300w	HEATER 030	----
19		White Plug For Top Hinge	PLUG 055	----
20		Ladderack Mounting Blocks	LADDERACK 020	----
21		Screw: M6 x 12 POZI PAN ZINC T/T	SCREW 140	----
22		Controller Label	LABEL 1590	----
23	(SP)	Easy BC/BF Controller Display	THERM 610	----
23	(SP)	Easy BC/BF Controller Motherboard	THERM 620	----
23	(SP)	WUBC/WUMC T1 Air Probe	PROBE 150	----
23	(SP)	WUBC/WUMC T2 Evap Probe	PROBE 151	----
23	(SP)	WUMC 2m Controller Ribbon	THERM 630	----
24		Leg: S/S 4" Short Stud C/C Plate	LEG 050	----
25		8mm x 25mm Zinc Pozi Pan Tap Tight Screws	SCREW 180	----
26		S/S Slide 270mm WBC35	S/S SLIDE 090	------
27		Latch: Unit Cover (Latch)	LATCH 030	----
28		Strike: Unit Cover (Clip)	STRIKE 010	----
29		8mm x 20mm Zinc Set Screws	SCREW 585	----
30		Rear Cover	UNIT COVER 26249-1	26249-1
31		Hot Gas Vaporiser	HGV/335X195/88/1	----
32		Mains Lead Plug USA	PLUG 170	----
32a		Mains Lead USA	CABLE 520	----
33		Ladderack Mounting Blocks	LADDERACK 010	----
34		Door Hinge	HINGE 680	----
35		Unit Cover Brackets	BRACKET 13593	13593
36		MCB: 10A C-Type Single Pole	MCB 043	----
37		MCB: 6A C-Type Double Pole	MCB 033	----
38		CONTACT: DILM9-10 190v-50hz/220v-60hz	CONTACT 199	----
39		Fan Motor Bracket	BRACKET 13780	13780
40		Evaporator Support Bracket	BRACKET 16099	16099
41		Cage Nut M6	NUT 350	----
		PARTS NOT SHOWN ON THE PARTS EXPLOSION		
------		Kitson 14531 30210 L13C 9851	STAT 410	
------		Switch Thermal Heated 331 - 528	SWITCH 200	
------		Heater Wire 2.34m 230V (23 watts)	HEATER WIRE 400	
------		Fan Motor Bracket	BRACKET 13564	13564
		Capacitor: 400v 4uF Plastic 400VDB	CAPACITOR 803	
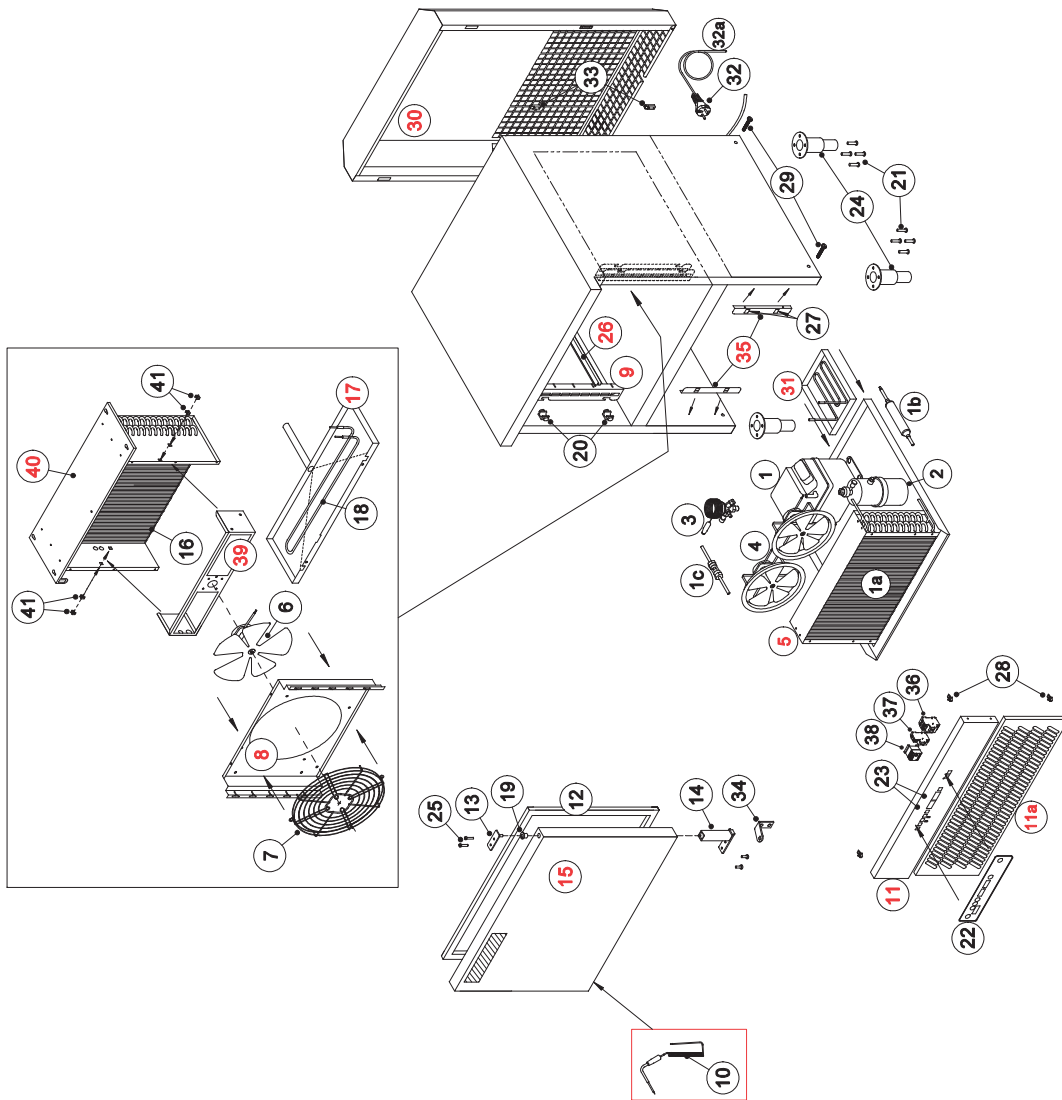
PARTS LIST FOR A WBC60

WBC60 PARTS LIST
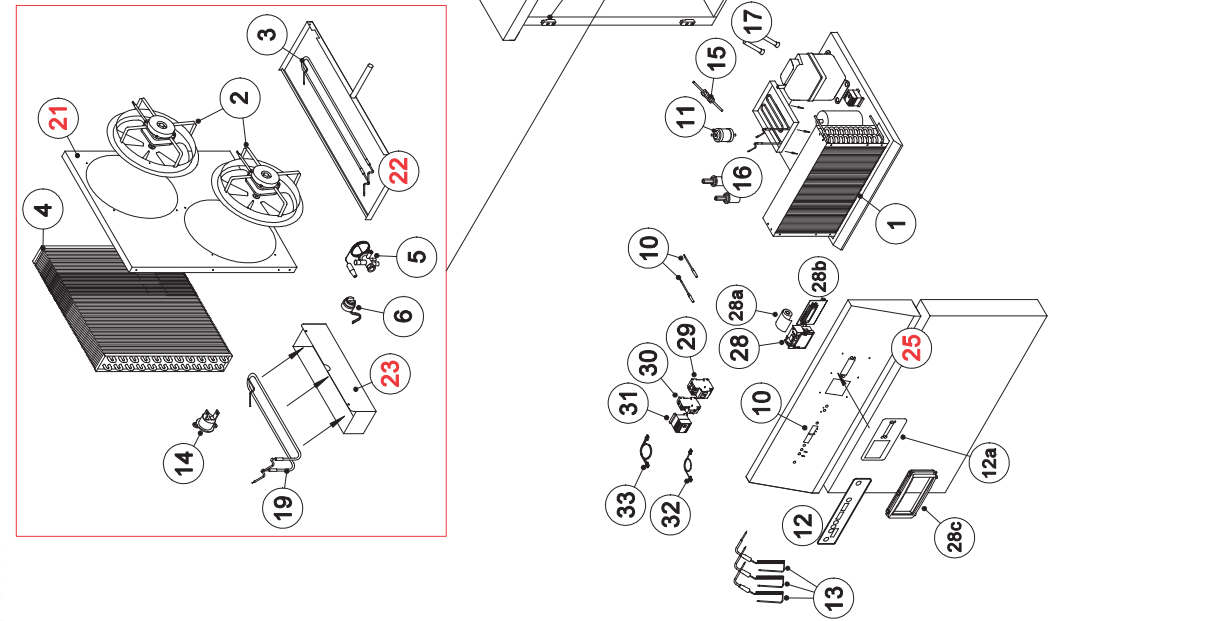
DRW NO		DESCRIPTION	PART NUMBER	AM NO
1	(SP)	Condensing Unit CAJ 4511Y HR	CONDU 530	
2	(SP)	Evaporator Fan 16watt 208V 60hz HR	MOTOR 470	
3	(SP)	Defrost Heater 300w 1 Bend	HEATER 020	
4	(SP)	Evaporator: 3 x 20 x 20	EVAP 121	
5	(SP)	Expansion Valve Body TEN 2 R134a	VALVE 196	
5	(SP)	3/8" Solder Adaptor 068 - 2060	VALVE 197	
5	(SP)	Orifice No.2 068 - 2096	VALVE 221	
6	(SP)	Kikron 14T31 30210 L13C 9651	STAT 410	
7		Gasket: 655mm x 590mm	GASKET 1430	
7a		White Plug For Top Hinge	PLUG 055	
8		Hinge: Spring Loaded	HINGE 290	
8a		Screw 8 x 1/2 POZI PAN Zinc S/T	SCREW 120	
8b		Hinge Plate: R4 Flat	HINGE 110	
8c		Hinge Plate: R7 Chrome	HINGE 023	
9		Castors: New 6" Unbraked	CASTOR 030	
9a		Castors: New 6" Braked	CASTOR 040	
9b		Screw: M6 x 25 POZI PAN Zinc T/T	SCREW 180	
10	(SP)	WEB Continuous Blast Board	THERM 740	
10	(SP)	WEB Continuous Blast Display	THERM 750	
10	(SP)	WUBC/WUMC T1 Air Probe	PROBE 150	
10	(SP)	WUBC/WUMC T2 Evap Probe	PROBE 151	
10	(SP)	WUMC 2m Controller Ribbon	THERM 630	
11	(SP)	Drier: 3/8" Suitable For R134a	DRIER 080	
12		Controller Label	LABEL 1590	
12a		Label: LAE Printer Module Blue	LABEL 1390	
13	(SP)	Easy Blast (WEB) Food Probe	PROBE 190	
14	(SP)	Switch Thermal Heated 331 - 528	SWITCH 200	
15		Sight Glass 3/8" Sweat	SIGHT 010	
16	(SP)	LP Switch Type G60 T01	STAT 814	
16	(SP)	HP Switch Type G63 T01	STAT 816	
17		1/4" Schrader Valve	VALVE 625	
18		Mains Lead	CABLE 520	
18a	(SP)	Mains Lead Plug	PLUG 170	
19		Vaporiser Heater 300w 3 Bend	HEATER 020	
20		Ladderack Blocks Type 1	LADDERACK 010	
20a		Ladderack Blocks Type 2	LADDERACK 020	
21		Evaporator Fan Plate	FAN PLATE 26224-1	26224-1
22		Drip Tray	DRIP TRAY 26224-2	26224-2
23		Vaporiser Tray	VAP TRAY 26228-1	26228-1
24		Door	DOOR 26217	26217
25		Unit Cover	UNIT COVER 28226	26226
26		Racking (State LH/RH Front or Rear Section)	LADDERACK 28218	26218
27		Trayslide	TRAYSLIDE 18882	18882
28		Industrial Panel Printer, Ticket	PRINTER 010	
28a		Thermal Printer Paper	PRINTER PAPER 010	
28b		PCB for Williams Data Logger	PCB 060	
28c		Inspection Window 248 x 128	PLASTIC WINDOW 020	
29		MCB: 10A C-Type Double Pole	MCB 043	
30		MCB: 6A C-Type Double Pole	MCB 033	
31		CONTACT: DILM9-10 190v-50hz/220v-60hz	CONTACT 199	
32		TTL Serial Cable For Data Logger	CABLE 810	
33		Printer Cable For Data Logger	CABLE 820	

PARTS LIST FOR A WBC75

WBC60 PARTS LIST

DRW NO	DESCRIPTION	PART NUMBER
1	Door	DOOR 16995-1
2	Spring Loaded Hinge	HINGE 290
2a	Nylon Door Hinge	DOOR NYLON NEW
3	Hinge Plate (Reverse)	HINGE 070
4	Service Door	DOOR 23177-1
5	Door Gasket	GASKET 900
6	Service Door Gasket	GASKET 902
7	Door Catch	DOOR CATCH 16858-4
8	Probe Holder	BRACKET 19054-1
9	Printer Cover (If Fitted)	PLASTIC WINDOW 020
10	Printer Label (If Fitted)	LABEL 1390
11	Controller Label	LABEL 1690
12	Fascia Panel (With Printer)	UNIT COVER 26238-1
12	Fascia Panel (Without Printer)	UNIT COVER 25982-1
13	Printer Mounting Plate	BRACKET 21257-1
14	Control Panel Assembly	BRACKET 16894-3
15	Logger Paper (If Fitted)	LOGGER PAPER 010
16	Web Data Logger	PCB 060
17	Web Printer (If Fitted)	PRINTER 010
18	(SP) Web Controller	THERM 750
19	Unit Cover	UNIT COVER 19052-1
20	Unit Cover Backing Plate	UNIT COVER 16994-1
21	Unit Cover Bars	BRACKET 21441-4
22	(SP) Hi/Lo Pressure Stat	SWITCH 360
23	Fixing Clip	STRIKE 010
24	Web Printer Cable (If Fitted)	CABLE 820
25	Web Serial Cable (If Fitted)	CABLE 810
26	(SP) Web Ribbon Cable	THERM 630
27	(SP) Food Probe	PROBE 060
28	Electrical Cover	COVER 16890-4
29	Terminals	VARIOUS
30	Contactor	CONTACT 109
31	10A C-Type Double Pole	MCB 043
32	10A C-Type Double Pole	MCB 053
33	Capacitor	CAPACITOR 040
34	Warning Label	LABEL 396
35	MCB Plate	BRACKET 16860-1
36	Electrical Base Plate	BRACKET 28200-1
37	(SP) Web Control Board	THERM 740
38	(SP) Power Supply	POWER SUPPLY 020
39	Con Clamp	ELKAY 010
40	3/8 Sight Glass	SIGHT 010
41	3/8 Drier	DRIER 060
42	Rear Line Cover	COVER 14508-1
43	(SP) Reciever RT50 7V TR	RECIEVER 060
44	(SP) Compressor FH4518Y & Elec Box	COMP 365
45	Condenser Fan Cowl	BAFFLE 21451-1
46	(SP) Condenser Fan & Motor	MOTOR 410
47	Condenser Fan Plate	FAN PLATE 16878-1
48	(SP) Condenser: 4" x 17" x 17.5"	COND 208
49	Plug	PLUG 160
50	Cable	CABLE 510
51	(SP) Air Probe	PROBE 150
52	(SP) Evap Probe	PROBE 151
53	Unit Base Plate	UNIT BASE 16877-1
54	(SP) Vap Tray Heater	HEATER 555
55	Vap Tray Cover	COVER 16891-1
56	Vap Tray	VAP TRAY 16995-1
57	(SP) Defrost Klixon	STAT 410
58	(SP) Thermal Exp Valve R134a	VALVE 196
59	(SP) 3/8" Solder Adaptor	VALVE 197
60	(SP) Orifice No.3	VALVE 231
61	(SP) Evaporator: 4" x 43" x 12"	EVAP 311
62	(SP) Evaporator Heater	HEATER 400
63	Evaporator Guard	GUARD 16956-1
64	Evaporator Fan Plate Hinge	HINGE 560
65	Evaporator Fan Guard	GUARD 060
66	Drip Tray	DRIP TRAY 16856-1
67	Evaporator Fan Plate	FAN PLATE 16858-1
68	(SP) Evaporator Fan & Motor	FAN 115
69	Evaporator Fan Cowl	BAFFLE 16857-1
70	Blower Plate Fixing Bkkt	BRACKET 23183-1
71	Castor	CASTOR 030
72	Castor c/w Brake	CASTOR 040
73	Hinge Plate	HINGE 060
74	Trayslides	TRAYSLIDE 16864-1
75	Ladder Racking RH Front	LADDERACK 16863-3
76	Ladder Racking LH Front	LADDERACK 16863-2
77	Ladder Racking RH Rear	LADDERACK 16863-4
78	Ladder Racking LH Rear	LADDERACK 16863-1
79	Ladderack Blocks	LADDERACK 020
80	(SP) Switch Thermal Heated	SWITCH 200
81	Fixing Latch	LATCH 010

PARTS LIST FOR A WBC110

WBC110 PARTS LIST		
DRW NO	DESCRIPTION	PART NUMBER
1	Door	DOOR 21427-1
2	Spring Loaded Hinge	HINGE 290
2a	Nylon Door Hinge	DOOR NYLON NEW
3	Hinge Plate (Reverse)	HINGE 070
4	Service Door	DOOR 22929
5	Door Gasket	GASKET 895
6	Service Door Gasket	GASKET 893
7	Door Catch	DOOR CATCH 16959-4
8	Probe Holder	BRACKET 19054-1
9	Printer Cover (If Fitted)	PLASTIC WINDOW 020
10	Printer Label (If Fitted)	LABEL 1390
11	Controller Label	LABEL 1590
12	Fascia Panel (With Printer)	UNIT COVER 26239-1
12	Fascia Panel (Without Printer)	UNIT COVER 25828-1
13	Printer Mounting Plate	BRACKET 21257-1
14	Control Panel Assembly	BRACKET 21430-1
15	Logger Paper (If Fitted)	PRINTER PAPER 010
16	Web Data Logger	PCB 060
17	Web Printer (If Fitted)	PRINTER 010
18	(SP) Web Controller	THERM 750
19	Unit Cover	UNIT COVER 21428-1
20	Unit Cover Backing Plate	UNIT COVER 21430-1
21	Unit Cover Bars	BRACKET 21441-4
22	(SP) Hi/Lo Pressure Stat	SWITCH 380
23	Fixing Clip	STRIKE 010
24	Web Printer Cable (If Fitted)	CABLE 820
25	Web Serial Cable (If Fitted)	CABLE 810
26	(SP) Web Ribbon Cable	THERM 630
27	(SP) Food Probe	PROBE 190
28	Electrical Cover	COVER 25468-1
29	Terminals	VARIOUS
30	Contactor	CONTACT 169
31	10A C-Type Double Pole	MCB 043
32	16A C-Type Triple Pole	MCB 092
33	Capacitor	CAPACITOR 040
34	Warning Label	LABEL 380
35	MCB Plate	BRACKET 18874-2
36	Electrical Base Plate	BRACKET 21440-1
37	(SP) Web Control Board	THERM 740
38	(SP) Power Supply	POWER SUPPLY 020
39	Cable Bracket	BRACKET 18874-3
40	3/8 Sight Glass	SIGHT 010
41	3/8 Drier	DRIER 080
42	Rear Line Cover	COVER 14509-1
43	(SP) Reciever RT512V-TR	RECIEVER 070
44	(SP) Compressor TFH452AZ & Elec Box	COMP 633
45	Condenser Fan Cowl	BAFFLE 21451-1
46	(SP) Condenser Fan & Motor	MOTOR 410
47	Condenser Fan Plate	FAN PLATE 16878-1
48	(SP) Condenser: 4" x 17" x 17.5"	COND 208
49	(SP) Air Probe	PROBE 150
50	(SP) Evap Probe	PROBE 151
51	Unit Base Plate	UNIT BASE 16877-1
52	(SP) Vap Tray Heater	HEATER 555
53	Vap Tray Cover	COVER 16801-1
54	Vap Tray	VAP TRAY 16895-1
55	(SP) Defrost Klixon	STAT 410
56	(SP) Thermal Exp Valve R134a	VALVE 191
57	(SP) 3/8" Solder Adaptor	VALVE 197
58	(SP) Orifice No.3	VALVE 231
59	(SP) Evaporator Heater	EVAP 348
60	(SP) Evaporator Heater	HEATER 500
61	Evaporator Guard	GUARD 21416-1
62	Evaporator Fan Plate Hinge	HINGE 560
63	Evaporator Fan Guard	GUARD 080
64	Drip Tray	DRIP TRAY 22930-1
65	Evaporator Fan Plate	FAN PLATE 21416-2
66	(SP) Evaporator Fan & Motor	FAN 115
67	Evaporator Fan Cowl	BAFFLE 16857-1
68	Blower Plate Fixing Bnkt	BRACKET 23183-1
69	Castor	CASTOR 030
70	Castor c/w Brake	CASTOR 040
71	Hinge Plate	HINGE 050
72	Trayslides	TRAYSLIDE 26505-1
73	Wire Shelf	SHELF 165
74	Ladder Racking RH Front	LADDERACK 21418-1
75	Ladder Racking LH Front	LADDERACK 21418-2
76	Ladder Racking RH Rear	LADDERACK 21418-3
77	Ladder Racking LH Rear	LADDERACK 21446-2
78	Ladderack Blocks	CASTOR 040
79	(SP) Switch Thermal Heated	SWITCH 200
80	Fixing Latch	LATCH 010

PARTS LIST FOR A WMBC175/220/350 CONTROLLER WITH POD & PRINTER

REF:

New Design

01	CONTROL BOARD	THERM 620
02	POWER SUPPLY	POWER SUPPLY 020
03	DIN RAIL	KLIPPON 250
04	CIRCUIT BREAKER (6 AMP)	MCB 077
05	CIRCUIT BREAKER (16 AMP)	MCB 052
06	BUSS BAR	MCB 119
07	CIRCUIT BREAKER (10 AMP)	MCB 042
08	CONTACTOR	CONTACT 029
09	CONTACTOR	CONTACT 011
10	EARTH TERMINAL	TERMINAL 046
11	MAINS ISOLATOR	ISOLATOR 110
12	WARNING LABEL	LABEL 335
13	MAINS ACTUATOR ROD	ISOLATOR 111
14	CONTROL BOX ASSEMBLY	02800-2
15	MAINS ACTUATOR SWITCH	ISOLATOR 020
16	ZPE 2.5 EARTH TERMINAL	TERMINAL 051
17	ZQV2.5/9 CROSS CONNECTOR	TERMINAL 089
18	ZDU 2.5 TERMINAL	TERMINAL 086
19	ZSI 2.5 FUSED TERMINAL	TERMINAL 076
20	FUSE TERMINAL END CAP	TERMINAL 108
21	TERMINAL END STOP	TERMINAL 071
22	TRUNKING	TRUNKING 020
23	BASE PLATE	25170-1
24	CONTROL BOX ASSEMBLY	24161-1
25	LOGGER PAPER	LOGGERPAPER 010
26	PRINTER	PRINTER 010
27	DATA LOGGER	PCB 060
28	FACIA PCB	THERM 610
29	FACIA PLATE	26506-1
30	OVERLAY PRINTER LABEL	LABEL 1390
31	OVERLAY LABEL	LABEL 1590
32	PRINTER COVER	PLASTIC WINDOW 020
33	SERIAL CABLE	CABLE 810
34	RIBBON CABLE	THERM 630
35	PRINTER CABLE	CABLE 820

PARTS LIST FOR A WMBC175/220/350 PANEL LAYOUT

REF:

New Design

01 DOOR WIPER RUBBER   RUBBER 020
02 DOOR WIPER BRACKET GASTRONORM   P.11920
   DOOR WIPER BRACKET COMBI   P.11958
03 1885 x 770 x 90 FLUSH DOOR GASTRONORM   P.14565 / P.14559
   1185 x 970 x 90 FLUSH DOOR COMBI   P.14566 / P.14560
04 DOOR SNUBBER   CLOSER 010
05 2090 x 450 REVERSE CORNER
06 2090 x 1070 MALE-MALE WALL
07 1152 x 587 EVAP ROOF
08 2090 x 450 CORNER
09 1152 x 787 ROOF GASTRONORM
   1152 x 987 ROOF COMBI
10 2090 x 810 MALE-MALE WALL GASTRONORM
   2090 x 1010 MALE-MALE WALL COMBI
11 2090 x 160 CORNER
12 2090 x 980 WALL
13 2090 x 920 COVED CORNER JAMB GASTRONORM
   2090 x 1120 COVED CORNER JAMB COMBI
14 DOOR GASKET GASTRONORM   GASKET 611
   DOOR GASKET COMBI   GASKET 612
15 DOOR HEATER WIRE   HEATER WIRE 500
   DOOR HEATER WIRE COMBI   HEATER WIRE 200
16 HINGE (1246 CHROME)   HINGE 026
17 1058mm SIDE FLOOR ANGLE
18 824mm REAR FLOOR ANGLE GASTRONORM
   1024mm REAR FLOOR ANGLE COMBI
19 FRONT TOP SURROUND GASTRONORM (NO POD)   P.14649
   FRONT TOP SURROUND COMBI (NO POD)   P.15286
20 SIDE TOP SURROUND (NO POD)   P.24103-1
21 SIDE TOP SURROUND (NO POD)   P.16287-1
22 SIDE TOP SURROUND (WITH POD)   P.23924-1
23 UNIT COVER GASTRONORM (WITH POD)   P.14671
   UNIT COVER COMBI (WITH POD)   P.14674
24 SIDE TOP SURROUND (WITH POD)   P.14677-1
25 TOP SURROUND STRAP GASTRONORM   P.23925-1
   TOP SURROUND COMBI   P.24104-1

