

DRAWER FRIDGE

USER MANUAL



**PORTABLE
REFRIGERATION**

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Safety information

Failure to follow these instructions may result in damage to the appliance or injury to yourself and others.

- Suitable for camping use.
- This product is not designed for marine applications.
- Do not expose the appliance to water, rain, corrosive liquids or strong chemicals.
- Do not operate near explosive or flammable gases or materials.
- Do not operate or store in high-temperature environments.
- Always operate this product on a stable surface.
- Do not invert the refrigerator during operation or storage.
- Do not store explosive or hazardous materials inside the fridge.
- Do not use in restricted spaces or areas with limited ventilation.
- Do not block or cover the ventilation holes.
- Do not push objects of any kind into ventilation slots or holes.
- Do not use the appliance for purposes other than indicated in this manual.
- This appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.
- Children being supervised not to play with the appliance.
- Do not attempt to service this product yourself. Refer to qualified technician.
- Ensure electrical supply meets the input specifications listed on the appliance rear panel.
- The appliance may be connected to more than one source of energy.
- **WARNING :** When positioning the appliance, ensure the supply cord is not trapped or damaged.
- **WARNING :** Do not locate multiple portable socket-outlets or portable power supplies at the rear of the appliance.
- Do not use damaged or modified power cables.
- Do not handle electrical cables with wet hands.
- Do not fill the interior with liquid or ice without suitable water-tight containers.
- Store foods in original packaging or suitable containers.
- Clean interior surfaces that may be in contact with food regularly.

This appliance is intended to be used in household and similar applications such as :

- Staff kitchen areas in shops, offices and other working environments.
- Farm houses and by clients in hotels, motels and other residential type environments.
- Bed and breakfast type environments.
- Catering and similar non-retail applications.

When used in a mobile environment :

- Secure the appliance with straps or a mounting fixture designed for this purpose.
- Ensure cables are not under tension and are protected from areas of movement.
- Ensure cables are not exposed to sharp edges or risk of crushing.
- Use the appropriate cable size and type for dedicated wiring circuits.

Introduction

Thank you for your purchase of a National Luna Drawer Fridge.

This product is part of a family of high-efficiency, high-quality refrigerators designed specifically for drawer systems and low-clearance installs in the back of SUV's , off-road vehicles and canopy setups.

The Drawer Fridge range inherits the rugged design features and optimal performance of the LEGACY and LEGACY SMART QC range all within a compact low-profile design.

For compatibility with various drawer system layouts and space-constrained applications, the main door of the fridge can be re-configured to open in the opposite direction.

All models can be powered directly from a 12V or 24V battery. As an optional feature, these fridges can also be powered from a 100V to 240V AC power supply.

Standard features included in this range: Bluetooth® faceplate, low battery protection, interior LED light, built-in bottle opener, folding carry handle (that can be utilised as a drawer handle), built-in base mounting points for drawer system installations as well as a reinforced base for side rail mounting.

Models covered in this manual

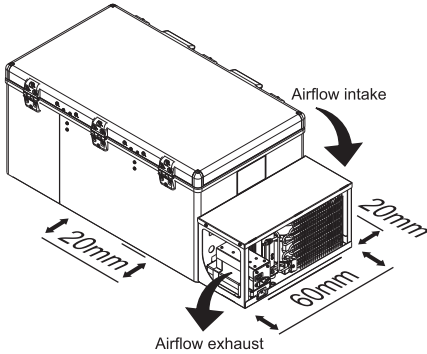
Single compartment :	NL35, NL40, NL60
Dual compartment :	NL35, NL40, NL60, NL94

Symbols and terms used in this document

Some symbols are used in this manual or on the product.
These symbols have the following meanings :

	Electrical hazard. Risk of electric shock.
	Flammable. Risk of fire
	Important note. Please read carefully
	Tip or useful information
AC	Alternating Current electrical supply.
DC	Direct Current electrical supply.

Ventilation clearance



Openings at the back and sides of the external compressor tray are provided for ventilation, to ensure reliable operation and to protect against overheating when installed in a drawer system application. These openings should never be blocked or covered.

A minimum clearance of 60mm on the back and 20mm on the sides of the fridge is recommended for ventilation.

This product should never be placed in a built-in installation with limited airflow unless adequate ventilation is provided.