PARTS LIST FOR A WMBC175/220 EQUIPMENT

REF:

New Design

01 ROOF ANGLE	23936-1
02 FRAME	FRAME 015
03 EXPANSION VALVE TES 5-7.2	VALVE 292
04 ORIFICE No.1	VALVE 294
05 VALVE BODY	VALVE 293
06 THERMOSTAT 14T31	STAT 410
07 SOLENOID COIL	SOLENOID 041
08 THERMOSTAT BI-METALLIC	STAT 251
09 SOLENOID VALVE (EVR10)	SOLENOID 025
10 EVAPORATO (6 X 66 X 650)	EVAP 329
11 EVAPORATOR FAN	MOTOR 198
12 FAN PLATE	23993-1
13 FAN PLATE HINGE	HINGE 555
14 BUMPER BAR CLIP (END)	CLIP 140
15 REAR WALL BUMPER BAR	
16 BUMPER BAR BRACKET ('A' CUP)	26319-1
17 EQUIPMENT SIDE BUMPER BAR	
18 BUMPER BAR CLIP (MIDDLE)	CLIP 150
19 TOWEL RAIL BUMPER BAR	
20 DOOR BUMPER BAR	
21 FOOD PROBE	PROBE 190
22 AIR TEMP PROBE	PROBE 150
23 EVAP TEMP PROBE	PROBE 151
24 DRIP TRAY	26705-1
25 DEFROST HEATER	HEATER 028
26 ADJUSTABLE FEET (BLACK PLUG)	FEET 060
27 ADJUSTABLE FEET (ADJUSTER)	FEET 050
28 TOP GUARD	23931-7
29 WALL WATER DEFLECTOR	26563-1
30 SIDE WALL AIR DEFLECTOR R/H	27523-1
L/H	27523-2
31 REAR WALL AIR DEFLECTOR	26562-2
32 DRIP TRAY HEATER	HEATER 070
33 PROBE HOLDER	26551-1
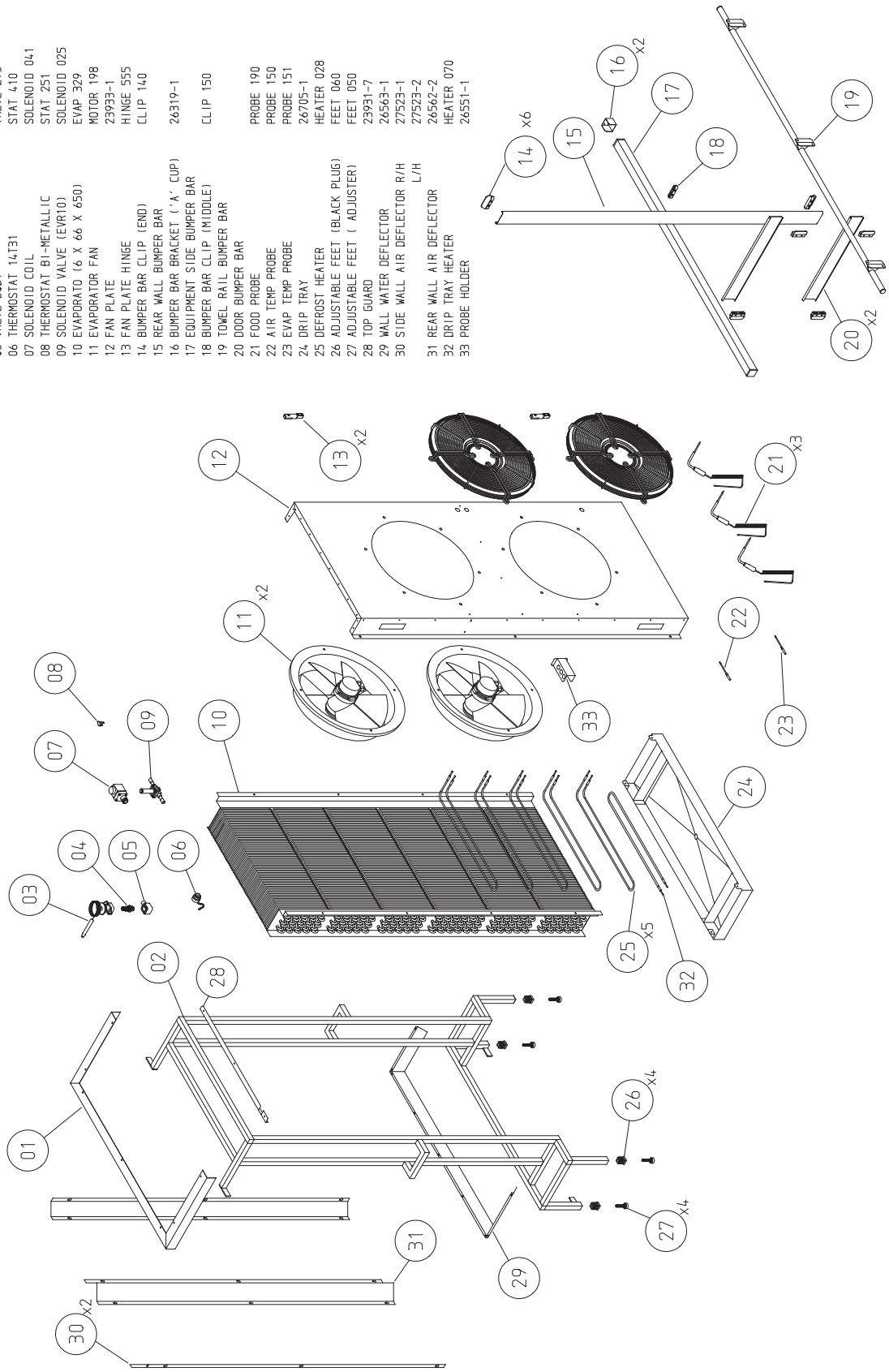
PARTS LIST FOR A WMBC175/220/350 POD EQUIPMENT

New Design

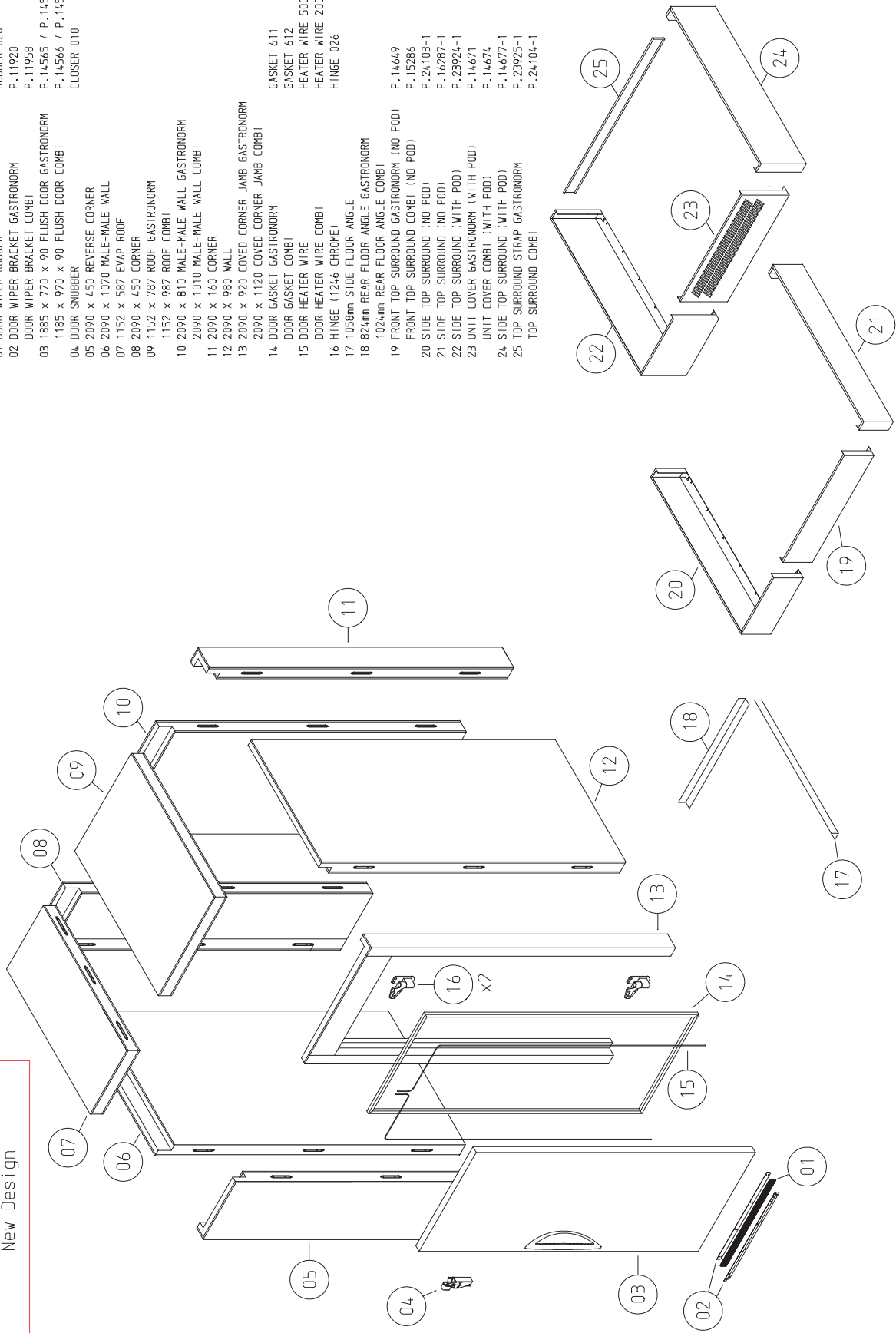|		
01	EVAPORATOR FAN 10" 12W	MOTOR 100
02	EVAPORATOR 4 x 10 x 9.75	EVAP 235
03	THERMOSTAT 14T31	STAT 410
04	WASHER	WASHER 070
05	POD LID BOLT M8 x 65	SCREW 370
06	1 FAN POD LID	21133-1/21135-1
07	FOAM GASKET TAPE	TAPE 120
08	VAP TRAY HEATER	HEATER 021
09	VAP TRAY	21021-1
10	1 FAN POD SHELL	1 FAN POD SHELL 50MM
11	EXPANSION VALVE	VALVE 196
12	VALVE ORIFICE No.1	VALVE 211
13	POD LINER (END)	04.986-1
14	DRIER	DRIER 032
15	POD LINER (SIDES)	13334-1
16	CONDENSER UNIT	CONDU 031
17	FLUSH AIR CHUTE	10524-1
18	DRIP TRAY	13335-1
19	DRIP TRAY HEATER	HEATER 060
20	FAN PLATE	10580-1
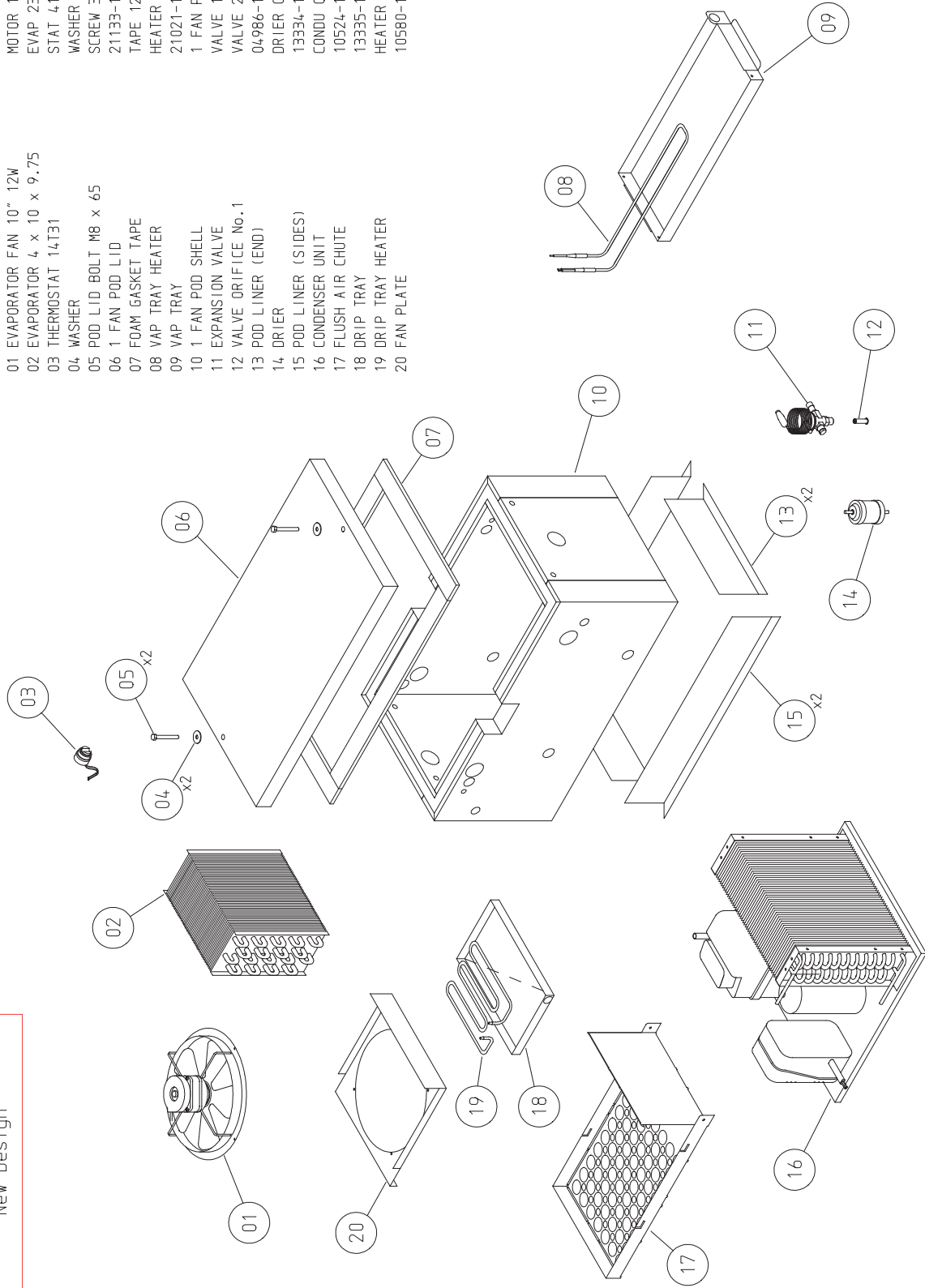
PARTS LIST FOR A WMBC175/220/350 PANEL LAYOUT

REF:

New Design

01 DOOR WIPER RUBBER   RUBBER 020
02 DOOR WIPER BRACKET GASTRONORM   P.11920
    DOOR WIPER BRACKET COMBI   P.11958
03 1885 x 770 x 90 FLUSH DOOR GASTRONORM   P.14565 / P.14559
    1185 x 970 x 90 FLUSH DOOR COMBI   P.14566 / P.14560
04 DOOR SNUBBER   CLOSER 010
05 2090 x 450 REVERSE CORNER
06 2090 x 1070 MALE-MALE WALL
07 1152 x 587 EVAP ROOF
08 2090 x 450 CORNER
09 1152 x 787 ROOF GASTRONORM
    1152 x 987 ROOF COMBI
10 2090 x 810 MALE-MALE WALL GASTRONORM
    2090 x 1010 MALE-MALE WALL COMBI
11 2090 x 160 CORNER
12 2090 x 980 WALL
13 2090 x 920 COVED CORNER JAMB GASTRONORM
    2090 x 1120 COVED CORNER JAMB COMBI
14 DOOR GASKET GASTRONORM   GASKET 611
    DOOR GASKET COMBI   GASKET 612
15 DOOR HEATER WIRE GASTRONORM   HEATER WIRE 190
    DOOR HEATER WIRE COMBI   HEATER WIRE 200
16 HINGE (1246 CHROME)   HINGE 026
17 1058mm SIDE FLOOR ANGLE
18 824mm REAR FLOOR ANGLE GASTRONORM
    1024mm REAR FLOOR ANGLE COMBI
19 FRONT TOP SURROUND GASTRONORM (NO POD)   P.14649
    FRONT TOP SURROUND COMBI (NO POD)   P.15286
20 SIDE TOP SURROUND (NO POD)   P.24103-1
21 SIDE TOP SURROUND (NO POD)   P.16287-1
22 SIDE TOP SURROUND (WITH POD)   P.23924-1
23 UNIT COVER GASTRONORM (WITH POD)   P.14671
    UNIT COVER COMBI (WITH POD)   P.14674
24 SIDE TOP SURROUND (WITH POD)   P.14677-1
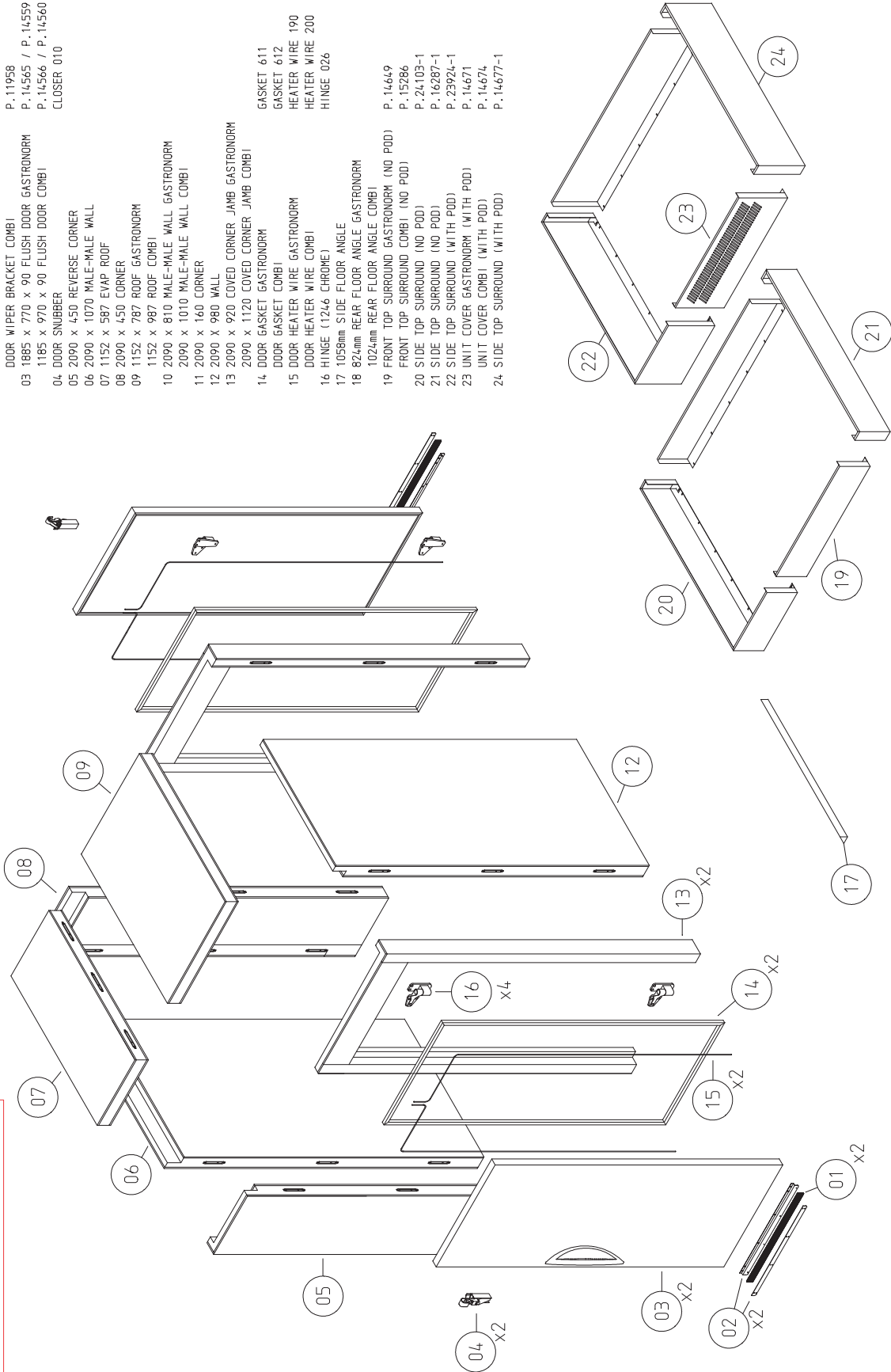
PARTS LIST FOR A WMBC350 EQUIPMENT

REF:

New Design

Ref	Description	Part No.
01	ROOF ANGLE	23936-1
02	FRAME	FRAME 015
03	EXPANSION VALVE TES 5-7.2	VALVE 292
04	ORIFICE N1.3	VALVE 291
05	VALVE BODY	VALVE 293
06	SOLENOID COIL	SOLENOID 030
07	THERMOSTAT BI-METALLIC	STAT 251
08	SOLENOID VALVE (EVR10)	SOLENOID 025
09	EVAPORATO (6 X 66 X 650)	EVAP 329
10	EVAPORATOR FAN	MOTOR 198
11	FAN PLATE	23932-1
12	FAN PLATE HINGE	HINGE 555
13	BUMPER BAR CLIP (END)	CLIP 140
14	REAR WALL BUMPER BAR	
15	BUMPER BAR BRACKET ('A' CUP)	26319-1
16	EQUIPMENT SIDE BUMPER BAR	
17	BUMPER BAR CLIP (MIDDLE)	CLIP 150
18	TOWEL RAIL BUMPER BAR	
19	DOOR BUMPER BAR	
20	FOOD PROBE	PROBE 190
21	AIR TEMP PROBE	PROBE 150
22	EVAP TEMP PROBE	PROBE 151
23	DRIP TRAY	26705-1
24	DEFROST HEATER	HEATER 028
25	ADJUSTABLE FEET (BLACK PLUG)	FEET 060
26	ADJUSTABLE FEET (ADJUSTER)	FEET 050
27	TOP GUARD	23931-7
28	WALL WATER DEFLECTOR	26563-1
29	SIDE WALL AIR DEFLECTOR R/H	27523-1
	L/H	27523-1
30	REAR WALL AIR DEFLECTOR	26562-2
31	DRIP TRAY HEATER	HEATER 073
32	PROBE HOLDER	26551-1

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PARTS LIST FOR A WMBC480/660 - PANEL LAYOUT

New Design

01	DOOR WIPER RUBBER	RUBBER 020
02	DOOR WIPER BRACKET GASTRONORM	P.11920
	DOOR WIPER BRACKET COMBI	P.11958
03	1885 x 770 x 90 FLUSH DOOR GASTRONORM	P.14565 / P.14559
	1185 x 970 x 90 FLUSH DOOR COMBI	P.14566 / P.14560
04	DOOR SNUBBER	CLOSER 010
05	2090 x 450 REVERSE CORNER	
06	2090 x 1070 MALE-MALE WALL	
07	1152 x 587 EVAP ROOF	
08	2090 x 450 CORNER	
09	1152 x 787 ROOF GASTRONORM	
	1152 x 987 ROOF COMBI	
10	2090 x 810 MALE-MALE WALL GASTRONORM	
	2090 x 1010 MALE-MALE WALL COMBI	
11	2090 x 160 CORNER	
12	2090 X 980 WALL	
13	2090 x 1100 WALL	
14	2090 x 920 COVED CORNER JAMB GASTRONORM	
	2090 x 1120 COVED CORNER JAMB COMBI	
15	DOOR GASKET GASTRONORM	GASKET 611
	DOOR GASKET COMBI	GASKET 612
16	DOOR HEATER WIRE	HEATER WIRE 500
	DOOR HEATER WIRE COMBI	HEATER WIRE 200
17	HINGE (1246 CHROME)	HINGE 026
18	1079mm FLOOR ANGLE	
19	824mm REAR FLOOR ANGLE GASTRONORM	
	1024mm REAR FLOOR ANGLE COMBI	
20	REAR SIDE TOP SURROUND (WITH POD)	P.15255-1
21	FRONT SIDE TOP SURROUND (WITH POD)	P.24509-1
22	UNIT COVER GASTRONORM (WITH POD)	P.14671-1
	UNIT COVER COMBI (WITH POD)	P.14674-1
23	FRONT SIDE TOP SURROUND (WITH POD)	P.14678-1
24	REAR SIDE TOP SURROUND (NO POD)	P.15254-1
25	FRONT SIDE TOP SURROUND (NO POD)	P.24512-1
26	FRONT TOP SURROUND GASTRONORM (NO POD)	P.14649-1
	FRONT TOP SURROUND COMBI (NO POD)	P.15286-1
27	FRONT SIDE TOP SURROUND (NO POD)	P.24512-1
28	REAR TOP SURROUND STRAP GASTRONORM	P.23925-1
	REAR TOP SURROUND STRAP COMBI	P.24104-1
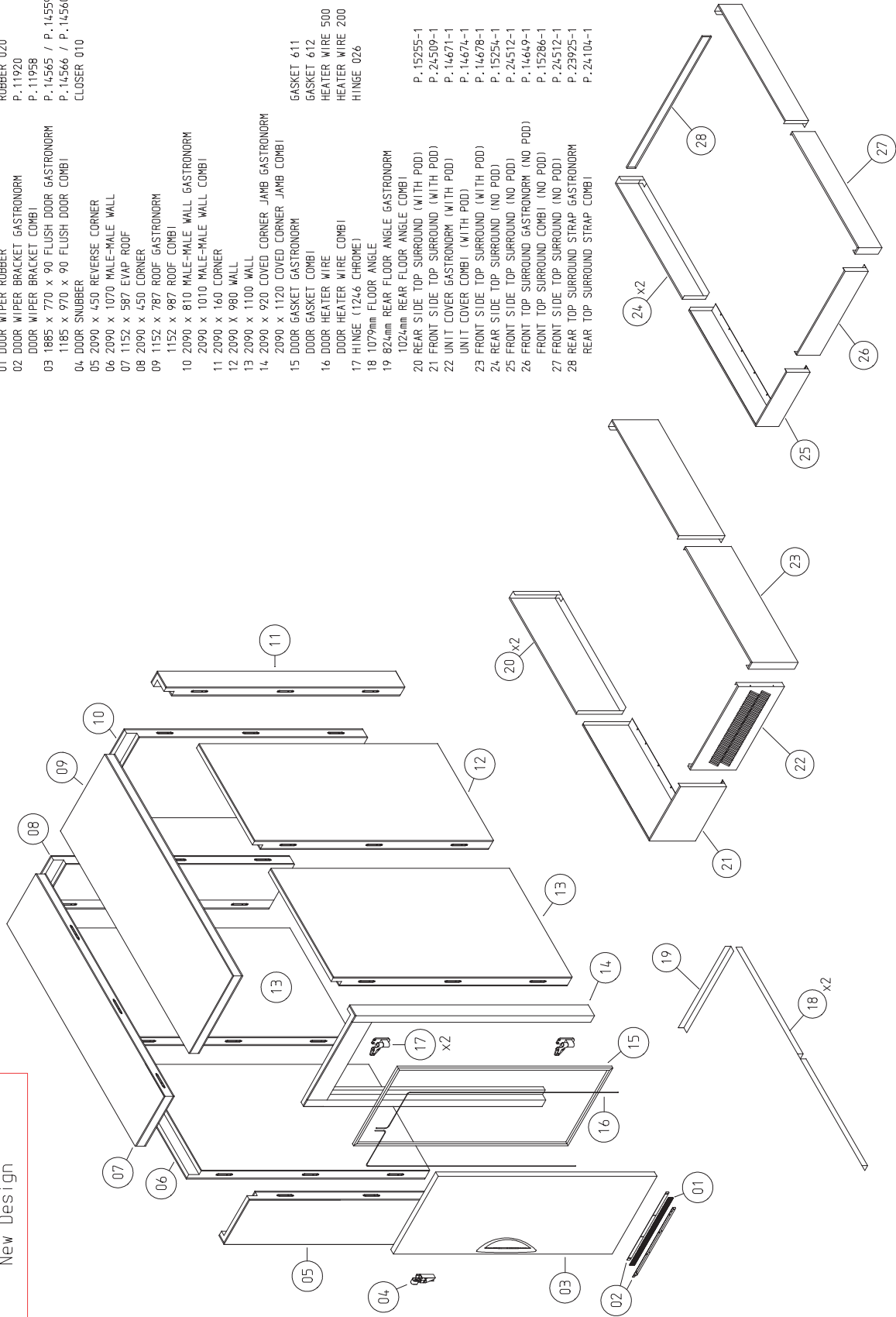
PARTS LIST FOR A WMBC480/660 - CONTROL PANEL WITH PRINTER & POD

REF:

New Design

Ref	Description	Part
01	MAINS ACTUATOR SWITCH	ISOLATOR 020
02	MAINS ACTUATOR ROD	ISOLATOR 111
03	WARNING LABEL	LABEL 335
04	CONTROL BOX LID	24515-2
05	EARTH TERMINAL	TERMINAL 046
06	MAINS ISOLATOR	ISOLATOR 110
07	Z-GV-10/3P-3TE	MCB 119
08	CIRCUIT BREAKER (6 AMP)	MCB 077
09	CIRCUIT BREAKER (16 AMP)	MCB 052
10	CIRCUIT BREAKER (10 AMP)	MCB 042
11	CONTACTOR	CONTACT 029
12	CONTACTOR	CONTACT 011
13	TERMINAL END STOP	TERMINAL 071
14	ZPE 2.5 EARTH TERMINAL	TERMINAL 051
15	ZSI 2.5 FUSED TERMINAL	TERMINAL 076
16	ZDU 2.5 TERMINAL	TERMINAL 086
17	POWER SUPPLY	POWER SUPPLY 020
18	CONTROL BOARD	THERM 620
19	BASE PLATE	24514-1
20	CONTROL BOX ASSEMBLY	24151-1
21	DATA LOGGER	PCB 060
22	PRINTER	PRINTER 010
23	PRINTER PAPER	LOGGER PAPER 010
24	RIBBON CABLE	THERM 630
25	SERIAL CABLE	CABLE 810
26	PRINTER CABLE	CABLE 820
27	FACIA PCB	THERM 610
28	FACIA PLATE	26506-1
29	OVERLAY PRINTER LABEL	LABEL 1390
30	OVERLAY LABEL	LABEL 1590
31	PRINTER COVER	PLASTIC WINDOW 020

PARTS LIST FOR A WMBC480 - EQUIPMENT LAYOUT

New Design

No.	Description	Part No.
01	ADJUSTABLE FEET (ADJUSTER)	FEET 050
02	ADJUSTABLE FEET (BLACK PLUG)	FEET 060
03	FRAME	FRAME 015
04	DIVIDING WALL	24197-1
05	EVAPORATOR (6 X 66 X650)	EVAP 329
06	DEFROST HEATER	HEATER 028
07	SOLENOID COIL	SOLENOID 030
08	EXPANSION VALVE TES 5-7.2	VALVE 292
09	ORIFICE No.2	VALVE 297
10	VALVE BODY	VALVE 293
11	THERMOSTAT BI-METALLIC	STAT 251
12	SOLENOID VALVE (EVR10)	SOLENOID 025
13	FAN PLATE HINGE	HINGE 555
14	FAN PLATE	23932-1
15	EVAPORATOR FAN	MOTOR 198
16	DRIP TRAY	26705-1
17	FOOD PROBE	PROBE 190
18	AIR TEMP PROBE	PROBE 150
19	EVAP TEMP PROBE	PROBE 151
20	EQUIPMENT SIDE BUMPER BAR	
21	BUMPER BAR BRACKET ('A' CUP)	26319-1
22	BUMPER BAR CLIP (MIDDLE)	CLIP 150
23	DOOR BUMPER BAR	
24	TOWEL RAIL BUMPER BAR	CLIP 140
25	BUMPER BAR CLIP (END)	
26	REAR WALL BUMPER BAR	
27	PLUG SHELL HDC 168 TSBU IM25G	PLUG 430
28	PLUG MALE INSERT HDC HE16MT	PLUG 410
29	PLUG FEMALE INSERT HDC 16FT	PLUG 400
30	PLUG SOCKET SHELL HDC 16B ABU	PLUG 420
31	TOP GUARD	23931-7
32	WALL WATER DEFLECTOR	26563-1
33	REAR WALL AIR DEFLECTOR R/H	26562-2
34	SIDE WALL AIR DEFLECTOR L/H	27523-1
35	DRIP TRAY HEATER	27523-2
36	PROBE HOLDER	HEATER 073
		26551-1
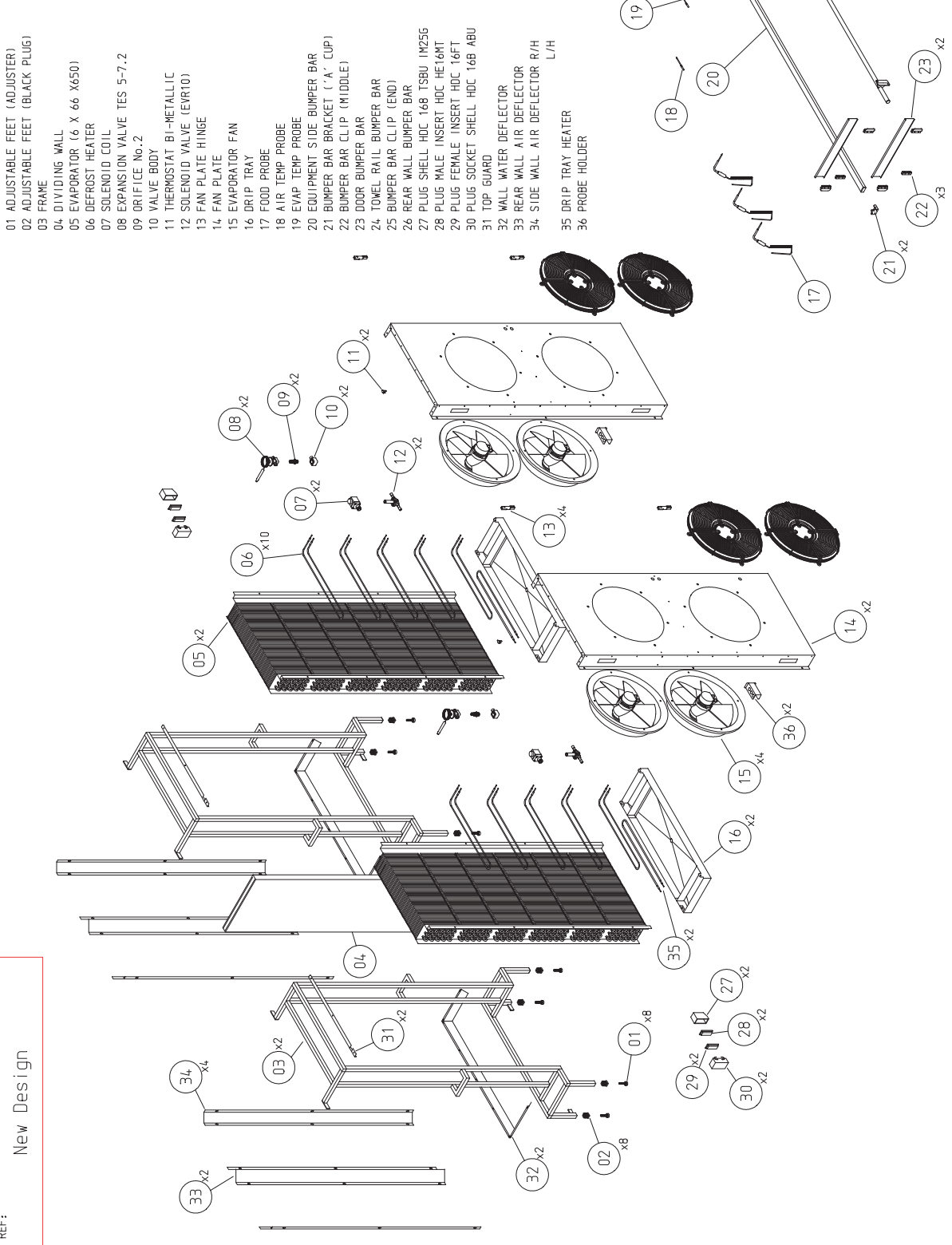
PARTS LIST FOR A WMBC660 - EQUIPMENT LAYOUT

REF:

New Design

01 ADJUSTABLE FEET (ADJUSTER)	FEET 050
02 ADJUSTABLE FEET (BLACK PLUG)	FEET 060
03 FRAME	FRAME 015
04 DIVIDING WALL	24197-1
05 EVAPORATOR (6 X 66 X650)	EVAP 329
06 DEFROST HEATER	HEATER 028
07 SOLENOID COIL	SOLENOID 030
08 EXPANSION VALVE TES 5-7.2	VALVE 292
09 ORIFICE No.2	VALVE 297
10 VALVE BODY	VALVE 293
11 THERMOSTAT BI-METALLIC	STAT 251
12 SOLENOID VALVE (EVR10)	SOLENOID 025
13 FAN PLATE HINGE	HINGE 555
14 FAN PLATE	23931-1
15 EVAPORATOR FAN	MOTOR 198
16 DRIP TRAY	26705-1
17 FOOD PROBE	PROBE 190
18 AIR TEMP PROBE	PROBE 150
19 EVAP TEMP PROBE	PROBE 151
20 EQUIPMENT SIDE BUMPER BAR	
21 BUMPER BAR BRACKET ('A' CUP)	26319-1
22 BUMPER BAR CLIP (MIDDLE)	CLIP 150
23 DOOR BUMPER BAR	
24 TOWEL RAIL BUMPER BAR	
25 BUMPER BAR CLIP (END)	CLIP 140
26 PLUG SHELL HDC 16B TSBU 1M25G	PLUG 430
27 PLUG MALE INSERT HDC HE16MT	PLUG 410
28 PLUG FEMALE INSERT HDC HE16FT	PLUG 400
29 PLUG SOCKET SHELL HDC 16B ABU	PLUG 420
30 TOP GUARD	23931-7
31 WALL WATER DEFLECTOR	26563-1
32 REAR WALL AIR DEFLECTOR	26562-2
33 SIDE WALL AIR DEFLECTOR R/H	27523-1
L/H	27523-2
34 DRIP TRAY HEATER	HEATER 073
35 PROBE HOLDER	26551-1
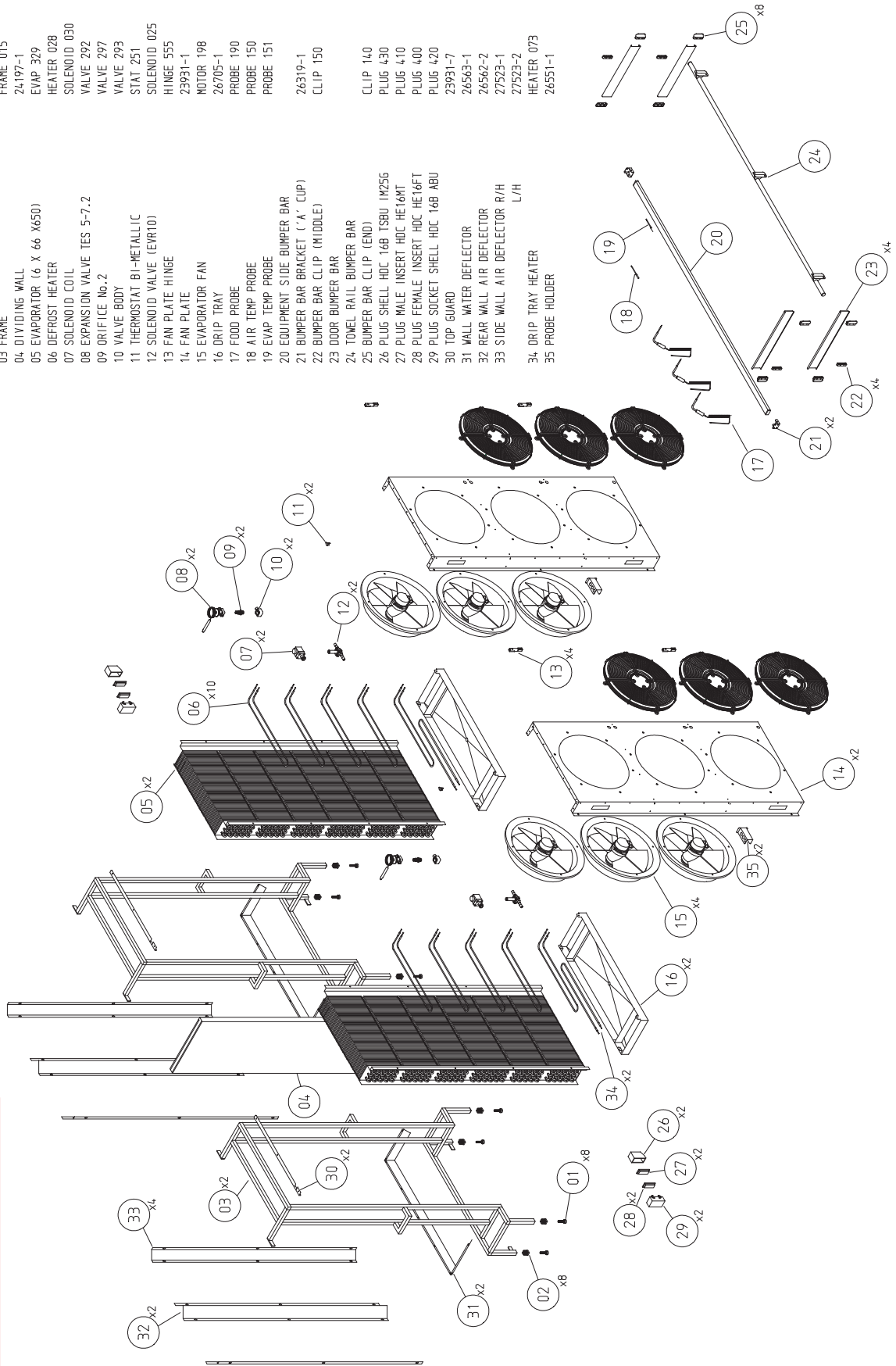
PARTS LIST FOR A WMBC480/660 - POD EQUIPMENT

REF:

New Design

01 DEFROST HEATER (500w 3 BEND)	HEATER 072
02 KLIXON	STAT 410
03 VALVE BODY	VALVE 293
04 VALVE ORIFICE No.2	VALVE 221
05 EXPANSION VALVE	VALVE 196
06 DEFROST HEATER (500w 1 BEND)	HEATER 310
07 EVAPORATOR 4 x 10 x 22	EVAP 250
08 DRIP TRAY	06149-1
09 10" 16watt RING MOUNT FAN	MOTOR 470
10 FAN PLATE	10577-1
11 POD LID BOLT M8 x 65	SCREW 370
12 2 FAN POD LID	18274-1/14548-1
13 FOAM GASKET TAPE	TAPE 120
14 2 FAN POD SHELL	2 FAN POD SHELL 50mm
15 VAP TRAY HEATER (460w 5 BEND)	HEATER 060
16 VAP TRAY	21021-1
17 VAP TRAY KILIXON	STAT 015
18 POD LINER SIDE	04985-1
19 FLUSH AIR CHUTE	06198-1
20 POD LINER END	04986-1
21 DRIER	DRIER 080
22 CONDENSING UNIT (CAJ4492YHR)	CONDU 045
23 JUNCTION BOX	BOX 025

34

REF:

New Design
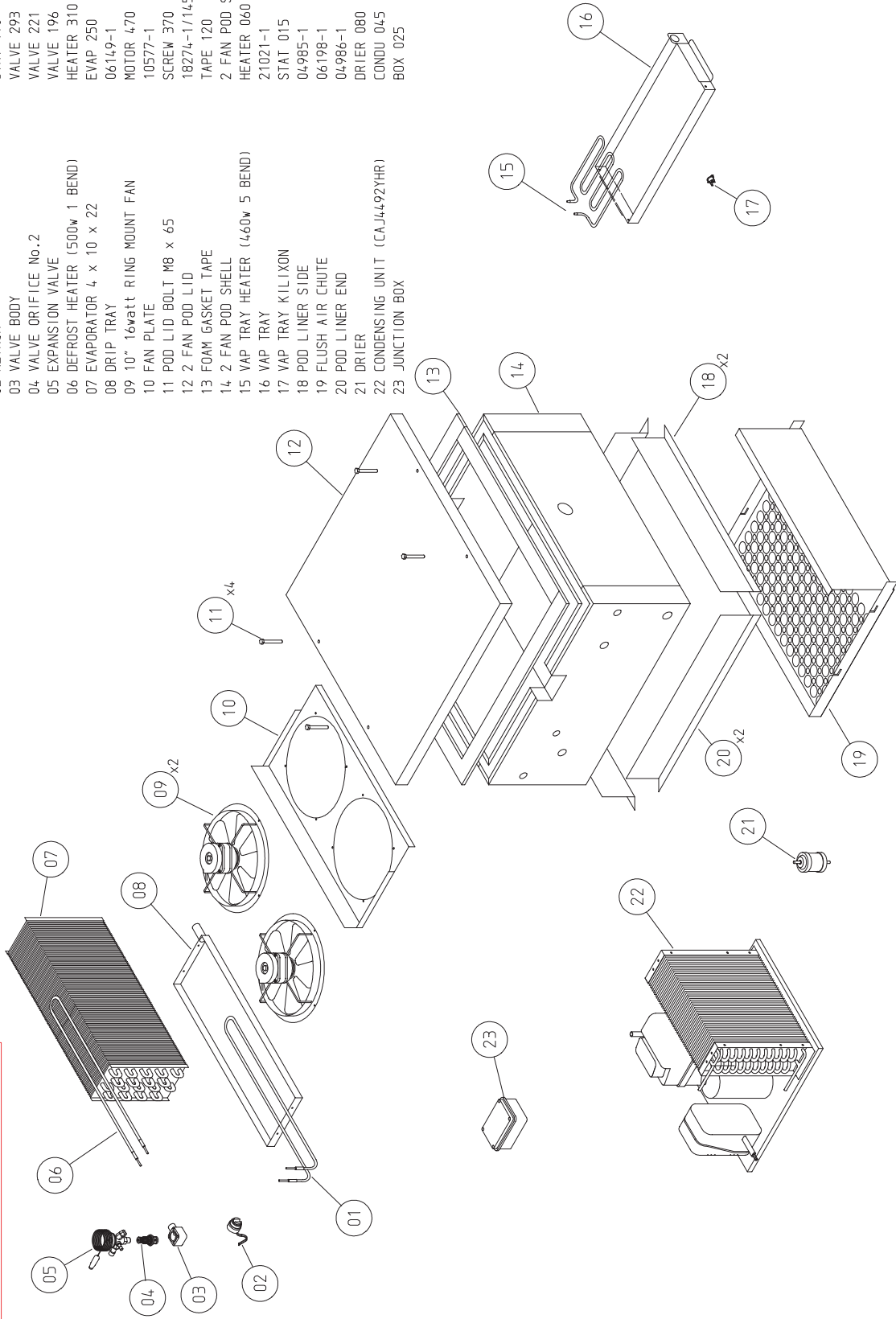
01	DOOR WIPER RUBBER	RUBBER 020
02	DOOR WIPER BRACKET GASTRONORM	P.11920
	DOOR WIPER BRACKET COMBI	P.11958
03	1885 x 770 x 90 FLUSH DOOR GASTRONORM	P.14565 / P.14559
	1185 x 970 x 90 FLUSH DOOR COMBI	P.14566 / P.14560
04	DOOR SNUBBER	CLOSER 010
05	2090 x 550 REVERSE CORNER	
06	2090 x 1070 MALE-MALE WALL	
07	1152 x 587 EVAP ROOF	
08	2090 x 550 CORNER	
09	1152 x 787 ROOF GASTRONORM	
	1152 x 987 ROOF COMBI	
10	2090 X 1030 MALE-MALE WALL	
11	2090 x 1100 WALL	
12	2090 x 920 COVED CORNER JAMB GASTRONORM	
	2090 x 1120 COVED CORNER JAMB COMBI	
13	DOOR GASKET GASTRONORM	GASKET 611
	DOOR GASKET COMBI	GASKET 612
14	DOOR HEATER WIRE	HEATER WIRE 500
	DOOR HEATER WIRE COMBI	HEATER WIRE 200
15	HINGE (1246 CHROME)	HINGE 026
16	1079mm FLOOR ANGLE	
17	REAR SIDE TOP SURROUND (WITH POD)	P.15255-1
18	FRONT SIDE TOP SURROUND (WITH POD)	P.24509-1
19	UNIT COVER GASTRONORM (WITH POD)	P.14671-1
	UNIT COVER COMBI (WITH POD)	P.14674-1
20	FRONT SIDE TOP SURROUND (WITH POD)	P.14678-1
21	REAR SIDE TOP SURROUND (NO POD)	P.15254-1
22	FRONT SIDE TOP SURROUND (NO POD)	P.24512-1
23	FRONT TOP SURROUND GASTRONORM (NO POD)	P.14649-1
	FRONT TOP SURROUND COMBI (NO POD)	P.15286-1
24	FRONT SIDE TOP SURROUND (NO POD)	P.24512-1

WIRING DIAGRAM FOR A WBC35

(KEY ON PAGE 2)

-Q2 6Amp 5 6

-X1 7 8 -W4 (1)(2) -B7

L1 N

DOOR SWITCH

L11 L10 OVER TEMP

L3 L2 HP/LP STAT

E18

DATA I/O

MAINS SELECTION
115
208
240
Link for required voltage

2.5mm 2.5mm 2.5mm

-P2 REMOTE

T6 FP3 Whi Red -B6
T5 FP2 Whi Red -B5
T4 FP1 Whi Red -B4
T3 AUX Whi Red -B3
T2 EVP Whi Red -B2
T1 AIR Whi Red -B1