Closed compartments should provide for cool air intake and warm air exhaust.



A blocked air intake will result in poor cooling performance and increased power consumption.

Guide to electrical wiring

This appliance is optimised for use within drawer system applications. Standard 12V accessory sockets used in many motor vehicles can be used but may result in unreliable operation due to thin wiring and high voltage loss. For long-term reliable operation in a motor vehicle or other mobile applications, it is recommended to install dedicated 12V / 24V wiring and suitable DC-rated connectors.

A minimum cable gauge of 4mm² (12 AWG) should be used between the fridge and power source (battery). For safety, a 15A fuse should be installed close to the battery on the positive cable.

When connecting the AC supply, make sure the cable plug is appropriate for the region or country of use and the cable is not damaged. Verify the AC supply voltage is within the fridge operating voltage range. Do not place AC plug adaptors or power supplies on or behind the fridge.

Use products like a drag chain to protect all cables from potential damage, particularly in applications where the fridge or cables are likely to move, such as in sliding or drawer systems. Protect the cables from sharp edges and areas that may be exposed to high heat.



DO NOT use a modified or damaged power cable. Doing so may result in serious injury or damage to the appliance.



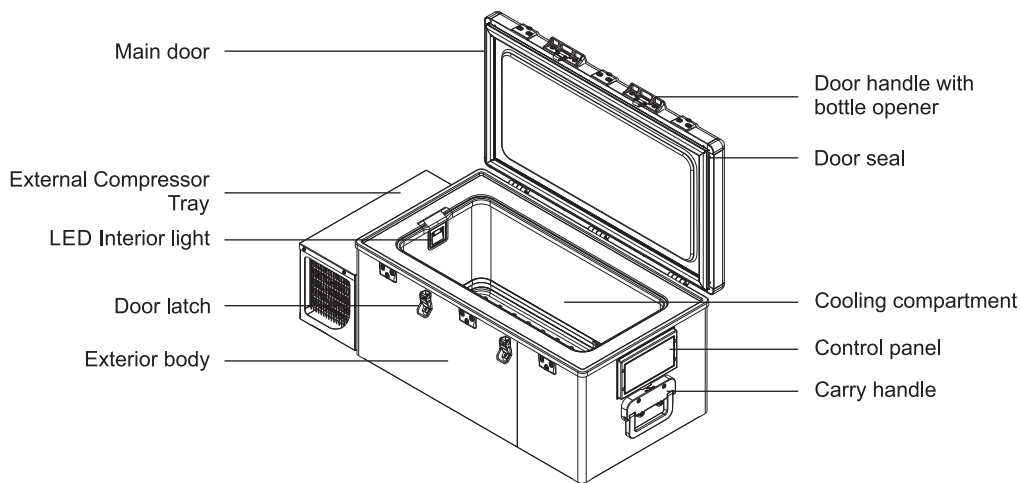
If dedicated wiring is installed to supply the fridge, a 15A fuse should be fitted on the positive cable near to the battery.



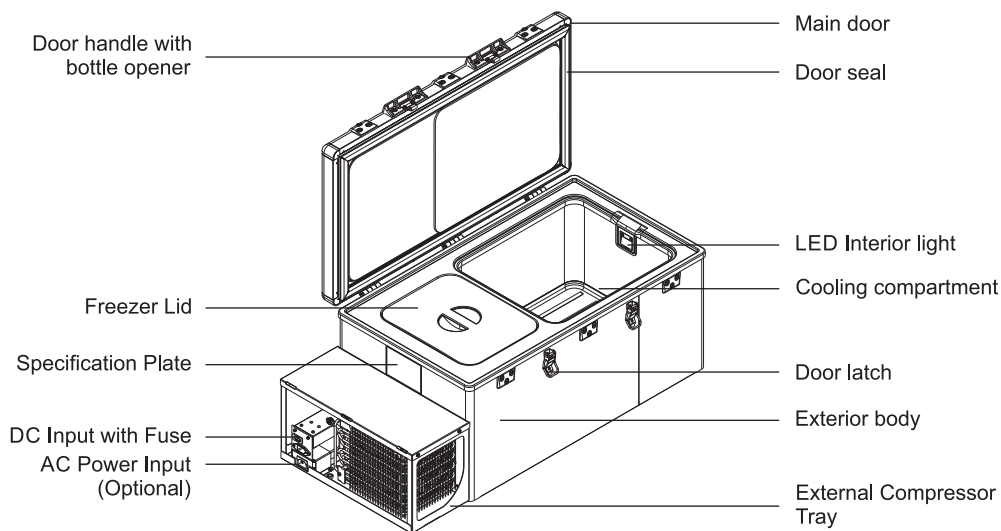
Before installation of any additional wiring, check that this action will not void any vehicle warranty or service agreement.