-W3

-P1

-Q1 10Amp 1 2

-K1 1 3 2 4 5 6

-X1 3 4 G
-W2 (1) (2)(G/Y)
-E1 M M

L2
L1
G
-W1

2.5mm (13AWG)

36
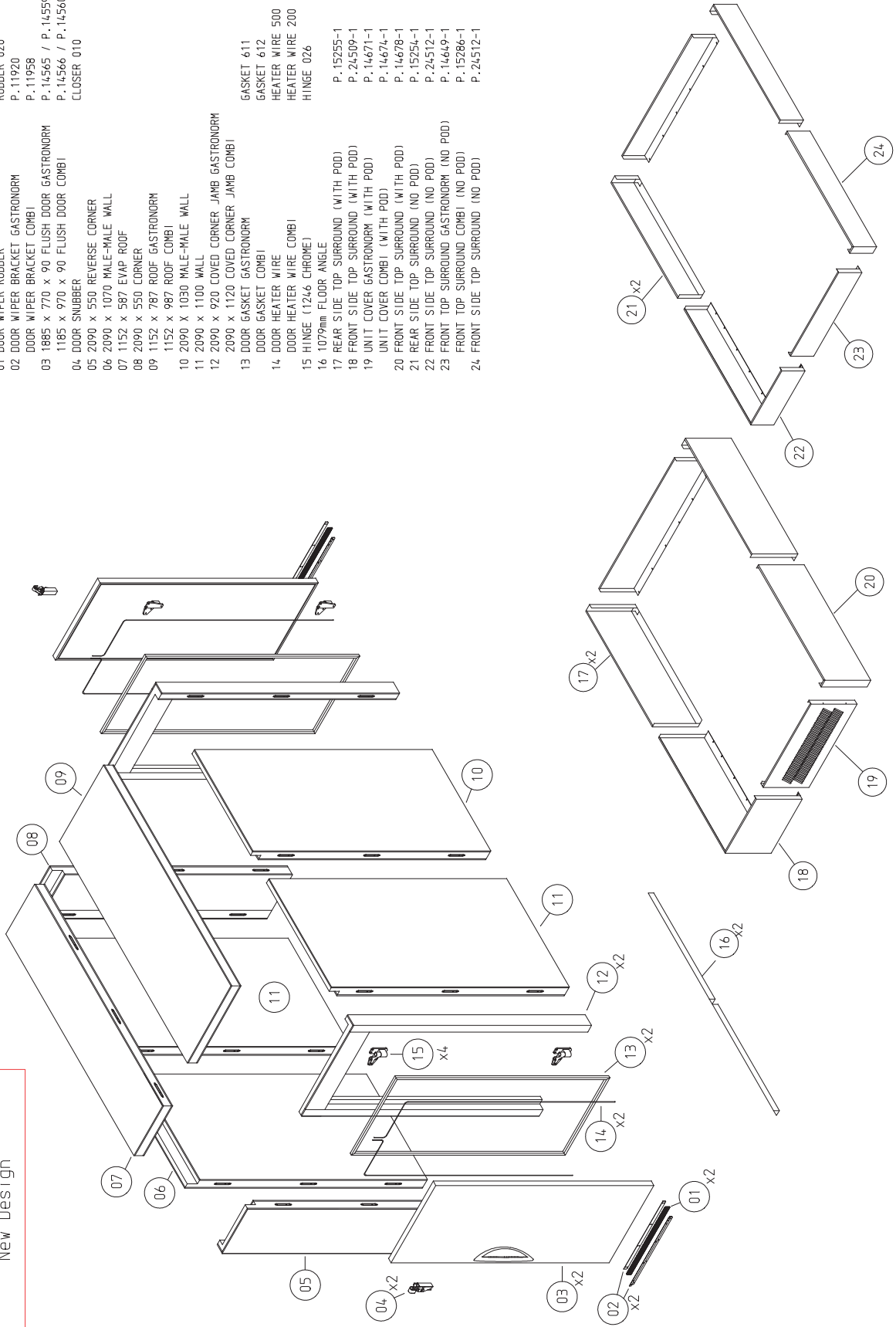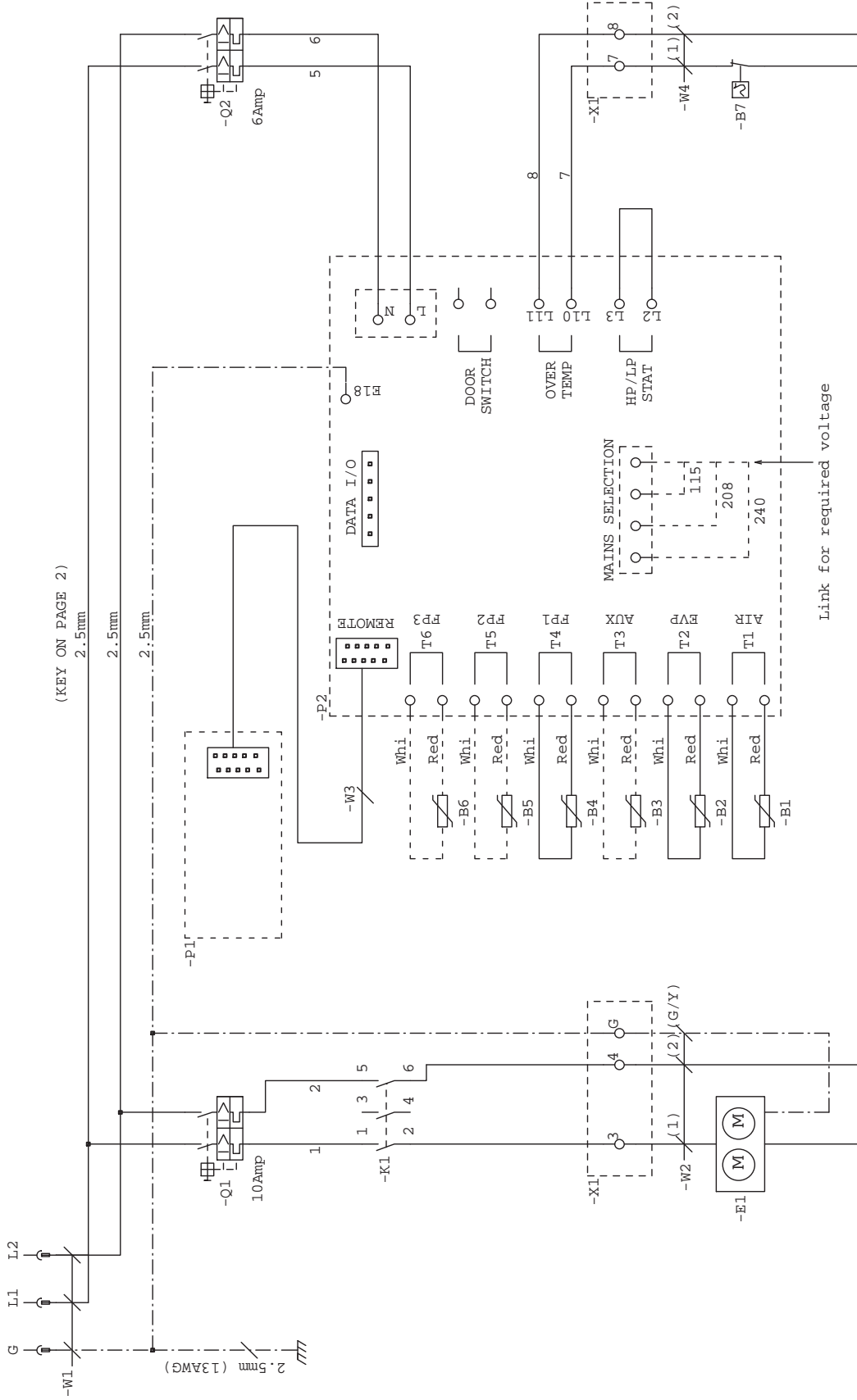
WIRING DIAGRAM FOR A WBC35

Key
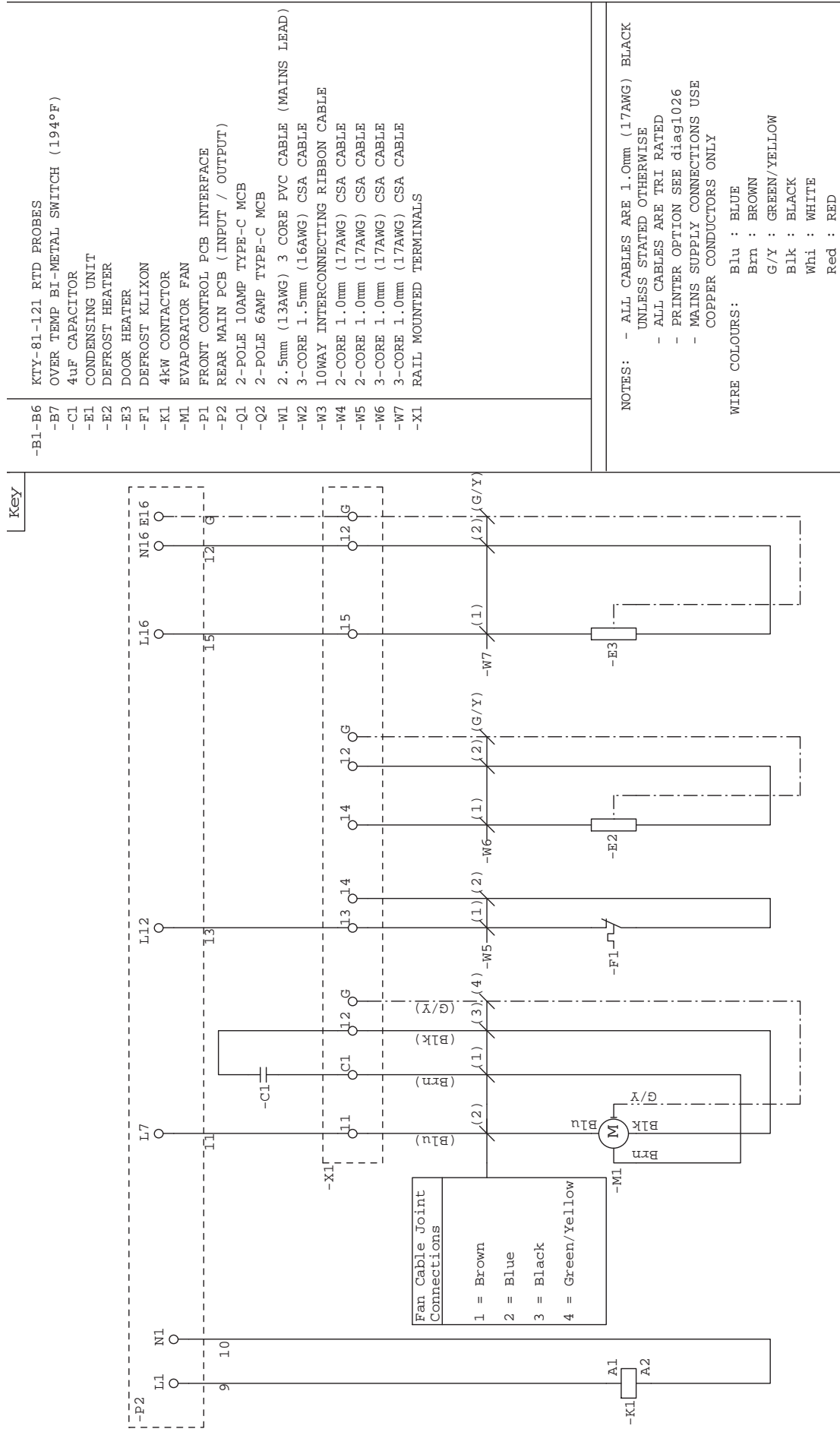
-B1-B6	KTY-81-121 RTD PROBES
-B7	OVER TEMP BI-METAL SWITCH (194°F)
-C1	4uF CAPACITOR
-E1	CONDENSING UNIT
-E2	DEFROST HEATER
-E3	DOOR HEATER
-F1	DEFROST KLIXON
-K1	4kW CONTACTOR
-M1	EVAPORATOR FAN
-P1	FRONT CONTROL PCB INTERFACE
-P2	REAR MAIN PCB (INPUT / OUTPUT)
-Q1	2-POLE 10AMP TYPE-C MCB
-Q2	2-POLE 6AMP TYPE-C MCB
-W1	2.5mm (13AWG) 3 CORE PVC CABLE (MAINS LEAD)
-W2	3-CORE 1.5mm (16AWG) CSA CABLE
-W3	10WAY INTERCONNECTING RIBBON CABLE
-W4	2-CORE 1.0mm (17AWG) CSA CABLE
-W5	2-CORE 1.0mm (17AWG) CSA CABLE
-W6	3-CORE 1.0mm (17AWG) CSA CABLE
-W7	3-CORE 1.0mm (17AWG) CSA CABLE
-X1	RAIL MOUNTED TERMINALS

NOTES:
- ALL CABLES ARE 1.0mm (17AWG) BLACK UNLESS STATED OTHERWISE
- ALL CABLES ARE TRI RATED
- PRINTER OPTION SEE diag1026
- MAINS SUPPLY CONNECTIONS USE COPPER CONDUCTORS ONLY

WIRE COLOURS:
Blu : BLUE
Brn : BROWN
G/Y : GREEN/YELLOW
Blk : BLACK
Whi : WHITE
Red : RED

Fan Cable Joint Connections

1 = Brown
2 = Blue
3 = Black
4 = Green/Yellow

WIRING DIAGRAM FOR A WBC60

Key

-B1-B6	KTY-81-121 RTD PROBES
-B7	OVER TEMP BI-METAL SWITCH (194°F)
-B8	HP SWITCH
-B9	LP SWITCH
-E1	CONDENSOR UNIT
-E2	DEFROST HEATERS
-E3	VAP TRAY HEATER
-E4	DOOR HEATER
-F1	DEFROST KLIXON
-K1	4kW CONTACTOR
-M1	EVAPORATOR BLAST FANS
-M2	EVAPORATOR STORE FANS
-P1	FRONT CONTROL PCB INTERFACE
-P2	REAR MAIN PCB (INPUT / OUTPUT)
-Q1	2-POLE 10AMP TYPE-C MCB
-Q2	2-POLE 6AMP TYPE-C MCB
-W1	2.5mm(13AWG) 3 CORE PVC CABLE (MAINS LEAD)
-W2	3-CORE 1.5mm(16AWG) CSA CABLE
-W3	10WAY INTERCONNECTING RIBBON CABLE
-W4	2-CORE 1.0mm(17AWG) CSA CABLE
-W5	4-CORE 1.0mm(17AWG) CSA CABLE
-W6	3-CORE 1.0mm(17AWG) CSA CABLE
-W7	3-CORE 1.0mm(17AWG) CSA CABLE
-W8	3-CORE 1.0mm(17AWG) CSA CABLE
-W9	2-CORE 1.0mm(17AWG) CSA CABLE
-W10	3-CORE 1.0mm(17AWG) CSA CABLE
-W11	3-CORE 1.0mm(17AWG) CSA CABLE
-W12	3-CORE 1.0mm(17AWG) CSA CABLE
-X1	RAIL MOUNTED TERMINALS

NOTES:
- ALL CABLES ARE 1.0mm (17AWG) BLACK UNLESS STATED OTHERWISE
- ALL CABLES ARE TRI RATED
- PRINTER OPTION SEE diag1026
- MAINS SUPPLY CONNECTIONS USE COPPER CONDUCTORS ONLY

WIRE COLOURS:
Blu : BLUE
Brn : BROWN
G/Y : GREEN/YELLOW
Blk : BLACK
Whi : WHITE
Red : RED

6Amp -Q2

DATA I/O

DOOR SWITCH

OVER TEMP

MAINS SELECTION
115
208
240

Link for required voltage

REMOTE

FP3 T6
FP2 T5
FP1 T4
AUX T3
EVP T2
AIR T1

Whi / Red

-P1 -P2 -W3

-B6 -B5 -B4 -B3 -B2 -B1

G L1 L2

-W1 2.5mm (13AWG)

-Q1 10Amp

1.5mm(16AWG)

-K1

-X1

-W2

M -E1

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WIRING DIAGRAM FOR A WBC60

(KEY ON PAGE 1)

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WIRING DIAGRAM FOR A WBC75

Key

-B1-B6	KTY-81-121 RTD PROBES
-B7	OVER TEMP BI-METAL SWITCH (194°F)
-B8	HP/LP SWITCH
-C1-C4	1.5uF CAPACITORS
-E1	CONDENSING UNIT
-E2-E4	DEFROST HEATERS
-E5	VAP TRAY HEATER
-E6	DOOR HEATER
-F1	DEFROST KLIXON
-K1	4kW CONTACTOR
-M1-M2	EVAPORATOR BLAST FANS
-M3-M4	EVAPORATOR STORE FANS
-P1	FRONT CONTROL PCB INTERFACE
-P2	REAR MAIN PCB (INPUT / OUTPUT)
-Q1	2-POLE 16AMP TYPE-C MCB
-Q2	2-POLE 10AMP TYPE-C MCB
-W1	3-CORE 4.0mm (12AWG) CSA PVC CABLE
-W2	3-CORE 2.5mm (13AWG) CSA CABLE
-W3	10WAY INTERCONNECTING RIBBON CABLE
-W4	2-CORE 1.0mm (17AWG) CSA CABLE
-W5	3-CORE 1.0mm (17AWG) CSA CABLE
-W6-W9	2-CORE 1.0mm (17AWG) CSA CABLE
-W10-W11	3-CORE 1.0mm (17AWG) CSA CABLE
-X1	RAIL MOUNTED TERMINALS

NOTES:
- ALL CABLES ARE 1.0mm (17AWG) BLACK UNLESS STATED OTHERWISE
- ALL CABLES ARE TRI RATED
- PRINTER OPTION SEE diag1026
- MAINS SUPPLY CONNECTIONS USE COPPER CONDUCTORS ONLY

WIRE COLOURS:
- Blu : BLUE
- Brn : BROWN
- G/Y : GREEN/YELLOW
- Blk : BLACK
- Whi : WHITE
- Red : RED

WIRING DIAGRAM FOR A WBC75

(KEY ON PAGE 1)

WIRING DIAGRAM FOR A WBC75

(KEY ON PAGE 1)

42
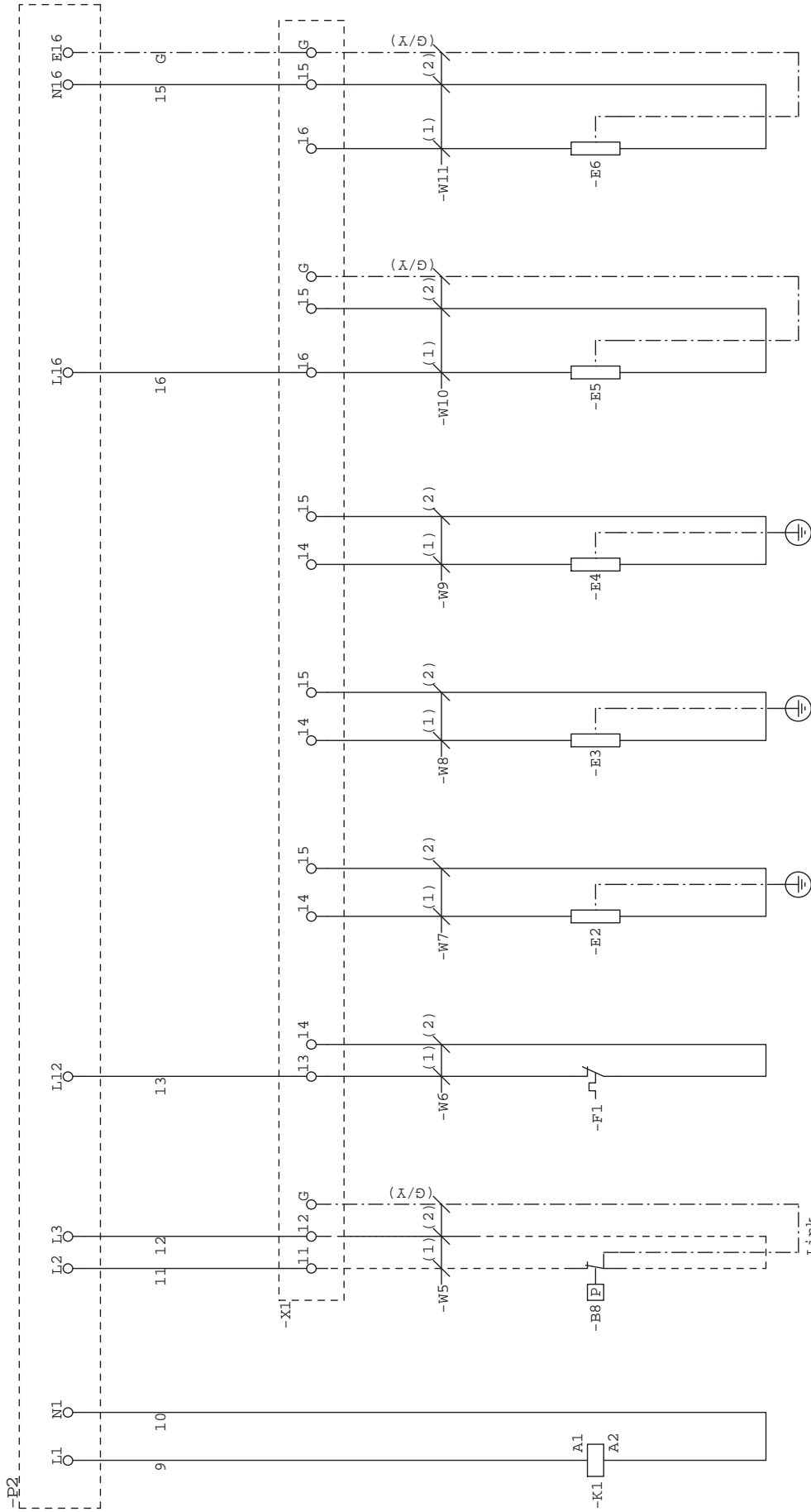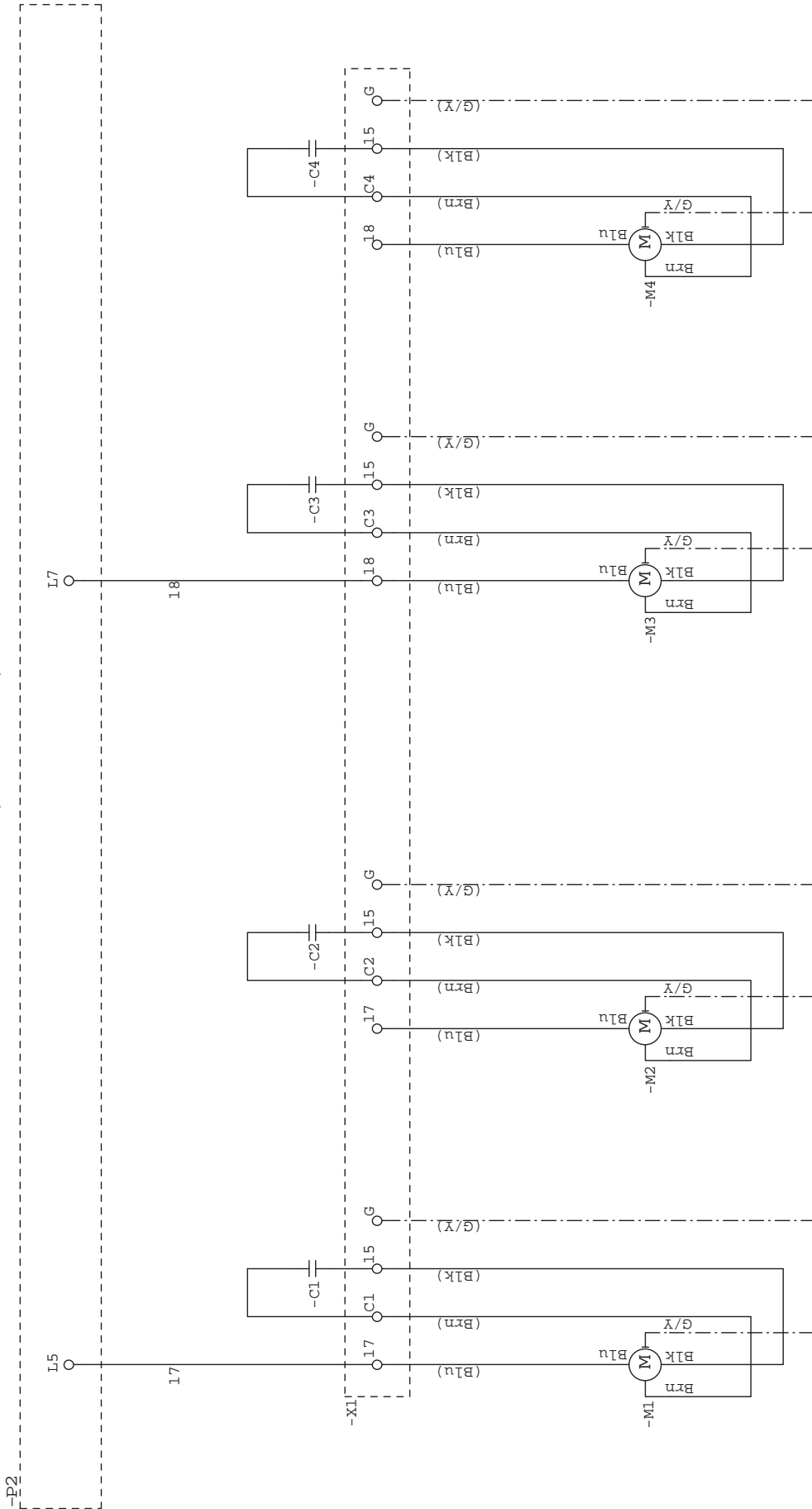
WIRING DIAGRAM FOR A WBC110

Key

-B1-B6	KTY-81-121 RTD PROBES
-B7	OVER TEMP BI-METAL SWITCH (194°F)
-B8	HP/LP SWITCH
-C1-C4	1.5uF CAPACITOR
-E1	CONDENSING UNIT
-E2-E4	DEFROST HEATERS
-E5	VAP TRAY HEATER
-E6	DOOR HEATER
-F1	DEFROST KLIXON
-K1	7.5kW CONTACTOR
-M1-M2	EVAPORATOR BLAST FANS
-M3-M4	EVAPORATOR STORE FANS
-P1	FRONT CONTROL PCB INTERFACE
-P2	REAR MAIN PCB (INPUT / OUTPUT)
-Q1	3-POLE 16AMP TYPE-C MCB
-Q2	2-POLE 10AMP TYPE-C MCB
-W1	7-CORE 2.5mm (13AWG) CSA CABLE
-W2	10WAY INTERCONNECTING RIBBON CABLE
-W3	2-CORE 1.0mm (17AWG) CSA CABLE
-W4	3-CORE 1.0mm (17AWG) CSA CABLE
-W5-W8	2-CORE 1.0mm (17AWG) CSA CABLE
-W9-W10	3-CORE 1.0mm (17AWG) CSA CABLE
-X1	RAIL MOUNTED TERMINALS

NOTES:
- ALL CABLES ARE 1.0mm (17AWG) BLACK UNLESS STATED OTHERWISE
- ALL CABLES ARE TRI RATED
- PRINTER OPTION SEE diag1026
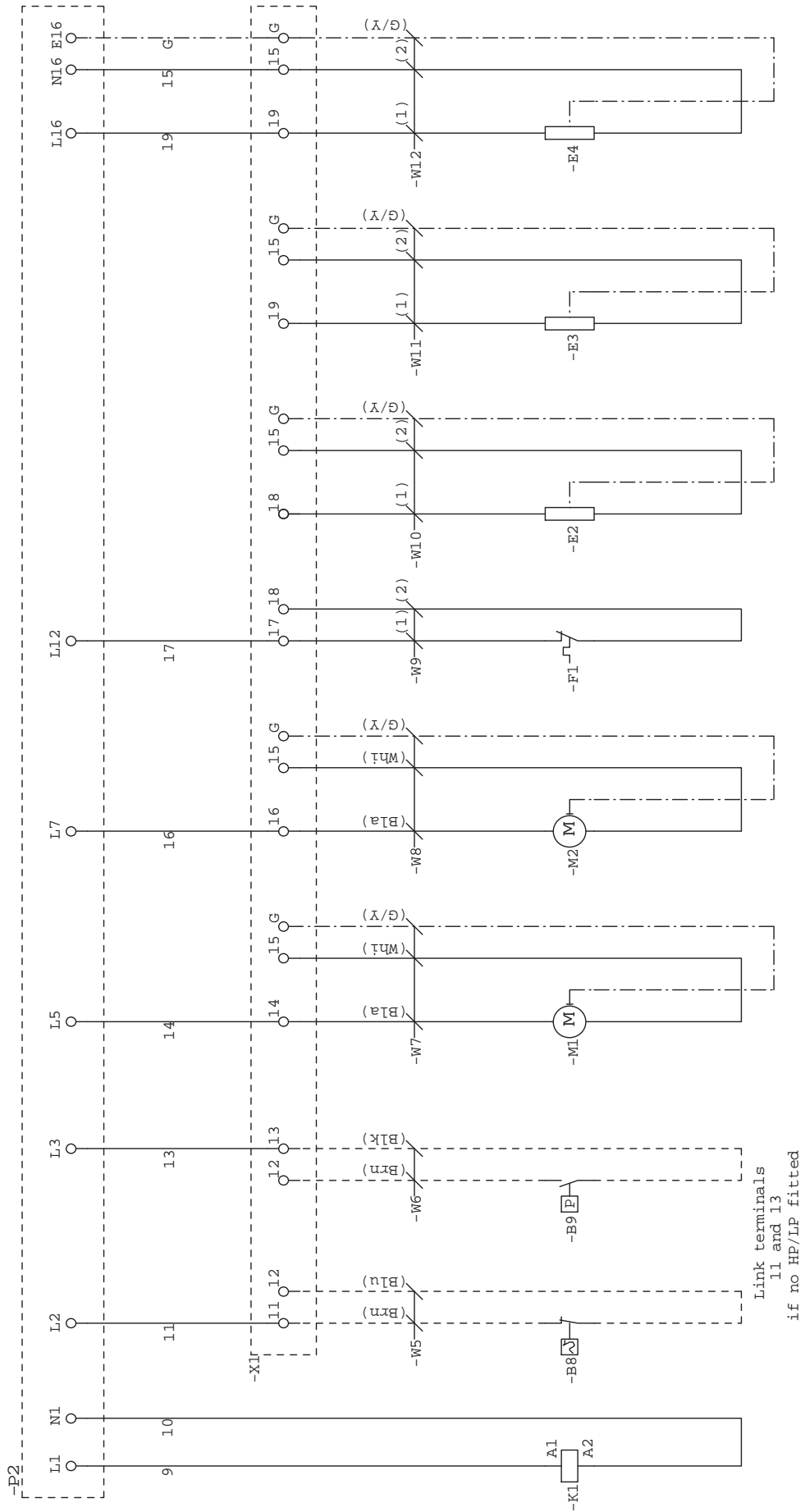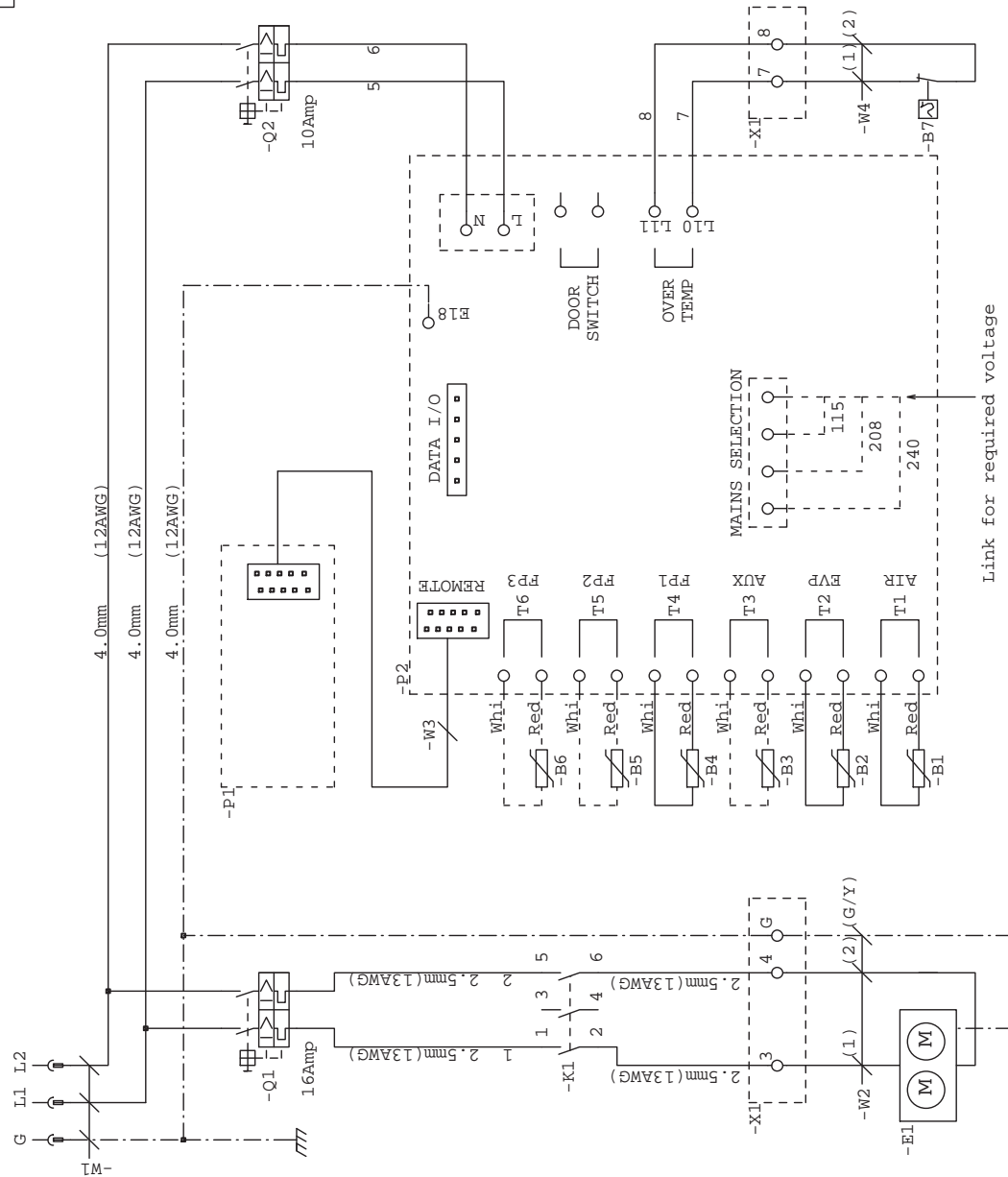- MAINS SUPPLY CONNECTIONS USE COPPER CONDUCTORS ONLY

WIRE COLOURS:
Blu : BLUE
Brn : BROWN
G/Y : GREEN/YELLOW
Blk : BLACK
Whi : WHITE
Red : RED

10Amp -Q2

7 8

N L -E18

DOOR SWITCH

OVER TEMP

L11 L10

-X1

10 9

-W3

-B7

10 9

MAINS SELECTION
115
208
240

Link for required voltage

DATA I/O

REMOTE

-P2

FP3 T6
FP2 T5
FP1 T4
AUX T3
EVP T2
AIR T1

Whi Red -B6
Whi Red -B5
Whi Red -B4
Whi Red -B3
Whi Red -B2
Whi Red -B1

-P1

2 x 2.5mm (13AWG)

-W2

G L3 L2 L1
4.0mm (12AWG)

-Q1 16Amp

-K1

3 2.5mm(13AWG) 5
2 2.5mm(13AWG) 3
1 2.5mm(13AWG) 2

6
4
2

2.5mm(13AWG)

-X1
G (G/Y)
6
5
4

-W1
(1)(2)(3)

-E1 M M

G
(1)(2)(3)

WIRING DIAGRAM FOR A WBC110

(KEY ON PAGE 1)

-P2

N16 E16   17 G   (G/Y)
N16   17
L16   18

17 G
18

17
16

17
16

17
16

L12   15 16   (1)(2)   -W5   -F1

L3   14 G   (G/Y)
L2   13   (1)(2)
13   -X1   -W4   -B8 P

Link 13 and 14
if no HP/LP fitted

N1   12
L1   11   A1 A2   -K1

-W10   -E6
-W9   -E5
-W8   -E4
-W7   -E3
-W6   -E2

WIRING DIAGRAM FOR A WBC110

(KEY ON PAGE 1)

WIRING DIAGRAM FOR A WMBC175/220/350 WITH STORAGE POD

L1
L2
L3
G

-Q1

L1 4.0mm (12AWG)
L2 4.0mm (12AWG)
L3 4.0mm (12AWG)
    4.0mm (12AWG)

NOTE:- MAINS SUPPLY WIRING
COPPER CONDUCTORS ONLY

(KEY ON PAGE 3)

-Q2 10Amp
-Q3 10Amp
-Q4 10Amp
-Q5 10Amp

15 /3.0
16 /3.0
G   /3.0

-K1
-K2
-K3

-X1
-X2
-W1
-W2
-W3

-E1
-E2

-M1
-M2
-M3 350 MODELS ONLY

Bk Bl Br
Gn Wh Ye

blast fan earth conductors
are not shown for clarity

46
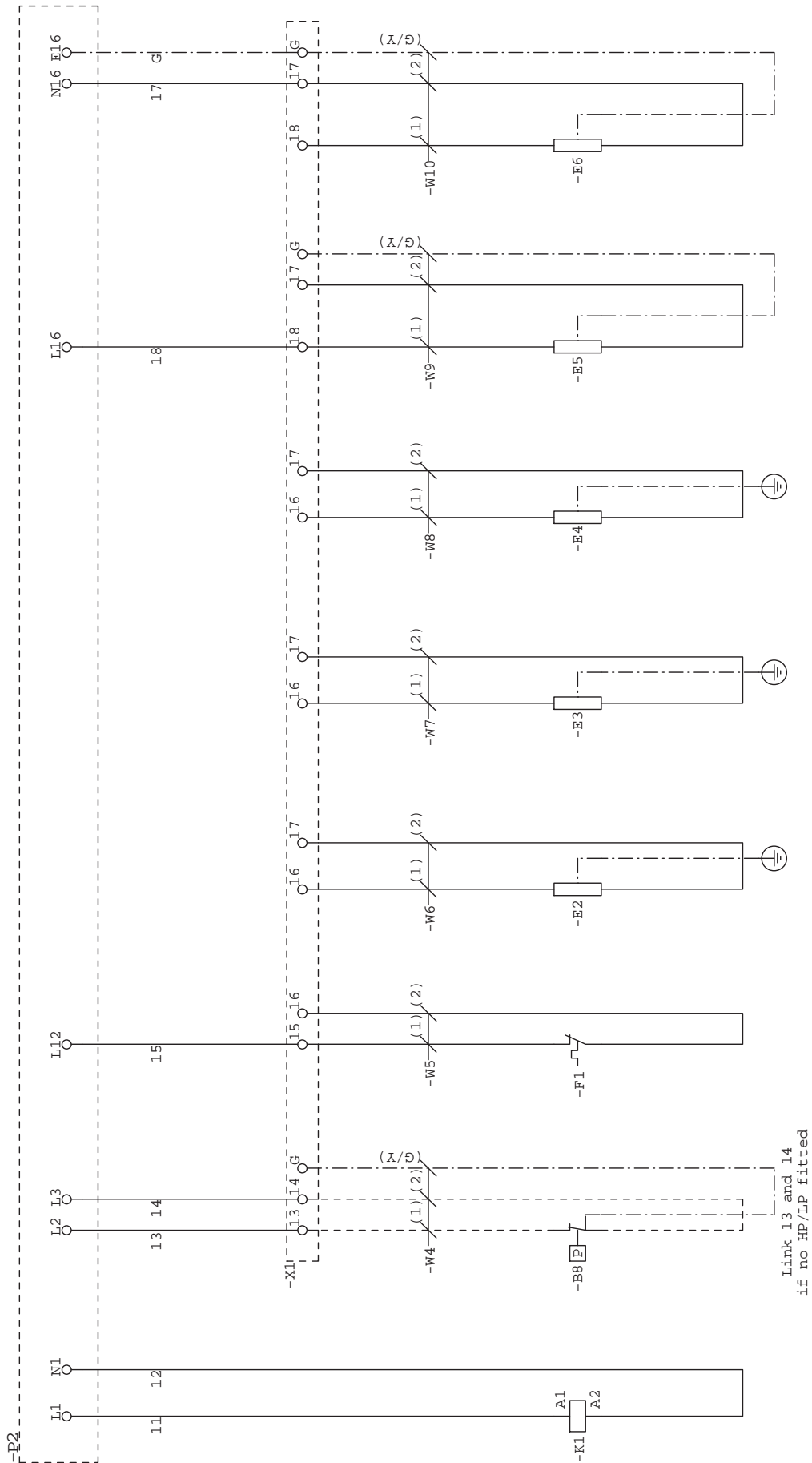
WIRING DIAGRAM FOR A WMBC175/220/350 WITH STORAGE POD

(KEY ON PAGE 3)

WIRING DIAGRAM FOR A WMBC175/220/350 WITH STORAGE POD

Key

-B1	HP/LP SWITCH
-B2-B7	KTY-81-121 RTD PROBES
-E1	MAIN DEFROST HEATERS
-E2	DOOR HEATERS (30mA RCD)
-F1	MAIN DEFROST KLIXON
-F2	F2A FUSE (5x20mm)
-F3	SAFETY KLIXON
-FM1-FM3	FAN OVERLOADS
-K1	4kW CONTACTOR
-K2	5.5kW CONTACTOR
-M1-M3	BLAST FAN MOTORS
-P1	FRONT CONTROL PCB INTERFACE
-P2	REAR MAIN PCB (INPUT/OUTPUT)
-Q1	40AMP 4-POLE ISOLATOR
-Q2-Q4	TYPE-C CIRCUIT BREAKERS (VARIOUS RATINGS)
-W1	1.5MM (16AWG) 18-CORE CABLE
-W2	1.0MM (17AWG) 7-CORE CABLE
-W3	1.0MM (17AWG) 2-CORE CABLE
-W4	1.0MM (17AWG) 2-CORE CABLE (IF FITTED)
-W5-W6	1.0MM (17AWG) 3-CORE CABLE
-W7	10-WAY RIBBON CABLE
-W8	1.0MM (17AWG) 2-CORE CABLE
-X1	RAIL MOUNTED TERMINALS
-X2	EQUIP JUNCTION BOX
-Y1	LIQUID LINE S/VALVE

NOTES: - ALL CABLES ARE 1.0mm (17AWG) BLACK
UNLESS STATED OTHERWISE
- ALL CABLES ARE TRI RATED
- PRINTER OPTION SEE diag1026
- MAINS SUPPLY CONNECTIONS USE
COPPER CONDUCTORS ONLY

WIRE COLOURS: Blu : BLUE
Brn : BROWN
G/Y : GREEN/YELLOW
Blk : BLACK
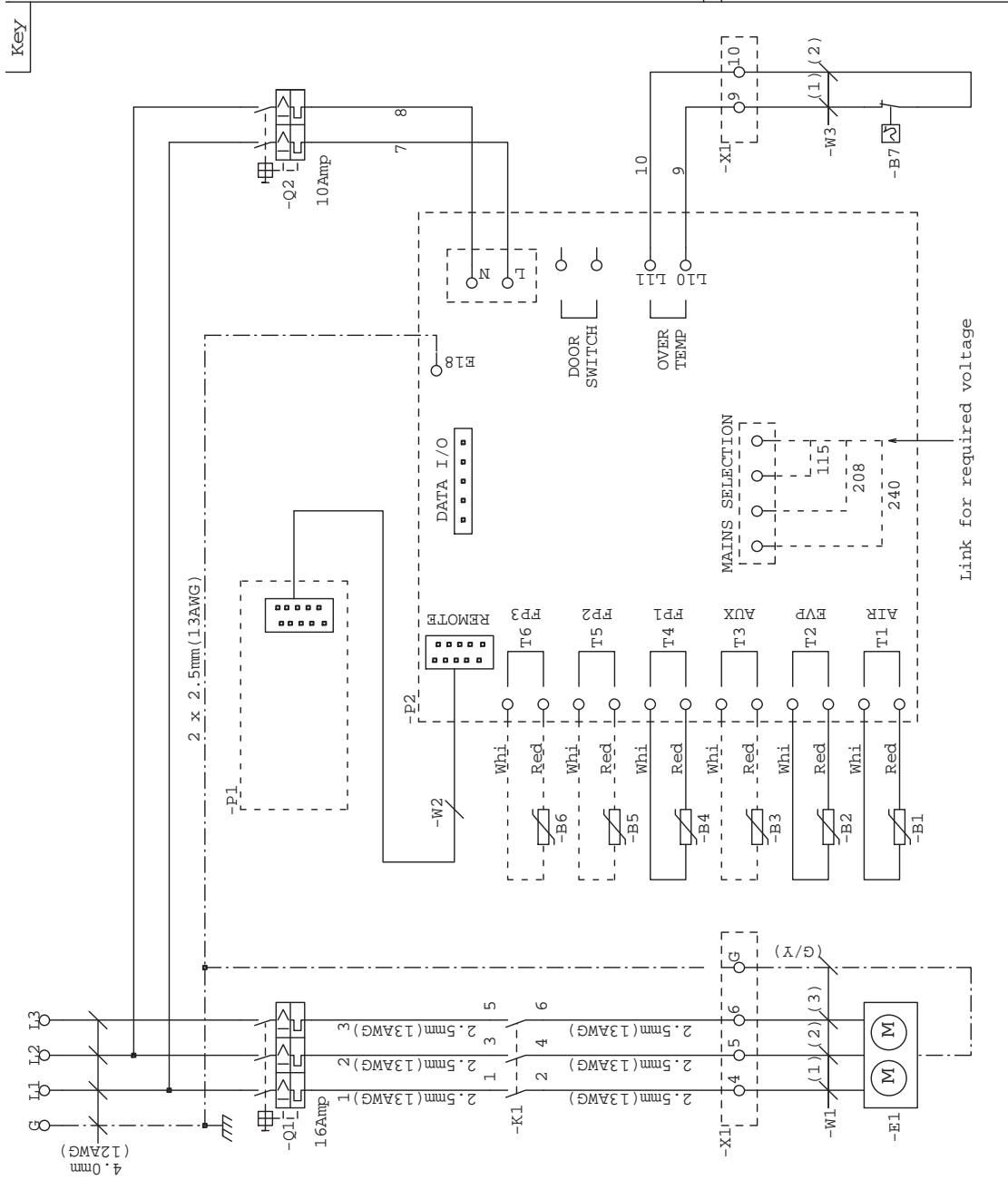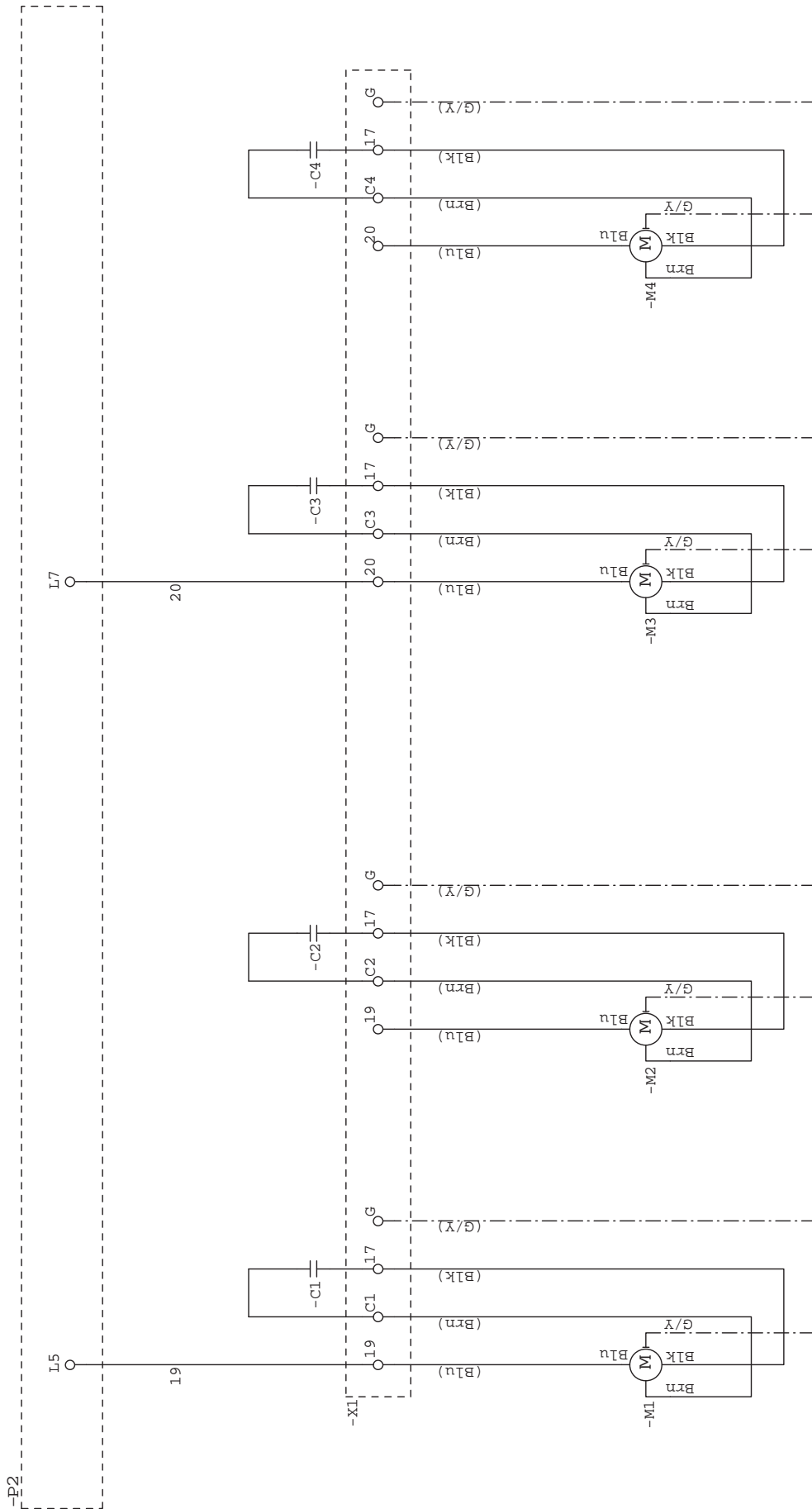Whi : WHITE
Red : RED

WIRING DIAGRAM FOR A WMBC175/220/350 WITHOUT STORAGE POD

WIRING DIAGRAM FOR A WMBC175/220/350 WITHOUT STORAGE POD

(KEY ON PAGE 3)

Link terminals
29 and 30
if no HP/LP fitted

175 and 220 Models
Ignore -FM3

-P2

50

WIRING DIAGRAM FOR A WMBC175/220/350 WITHOUT STORAGE POD

Key

-B1	HP/LP SWITCH
-B2-B7	KTY-81-121 RTD PROBES
-E1	MAIN DEFROST HEATERS
-E2	DOOR HEATERS (30mA RCD)
-F1	MAIN DEFROST KLIXON
-F2	F2A FUSE (5x20mm)
-F3	SAFETY KLIXON
-FM1-FM3	FAN OVERLOADS
-K1	4kW CONTACTOR
-K2	5.5kW CONTACTOR
-M1-M3	BLAST FAN MOTORS
-P1	FRONT CONTROL PCB INTERFACE
-P2	REAR MAIN PCB (INPUT/OUTPUT)
-Q1	40AMP 4-POLE ISOLATOR
-Q2-Q4	TYPE-C CIRCUIT BREAKERS (VARIOUS RATINGS)
-W1	1.5MM (16AWG) 18-CORE CABLE
-W2	1.0MM (17AWG) 7-CORE CABLE
-W3	1.0MM (17AWG) 2-CORE CABLE
-W4	1.0MM (17AWG) 2-CORE CABLE (IF FITTED)
-W5-W6	1.0MM (17AWG) 3-CORE CABLE
-W7	10-WAY RIBBON CABLE
-W8	1.0MM (17AWG) 2-CORE CABLE
-X1	RAIL MOUNTED TERMINALS
-X2	EQUIP JUNCTION BOX
-Y1	LIQUID LINE S/VALVE

NOTES: - ALL CABLES ARE 1.0mm (17AWG) BLACK
          UNLESS STATED OTHERWISE
        - ALL CABLES ARE TRI RATED
        - PRINTER OPTION SEE diag1026
        - MAINS SUPPLY CONNECTIONS USE
          COPPER CONDUCTORS ONLY

WIRE COLOURS: Blu : BLUE
                Brn : BROWN
                G/Y : GREEN/YELLOW
                Blk : BLACK
                Whi : WHITE
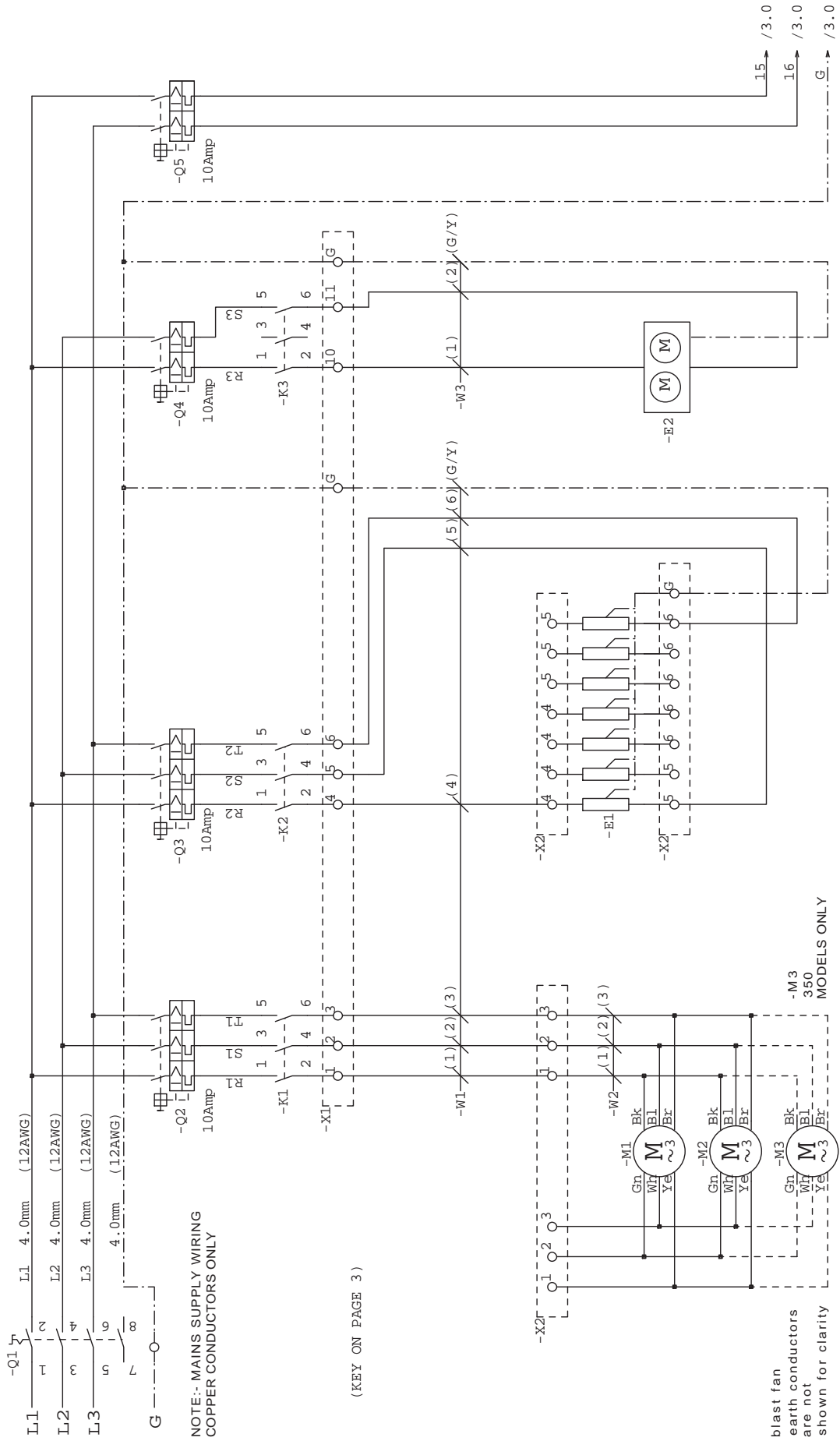   Red : RED

51

WIRING DIAGRAM FOR A WMBC480/660 WITH STORAGE POD

NOTE:- MAINS SUPPLY WIRING
COPPER CONDUCTORS ONLY
(KEY ON PAGE 5)

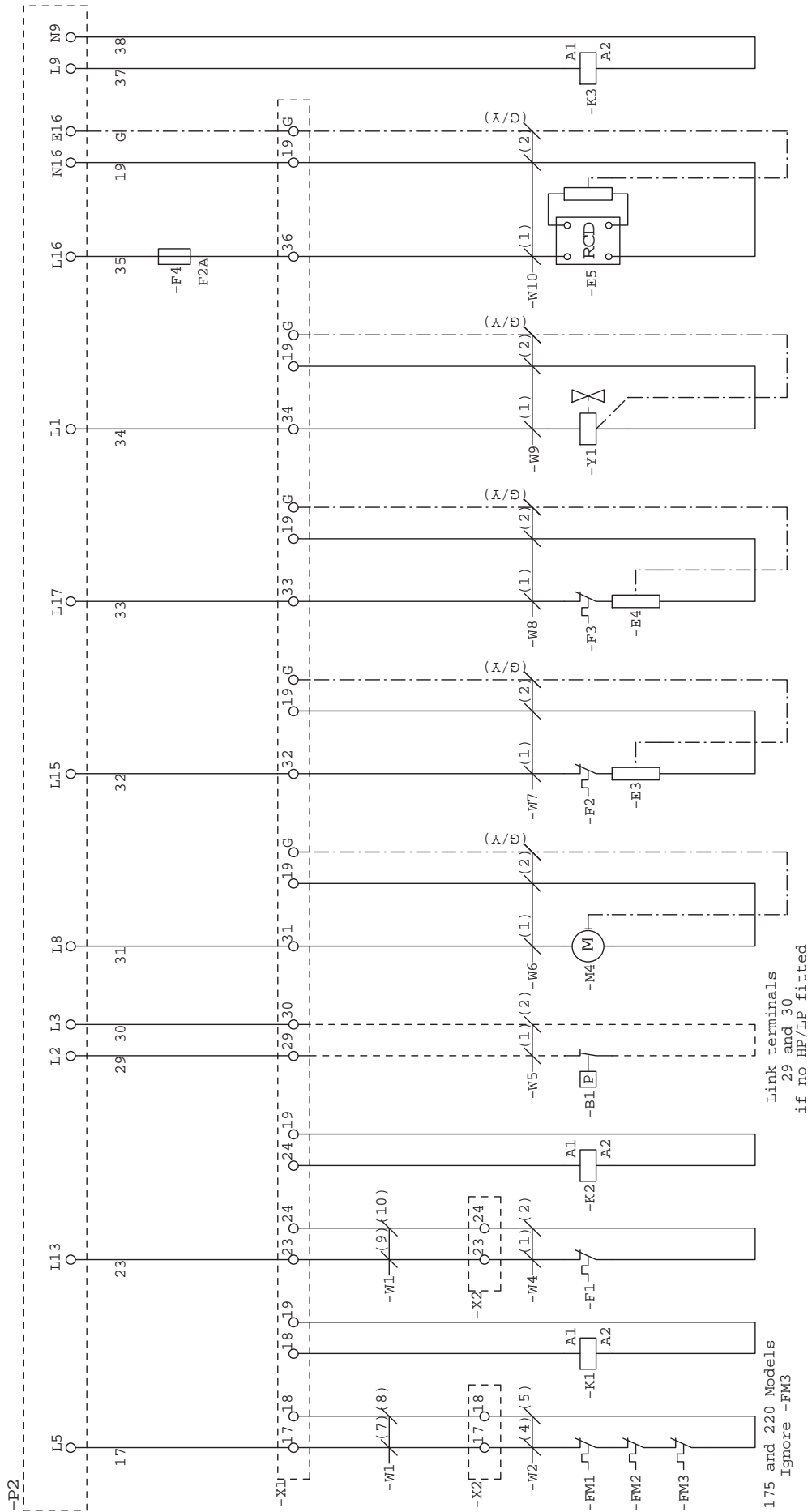BLAST FAN
EARTH CONDUCTORS
ARE NOT
SHOWN FOR CLARITY

WIRING DIAGRAM FOR A WMBC480/660 WITH STORAGE POD

53

WIRING DIAGRAM FOR A WMBC480/660 WITH STORAGE POD

(KEY ON PAGE 4)
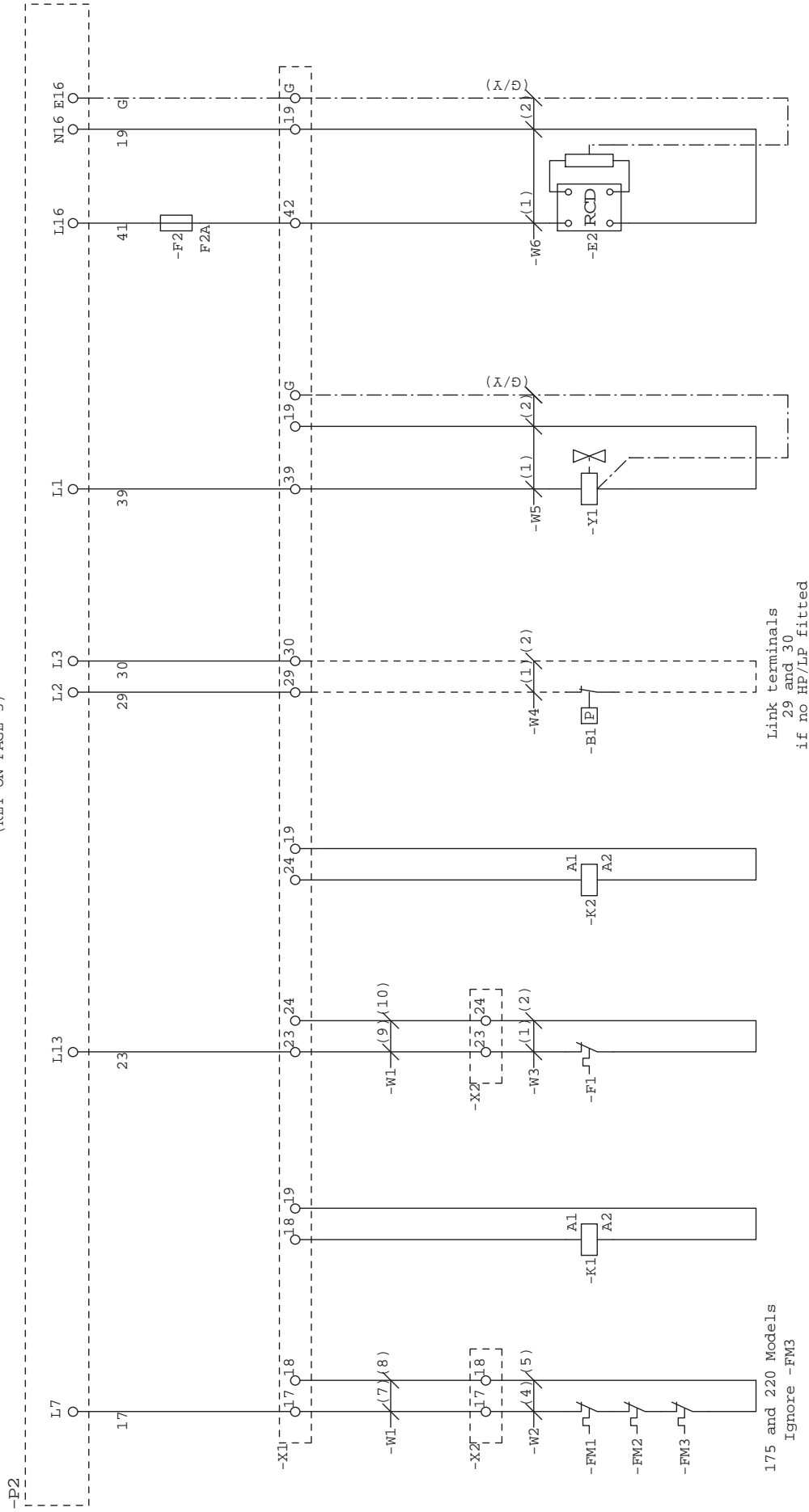
WIRING DIAGRAM FOR A WMBC480/660 WITH STORAGE POD

(KEY ON PAGE 5)

WIRING DIAGRAM FOR A WMBC480/660 WITH STORAGE POD

Key

-B1	HP/LP SWITCH
-B2-B7	KTY-81-121 RTD PROBES
-E1	MAIN DEFROST HEATERS (FRONT)
-E2	STORAGE POD CONDENSOR UNIT
-E3	MAIN DEFROST HEATERS (REAR)
-E4	STORAGE POD DEFROST HEATERS
-E5	VAP TRAY HEATER
-E6	DOOR HEATERS (30mA RCD)
-F1	MAIN DEFROST KLIXON (FRONT)
-F2	MAIN DEFROST KLIXON (REAR)
-F3	STORAGE POD DEFROST KLIXON
-F4	VAP TRAY KLIXON
-F5	F2A FUSE (5x20mm)
-F6	SAFETY KLIXON (FRONT)
-F7	SAFETY KLIXON (REAR)
-FM1-FM3	FAN OVERLOADS (FRONT)
-FM4-FM6	FAN OVERLOADS (REAR)
-K1	4kW CONTACTOR
-K2	5.5kW CONTACTOR
-K3	4kW CONTACTOR
-K4	4kW CONTACTOR
-K5	5.5kW CONTACTOR
-M1-M3	BLAST FAN MOTORS (FRONT)
-M4-M6	BLAST FAN MOTORS (REAR)
-M7	STORAGE POD EVAP FAN
-P1	FRONT CONTROL PCB INTERFACE
-P2	REAR MAIN PCB (INPUT/OUTPUT)
-Q1	40AMP 4-POLE ISOLATOR
-Q2-Q7	TYPE-C CIRCUIT BREAKERS (VARIOUS RATINGS)
-W1-W2	1.5mm (16AWG) 18-CORE CABLE
-W3	1.0mm (17AWG) 7-CORE CABLE
-W4-W5	1.5mm (16AWG) 18-CORE CABLE
-W6	1.0mm (17AWG) 7-CORE CABLE
-W7	1.0mm (17AWG) 3-CORE CABLE
-W8-W9	1.0mm (17AWG) 2-CORE CABLE
-W10	1.0mm (17AWG) 2-CORE CABLE (IF FITTED)
-W11-W15	1.0mm (17AWG) 3-CORE CABLE
-W16	10-WAY RIBBON CABLE
-W17-W18	1.0mm (17AWG) 2-CORE CABLE
-X1	RAIL MOUNTED TERMINALS
-X2	EQUIP 16/WAY PLUG/SOCKET
-X3	EQUIP JUNCTION BOX (FRONT)
-X4	EQUIP 16/WAY PLUG/SOCKET
-X5	EQUIP JUNCTION BOX (REAR)
-Y1	LIQUID LINE S/VALVE

MAINS SELECTION
115
208
240

Link for required voltage

OVER TEMP

/2.8 → G
/2.8 → 15
/2.8 → 16

WIRE COLOURS:

Blu : BLUE
Brn : BROWN
G/Y : GREEN/YELLOW
Blk : BLACK
Whi : WHITE
Red : RED

NOTES:
- ALL CABLES ARE 1.0mm (17AWG) BLACK UNLESS STATED OTHERWISE
- ALL CABLES ARE TRI RATED
- PRINTER OPTION SEE diag1026
- MAINS SUPPLY CONNECTIONS USE COPPER CONDUCTORS ONLY

WIRING DIAGRAM FOR A WMBC480/660 WITHOUT STORAGE POD

WIRING DIAGRAM FOR A WMBC480/660 WITHOUT STORAGE POD
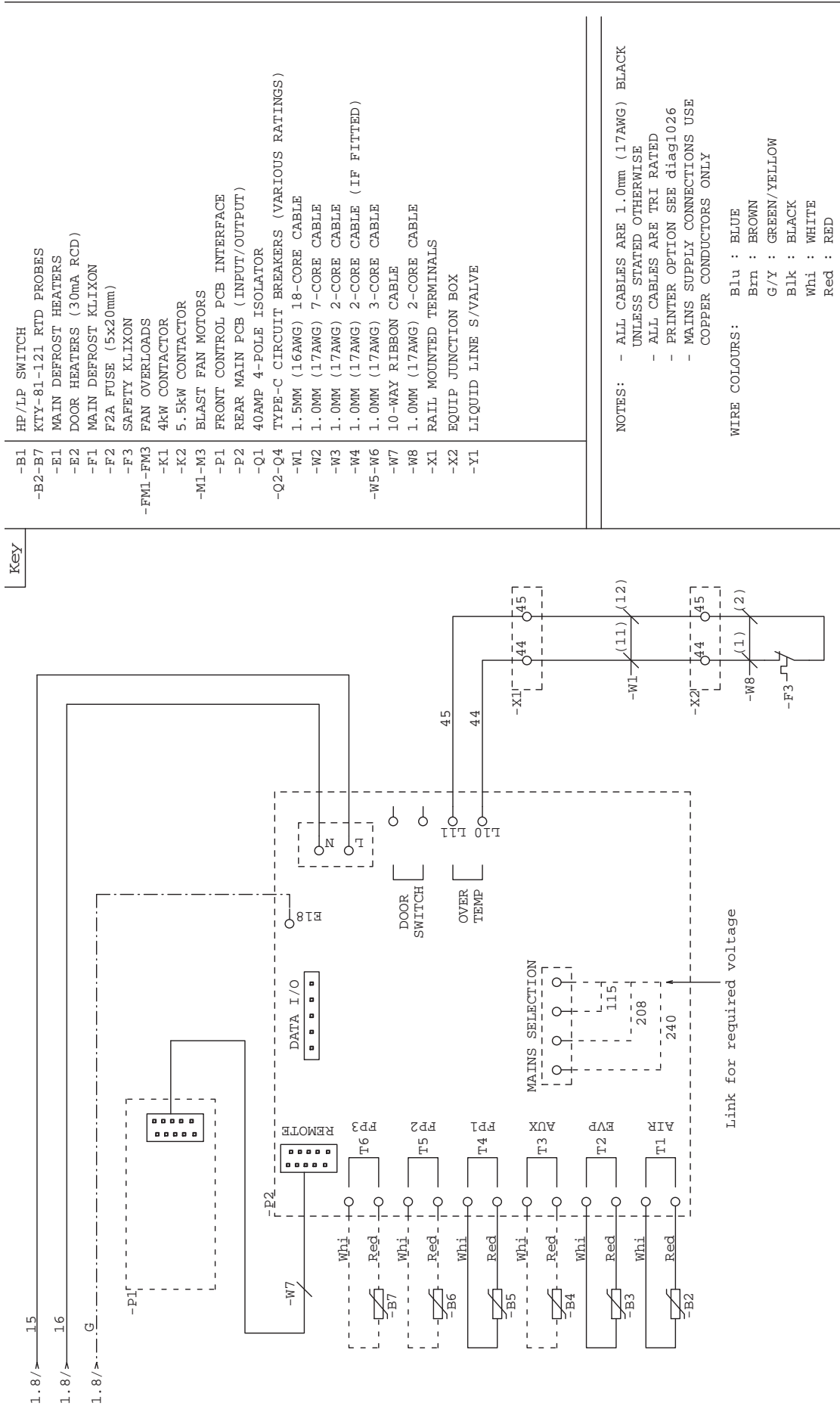
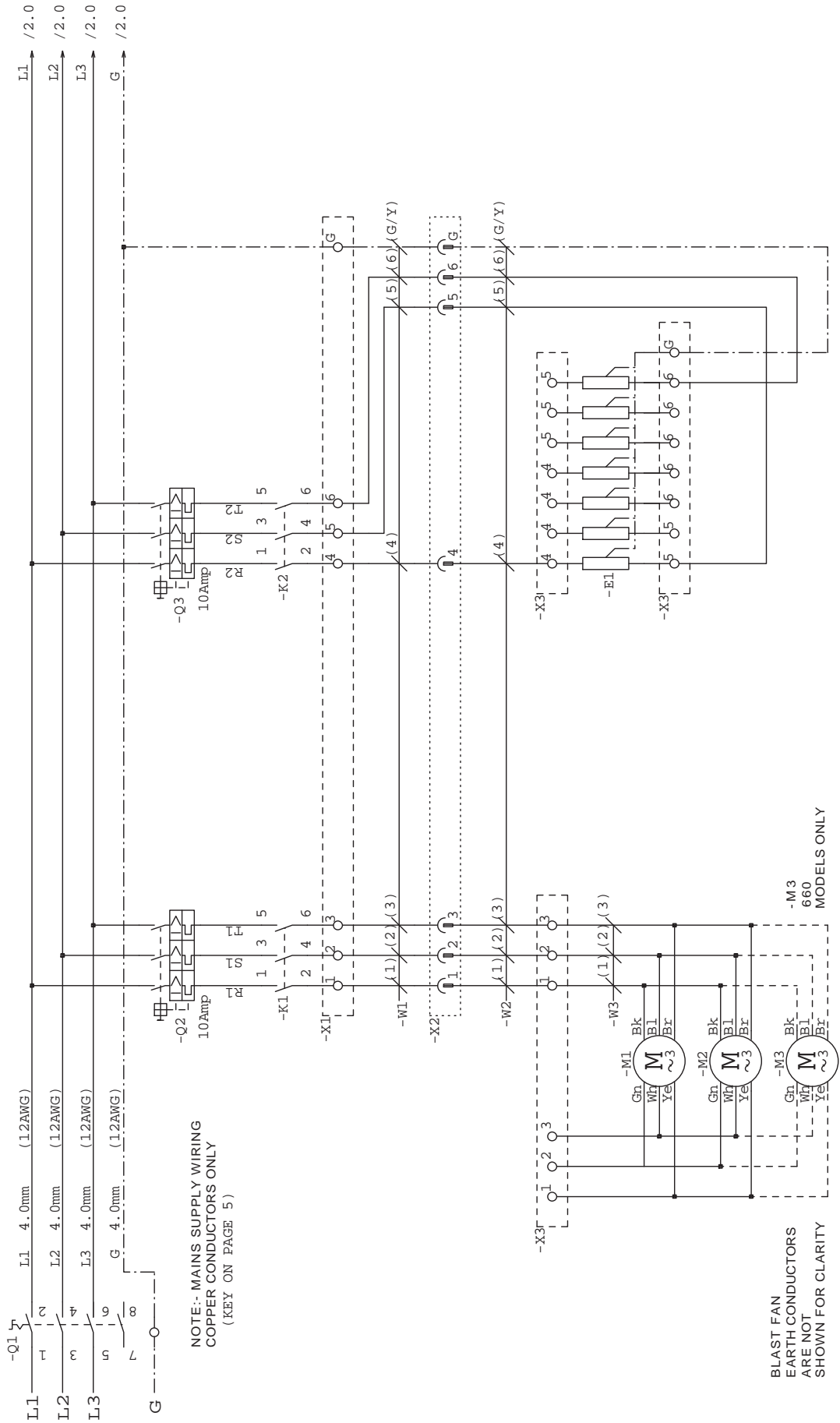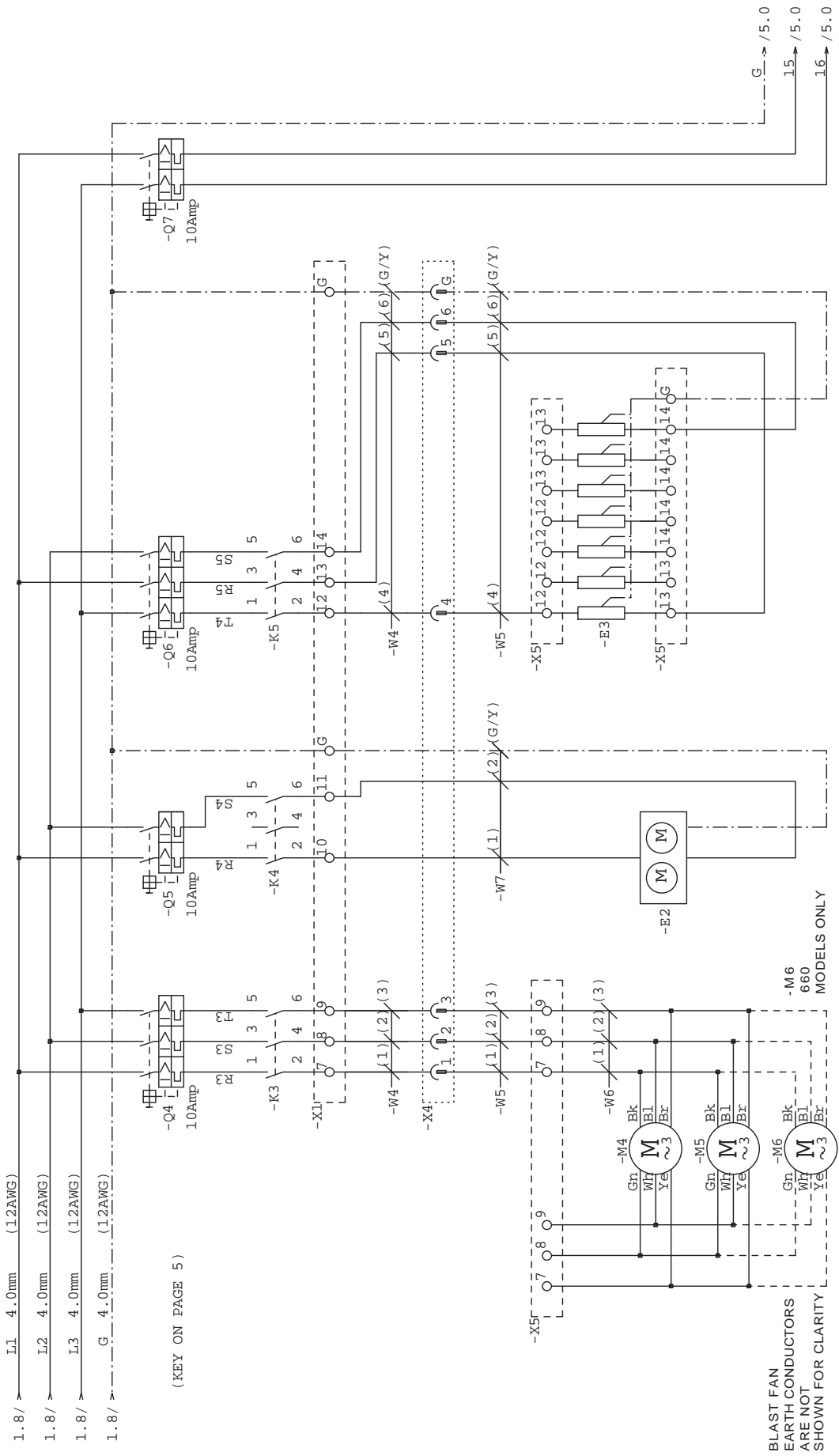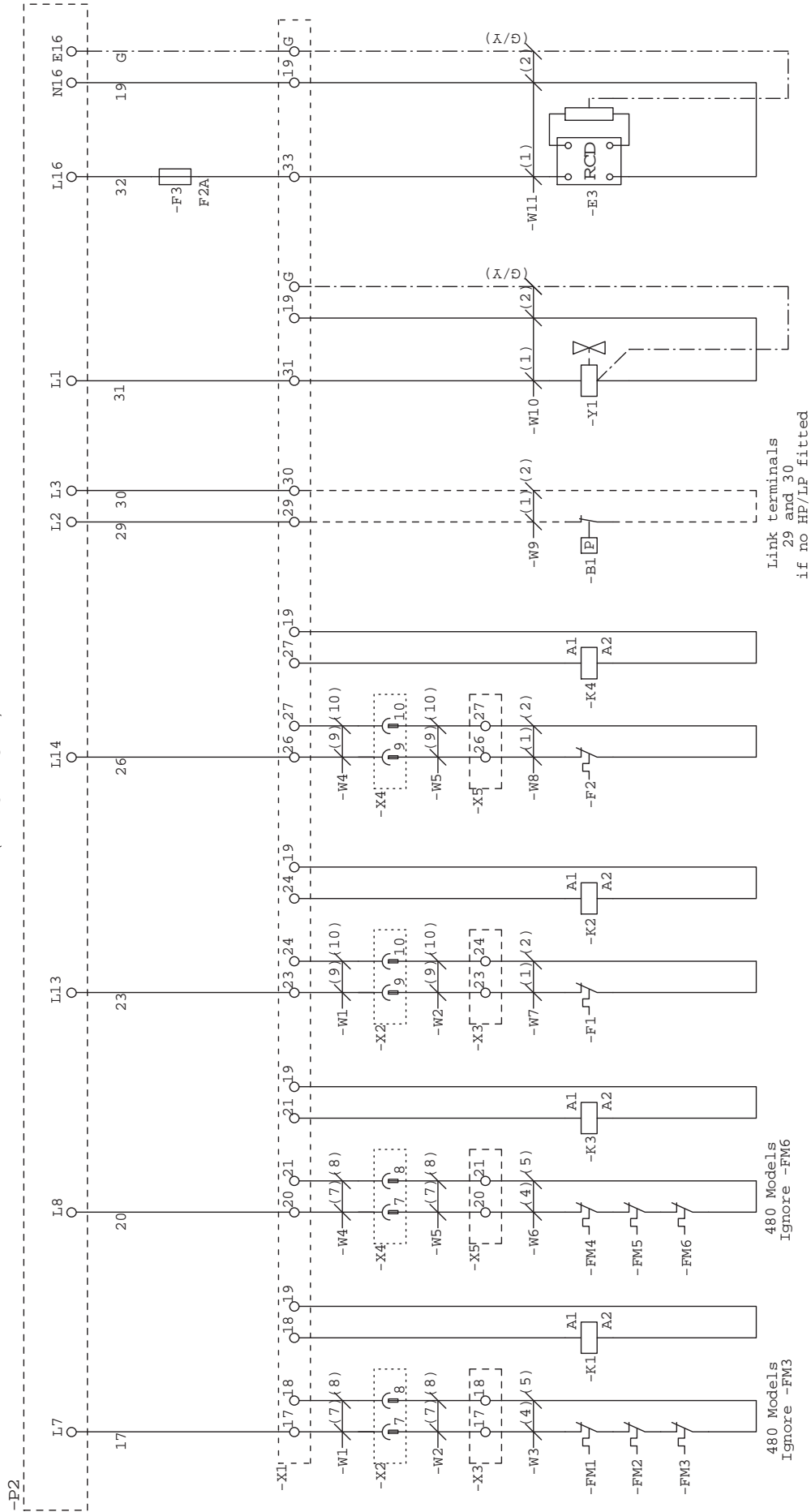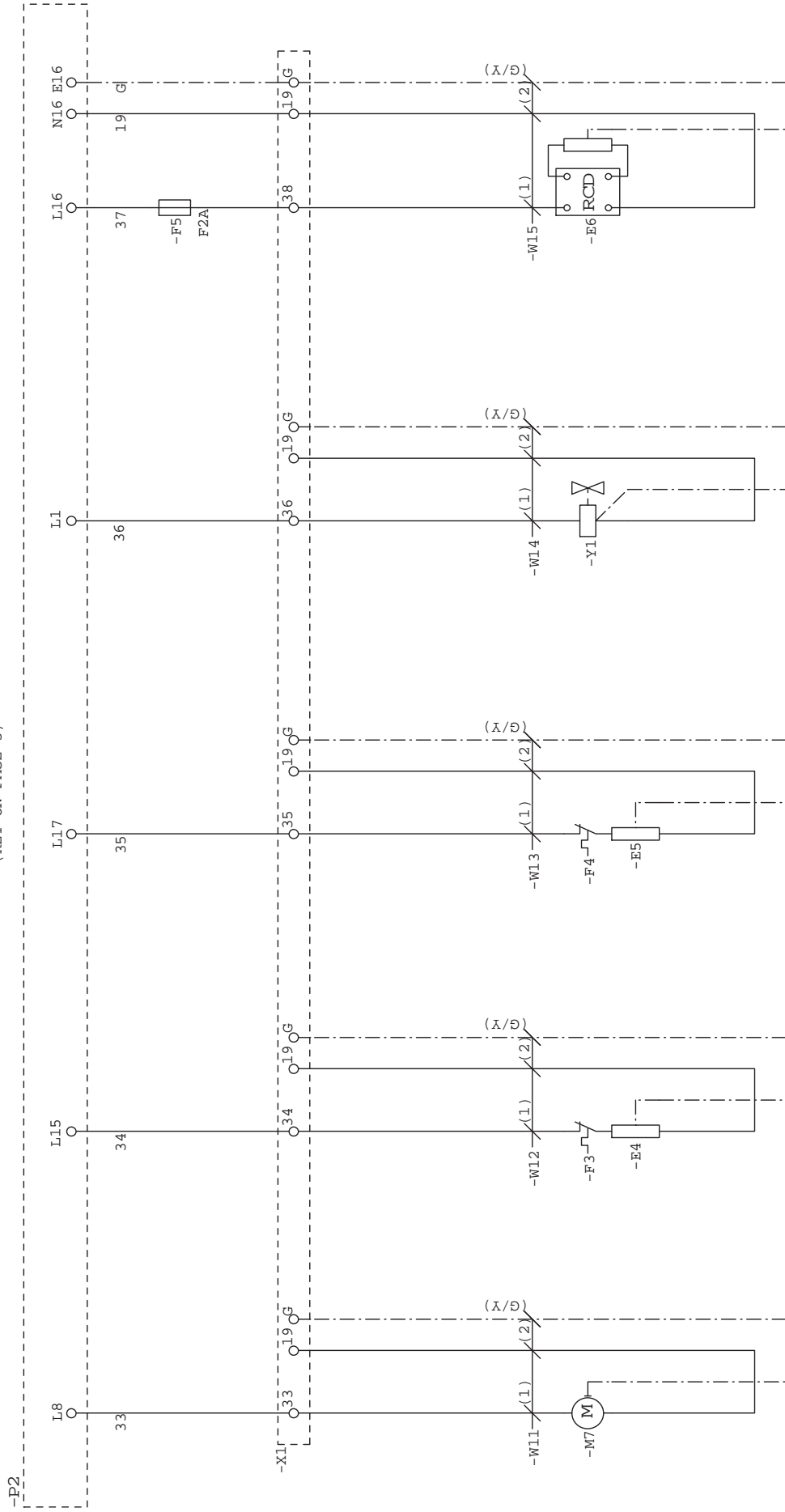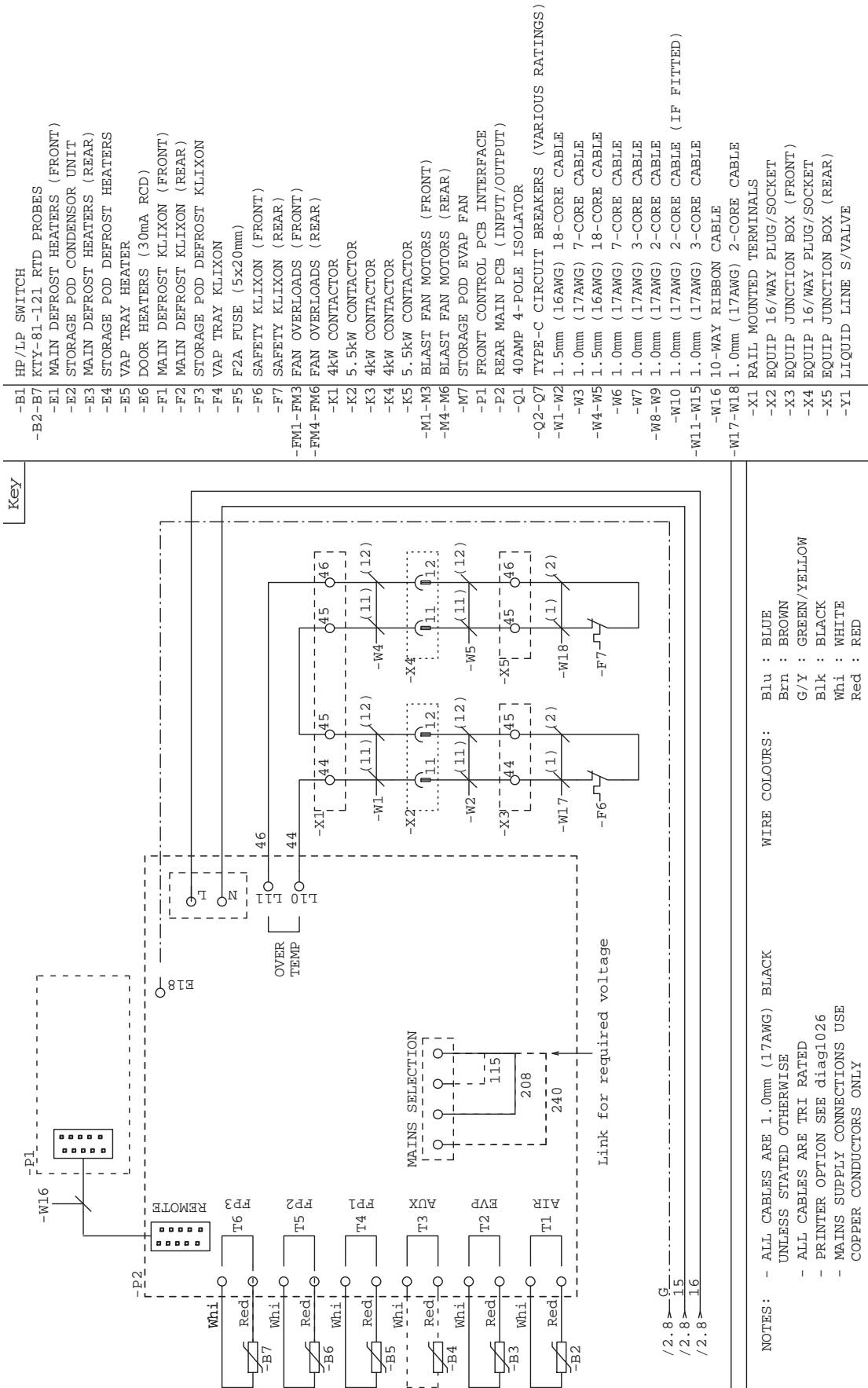# WIRING DIAGRAM FOR A WMBC480/660 WITHOUT STORAGE POD

(KEY ON PAGE 4)

WIRING DIAGRAM FOR A WMBC480/660 WITHOUT STORAGE POD
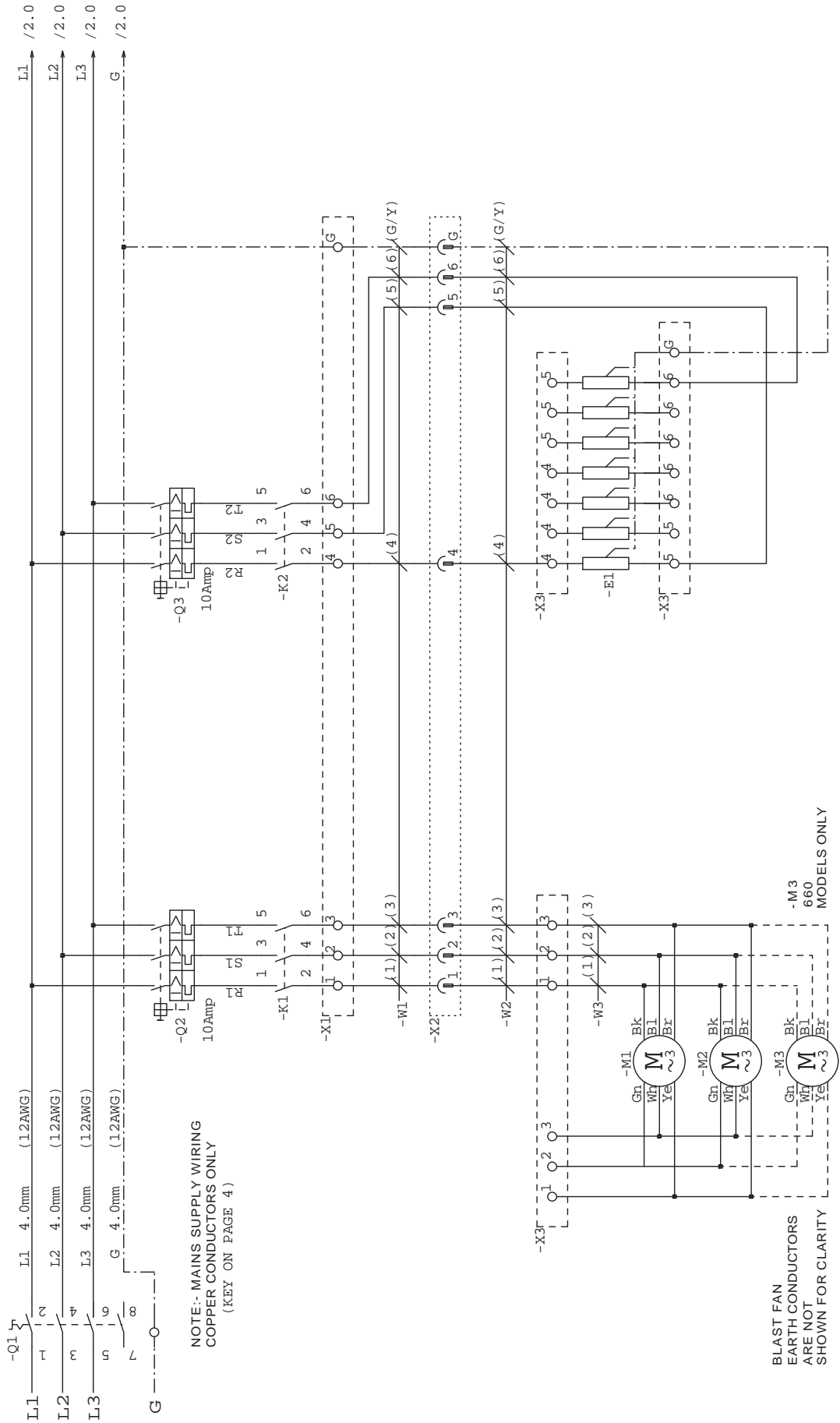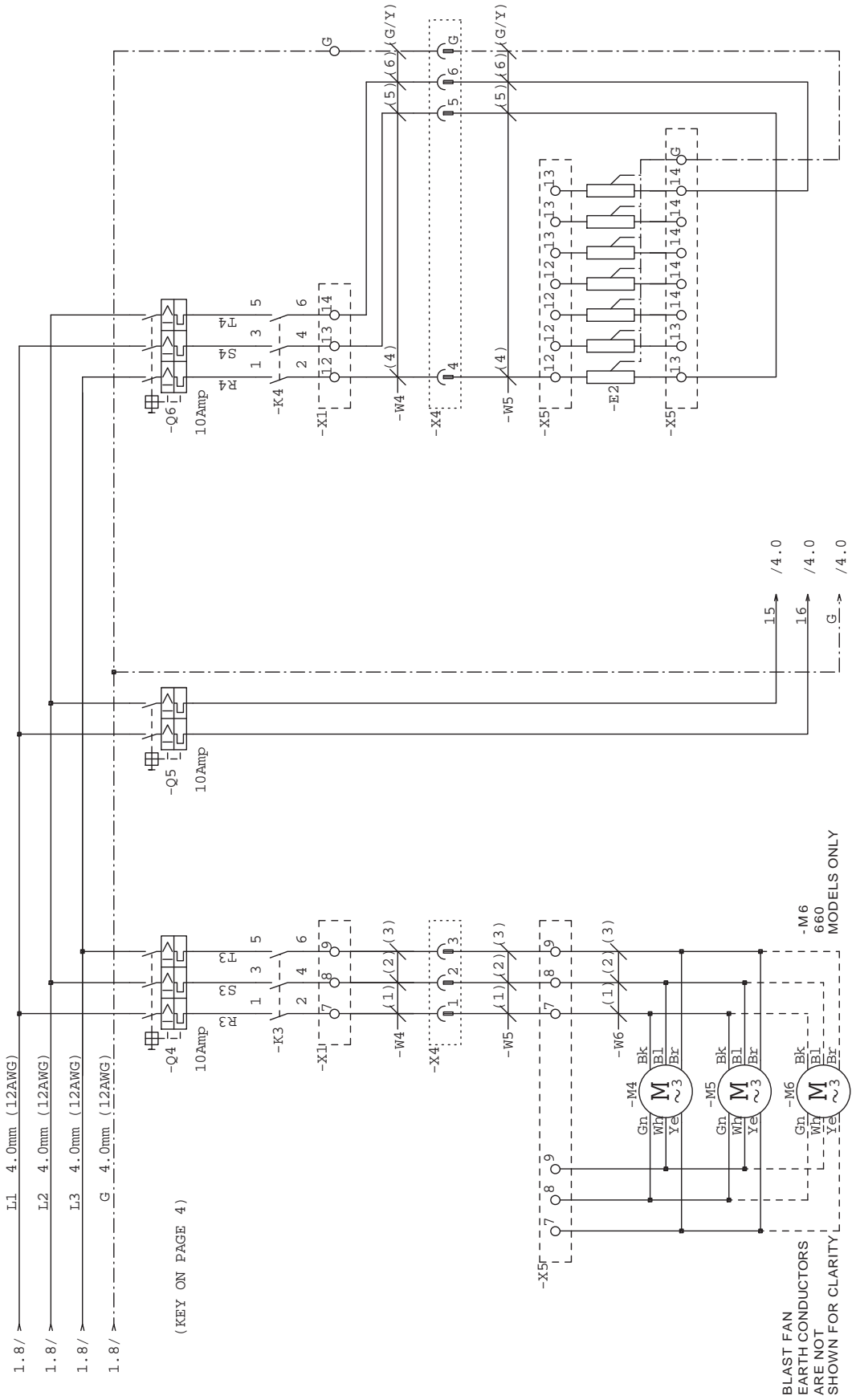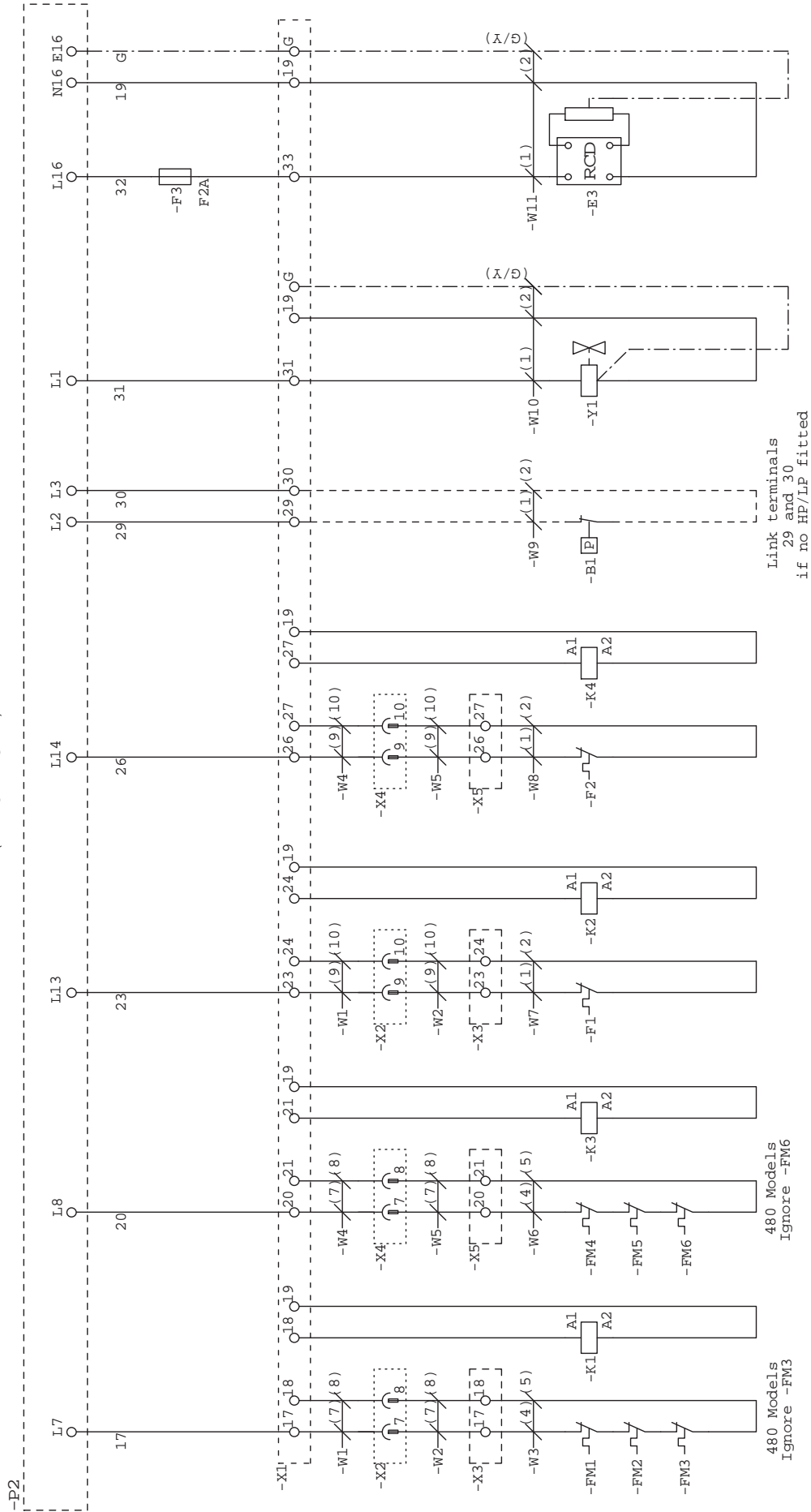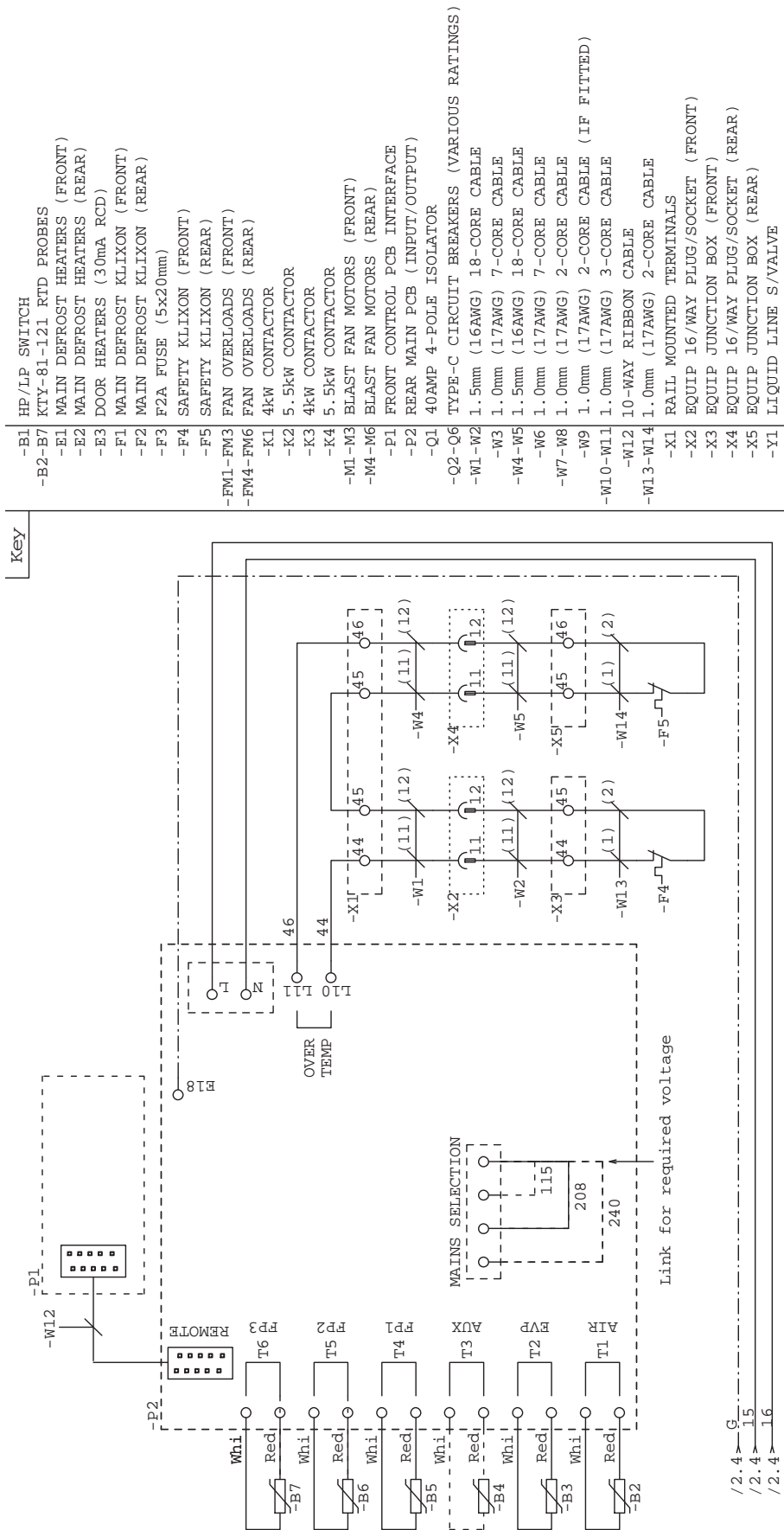
Key

-B1	HP/LP SWITCH
-B2-B7	KTY-81-121 RTD PROBES
-E1	MAIN DEFROST HEATERS (FRONT)
-E2	MAIN DEFROST HEATERS (REAR)
-E3	DOOR HEATERS (30mA RCD)
-F1	MAIN DEFROST KLIXON (FRONT)
-F2	MAIN DEFROST KLIXON (REAR)
-F3	F2A FUSE (5x20mm)
-F4	SAFETY KLIXON (FRONT)
-F5	SAFETY KLIXON (REAR)
-FM1-FM3	FAN OVERLOADS (FRONT)
-FM4-FM6	FAN OVERLOADS (REAR)
-K1	4kW CONTACTOR
-K2	5.5kW CONTACTOR
-K3	4kW CONTACTOR
-K4	5.5kW CONTACTOR
-M1-M3	BLAST FAN MOTORS (FRONT)
-M4-M6	BLAST FAN MOTORS (REAR)
-P1	FRONT CONTROL PCB INTERFACE
-P2	REAR MAIN PCB (INPUT/OUTPUT)
-Q1	40AMP 4-POLE ISOLATOR
-Q2-Q6	TYPE-C CIRCUIT BREAKERS (VARIOUS RATINGS)
-W1-W2	1.5mm (16AWG) 18-CORE CABLE
-W3	1.0mm (17AWG) 7-CORE CABLE
-W4-W5	1.5mm (16AWG) 18-CORE CABLE
-W6	1.0mm (17AWG) 7-CORE CABLE
-W7-W8	1.0mm (17AWG) 2-CORE CABLE
-W9	1.0mm (17AWG) 2-CORE CABLE (IF FITTED)
-W10-W11	1.0mm (17AWG) 3-CORE CABLE
-W12	10-WAY RIBBON CABLE
-W13-W14	1.0mm (17AWG) 2-CORE CABLE
-X1	RAIL MOUNTED TERMINALS
-X2	EQUIP 16/WAY PLUG/SOCKET (FRONT)
-X3	EQUIP JUNCTION BOX (FRONT)
-X4	EQUIP 16/WAY PLUG/SOCKET (REAR)
-X5	EQUIP JUNCTION BOX (REAR)
-Y1	LIQUID LINE S/VALVE

WIRE COLOURS:

Blu : BLUE
Brn : BROWN
G/Y : GREEN/YELLOW
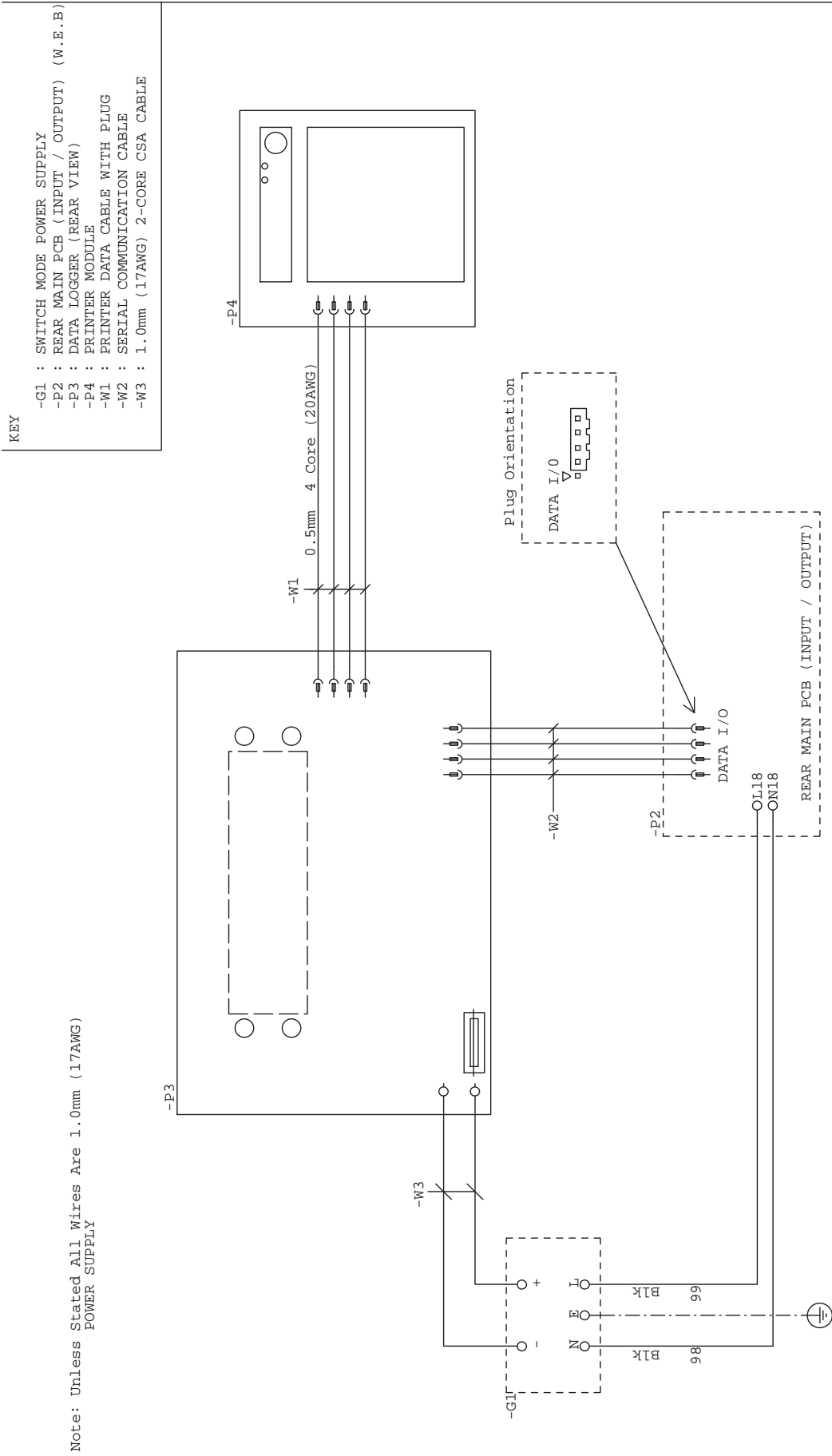Blk : BLACK
Whi : WHITE
Red : RED

NOTES:
- ALL CABLES ARE 1.0mm (17AWG) BLACK
  UNLESS STATED OTHERWISE
- ALL CABLES ARE TRI RATED
- PRINTER OPTION SEE diag1026
- MAINS SUPPLY CONNECTIONS USE
  COPPER CONDUCTORS ONLY

WIRING DIAGRAM FOR DATA LOGGER

KEY

-G1 : SWITCH MODE POWER SUPPLY
-P2 : REAR MAIN PCB (INPUT / OUTPUT) (W.E.B)
-P3 : DATA LOGGER (REAR VIEW)
-P4 : PRINTER MODULE
-W1 : PRINTER DATA CABLE WITH PLUG
-W2 : SERIAL COMMUNICATION CABLE
-W3 : 1.0mm (17AWG) 2-CORE CSA CABLE

Note: Unless Stated All Wires Are 1.0mm (17AWG)
POWER SUPPLY

0.5mm 4 Core (20AWG)

Plug Orientation

DATA I/O

DATA I/O

REAR MAIN PCB (INPUT / OUTPUT)

-W1

-W2

-P2

-P3

-P4

-W3

-G1

+

−

L

E

N

BLK

BLK

99

98

OL18
ON18

CONTROLLER SET UP FOR WBC35/60/75/110

On new machines these control parameters have been factory set and should not need any adjustment. However if the control panel is to be replaced, set-up may be required. In this instance only a suitably qualified person should attempt the set-up of these parameters.

Press any button to enter main menu.
Press **SETTINGS** button followed by the **SETUP** button.
The initial parameters are as follows:

TEXT	ENGLISH
DATE FORMAT	MM/DD/YY
SUMMER TIME	ON
CONTRAST	00

(As Applicable)

Scroll to **PASS CODE** and enter **127** for extended parameters using the '<' and '>' buttons
Enter the pass code by pressing the 'set' button and using the '+' and '-' buttons.
The extended parameters are as follows:

COMPANY NAME	
READ PROBE	AIR
ADR	01
CAB. ADR	01
PRINT BLAST	YES
STOR E CYCLE	168
CHILL HIGH	145°F
CHILL LOW	50°F
FREEZE HIGH	145°F
FREEZE LOW	-1°F
FDA1 H	135°F
FDA1 L	70°F
FDA2 H	70°F
FDA2 L	41°F

SET –0164

62

CONTROLLER SET UP FOR WBC60

On new machines these control parameters have been factory set and should not need any adjustment. However if the control panel is to be replaced, set-up may be required. In this instance, only a suitably qualified person should attempt the set-up of these parameters.

To access parameter put machine into standby mode by pressing ⏻, display shows ` --- `` --- `. Press button marked **3** for five seconds.

Button **2** moves to the next parameter. Button **3** moves to the previous parameter.
To adjust the value of the parameter, hold button **1** in and use buttons **2** and **3** to increase/decrease the value.

Param	Value	Description		Param	Value	Description
tyP	c-F	(ch) chill / (Fr) Freeze / (c-F) Chill-Freeze		3PM	no	Auxiliary Probe (no)/(Pod)defr./(Au)xiliary
ScL	°F	Readout Scale (°C / °F)		3SP	32	Auxiliary Probe set point (°F)
chS	37	Store Chill Stat (°F)		3hy	-4	Auxiliary Probe Hysteresis (°K)
chb	12	Blast Chill Stat (°F)		Ac	AL	Aux.control (Pr) / (AL) / (do) / (Sd)
cbS	-2	Soft Blast Chill T		dS	no	Door switch enable
chh	2	Chill Stat Hysteresis (°K)		PS	no	HP-LP alarm enable (Y/N)
FrS	-11	Store Freeze Stat (°F)		oS1	1	Air probe offset (°K)
Frb	-14	Blast Freeze Stat (°F)		oS2	0	Evaporator probe offset (°K)
Frh	3	Freeze Stat Hysteresis (°K)		oS3	0	Auxiliary probe offset (°K)
rcd	0	Rapid Cool-down Delay (min)		oS4	0	Food probe 1 offset (°K)
dFr	4	Defrost Frequency (per day)		oS5	0	Food probe 2 offset (°K)
dto	20	Defrost Time Out (min)		oS6	0	Food probe 3 offset (°K)
dLi	39	Main Defrost end Temp (°F)		nFP	3	Number of food probes
dty	ELE	Main Defrost Type: OFF/ELE/GAS		SiM	3	Display slow down
drn	2	Drain down Period (min)		Pod	y/n	Storage pod (as applicable)
ddy	5	'dF' delay (min)		bt1	90	Timed blast chill duration (min)
dFb	no	Blast fans in defrost		bt2	240	Timed blast freeze duration (min)
dFS	no	Store fans in defrost		uLt	5	UV lamp cycle length (min)
dFd	2	Restart fan delay (min)		uLF	2	UV fan cycle length (min)
Ath	10	High temperature alarm differential (°K)		crt	5	Compressor(s) rest time (min)
AtL	-8	Low temperature alarm differential (°K)		cdc	5	Compressor(s) duty cycle (min)
Atd	60	Temperature alarm delay (min)		FSb	20	Blast fan speed
Ado	5	Door switch alarm delay (min)		FSS	20	Store fan speed
Acc	9	Condenser clean interval (wks)		Foc	2	Fans off cycle
AuL	30	UV lamp strike detection delay (sec)		nr	1	Cabinet number
ArE	yES	Buzzer re-trigger				

To exit set-up mode, press the button marked *X*
See SET-0164 for printer setup.

(Models with door operated light switch set parameter DS to Yes)

SET – 0171

CONTROLLER SET UP FOR WMBC175/220/350/480/660

On new machines these control parameters have been factory set and should not need any adjustment. However if the control panel is to be replaced, set-up may be required. In this instance, only a suitably qualified person should attempt the set-up of these parameters.

To access parameter put machine into standby mode by pressing ⏻ , display shows `- - -` `- - -` . Press button marked **3** for five seconds.

Button **2** moves to the next parameter. Button **3** moves to the previous parameter.
To adjust the value of the parameter, hold button **1** in and use buttons **2** and **3** to increase/decrease the value.

Param	Value	Description		Param	Value	Description
tyP	c-F	(ch) chill / (Fr) Freeze / (c-F) Chill-Freeze		3PM	no	Auxiliary Probe (no)/(Pod)defr./(Au)xiliary
ScL	℉	Readout Scale (℃ / ℉)		3SP	32	Auxiliary Probe set point (℉)
chS	37	Store Chill Stat (℉)		3hy	-4	Auxiliary Probe Hysteresis (ºK)
chb	12	Blast Chill Stat (℉)		Ac	AL	Aux.control (Pr) / (AL) / (do) / (Sd)
cbS	-4	Soft Blast Chill T		dS	no	Door switch enable
chh	2	Chill Stat Hysteresis (ºK)		PS	no	HP-LP alarm enable (Y/N)
FrS	-11	Store Freeze Stat (℉)		oS1	1	Air probe offset (ºK)
Frb	-14	Blast Freeze Stat (℉)		oS2	0	Evaporator probe offset (ºK)
Frh	3	Freeze Stat Hysteresis (ºK)		oS3	0	Auxiliary probe offset (ºK)
rcd	0	Rapid Cool-down Delay (min)		oS4	0	Food probe 1 offset (ºK)
dFr	4	Defrost Frequency (per day)		oS5	0	Food probe 2 offset (ºK)
dto	20	Defrost Time Out (min)		oS6	0	Food probe 3 offset (ºK)
dLi	39	Main Defrost end Temp (℉)		nFP	3	Number of food probes
dty	ELE	Main Defrost Type : oFF/ELE/GAS		SiM	3	Display slow down
drn	2	Drain down Period (min)		Pod	y/n	Storage pod (as applicable)
ddy	5	'dF' delay (min)		bt1	90	Timed blast chill duration (min)
dFb	no	Blast fans in defrost		bt2	240	Timed blast freeze duration (min)
dFS	no	Store fans in defrost		uLt	5	UV lamp cycle length (min)
dFd	2	Restart fan delay (min)		uLF	2	UV fan cycle length (min)
Ath	18	High temperature alarm differential (ºK)		crt	5	Compressor(s) rest time (min)
AtL	-14	Low temperature alarm differential (ºK)		cdc	5	Compressor(s) duty cycle (min)
Atd	60	Temperature alarm delay (min)		FSb	20	Blast fan speed
Ado	5	Door switch alarm delay (min)		FSS	20	Store fan speed
Acc	9	Condenser clean interval (wks)		Foc	2	Fans off cycle
AuL	30	UV lamp strike detection delay (sec)		nr	1	Cabinet number
ArE	yES	Buzzer re-trigger				

To exit set-up mode, press the button marked *X*
See SET-0164 for printer setup.

(Models with door operated light switch set parameter DS to Yes)

SET – 0154

BEVERAGE-AIR® CORPORATION
LIMITED WARRANTY
Valid only in the United States of America & Canada

THREE (3) YEAR PARTS AND LABOR WARRANTY
(CF/CT MODELS CARRY ONE (1) YEAR PARTS AND LABOR WARRANTY LIMITED TO FIFTEEN (15) MONTHS FROM DATE OF SHIPMENT):

Beverage-Air Corporation warrants to the original purchaser of Beverage-Air branded equipment, including all parts thereof, that such equipment is free from defects in material and workmanship, under normal use, proper maintenance and service as indicated by Beverage-Air installation and operation instructions, for a period of three (3) years from the date of installation, or thirty-nine (39) months from the date of shipment from the manufacturer, whichever is earlier. Normal wear type parts, such as light bulbs/lamps and gaskets are not covered by this warranty. For the purpose of this warranty, the original purchaser shall be deemed to mean the individual or company for whom the product was originally installed.

Our obligation under this warranty shall be limited to repairing or replacing, including labor, any part of such product, which proves thus defective. Beverage Air reserves the right to examine any product claimed to be defective. The labor warranty shall be for self-contained units only and for standard straight time, which is defined as normal service rate time, for service performed during normal working hours. Any service requested outside of a servicer's normal working hours will be covered under this warranty at the normal rate and any additional overtime rate will be the responsibility of the equipment purchaser.

Any part determined to be defective in the product should be returned to the company within thirty (30) days under the terms of this warranty and must be accompanied by a record of the cabinet model, serial number, and identified with a return material authorization number (RMA#) issued by the manufacturer.

Special installation/applications, including remote locations, are limited in coverage by this warranty. Any installation that requires extra work, and/or travel, to gain access to the unit for service is the sole responsibility of the equipment purchaser.

Improper operation resulting from factors, including but not limited to, improper or negligent cleaning and maintenance, low voltage conditions, inadequate wiring, and accidental damage are not manufacturing defects and are strictly the responsibility of the purchaser.

Condenser coils must be cleaned at regular intervals. *Failure to do so can cause compressor malfunction and will void warranty.* Although cleaning requirements vary in accordance with the operation of various products, Beverage-Air recommends a minimum monthly cleaning.

ADDITIONAL TWO (2) YEAR COMPRESSOR PART WARRANTY

In addition to the warranty set forth above, Beverage-Air warrants the hermetically/semi-hermetically sealed compressor (part only) for an additional two (2) years beyond the first three (3) year warranty period; not to exceed sixty-three (63) months from the date of shipment from Beverage-Air, provided upon receipt of the compressor, manufacturer examination shows the sealed compressor to be defective. This extended warranty does not cover freight for the replacement compressor or freight for return of the failed compressor. Also, this extended compressor-part only warranty does NOT apply to any electrical controls, condenser, evaporator, fan motors, overload switch, starting relay, capacitors, temperature control, filter/drier, accumulator, refrigeration tubing, wiring harness, labor charges, or supplies which are covered by the standard warranty above.

NO CLAIMS CAN BE MADE AGAINST THIS WARRANTY FOR SPOILAGE OF PRODUCTS, LOSS OF SALES OR CONSEQUENTIAL DAMAGES.

THE FOREGOING WARRANTIES ARE EXPRESSLY GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, OR STATUTORY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED, AND ALL OTHER OBLIGATIONS OR LIABILITIES ON OUR PART, AND WE NEITHER ASSUME, NOR AUTHORIZE ANY OTHER PERSON TO ASSUME FOR US, ANY OBLIGATION OR LIABILITY IN CONNECTION WITH THE SALE OF SAID REFRIGERATION UNITS OR ANY PARTS THEREOF.

This warranty shall not be assignable and shall be honored only in so far as the original purchaser.

This warranty does not apply outside the limits of the United States of America and Canada, nor does it apply to any part that has been subject to misuse, neglect, alteration, accident, or to any damage caused by transportation, flood, fire, acts of terrorism, or acts of God.

LIMITATION OF LIABILITY:
Beverage-Air Corporation or their affiliates shall not be liable for any indirect, incidental, special or consequential damages, or losses of a commercial nature arising out of malfunctioning equipment or its parts or components thereof, as a result of defects in material or workmanship.

THE ORIGINAL OWNER'S SOLE AND EXCLUSIVE REMEDY AND BEVERAGE-AIR'S SOLE AND EXCLUSIVE LIABILITY SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT OF PARTS OR COMPONENTS CONTAINED IN THE EQUIPMENT IDENTIFIED ABOVE WHICH UNDER NORMAL USE AND SERVICE MALFUNCTION AS A RESULT OF DEFECTS IN MATERIAL OR WORKMANSHIP, SUBJECT TO THE APPLICABLE PROVISIONS AND LIMITATIONS STATED ABOVE.

williams
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