External features

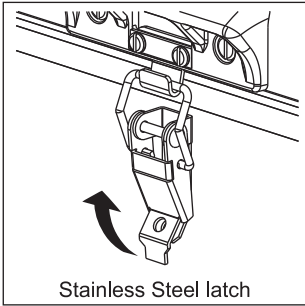
Single Compartment models : NL35, NL40, NL60



Dual Compartment models : NL35, NL40, NL60, NL94



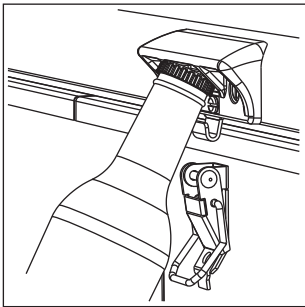
Latches and Handles



These fridges have two lockable stainless steel door latches which are used to keep the main door closed securely.

These latches feature a locking hole that can be used with locks or tamper-evident seals.

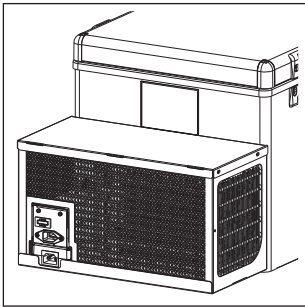
Bottle-opener plate



Each door handle has an integrated bottle-opener plate. This can be used to remove standard bottle caps.

Hook the bottle cap on the metal plate and pull the bottle upwards against the handle to detach the bottle cap.

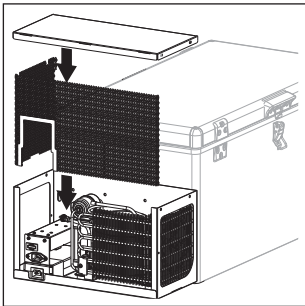
Protective gauze (optional accessory)



For applications where the compressor area is exposed, a protective gauze is available as an optional accessory.

This gauze will protect the compressor tray's internal components from any external impact forces while still providing adequate ventilation for the compressor assembly.

Due to the limited internal space on a NL35 Drawer Fridge's compressor tray, the protective gauze utilises a L-shape. This gauze will protect the left and front of the compressor tray, while the close proximity of the condenser on the right, will protect the fan assembly on the right side of the compressor tray.



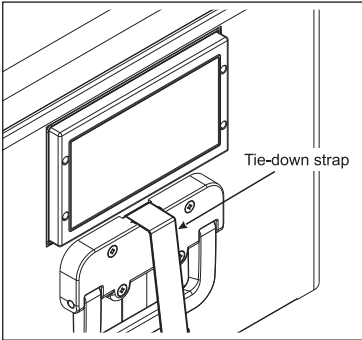
The NL45 and NL60 Drawer Fridge both have a wider compressor tray and therefore feature a U-shaped protective gauze, which protects the entirety of the compressor tray.

Protective Gauze - Fitting instruction

To install the protective gauze, simply remove the compressor tray's cover and insert the gauze from the top.

The gauze has corresponding cut-outs that match the internal features of the compressor tray. A cover plate is fitted to the front of the gauze which surrounds the power input, allowing easy access to the cable inputs.

Securing fridge in a mobile application - *Using tie-down strapping features*



Carry handle

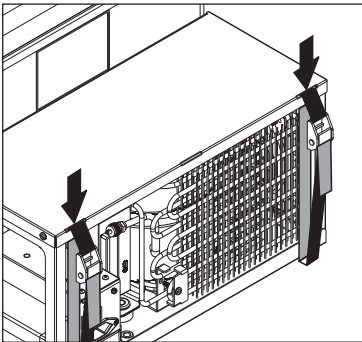
The carry handle, located at the front of the fridge, has a tie-down slot that can be used with a standard 25mm strap.

This feature can be used to secure the fridge to tie-down points at the front of the fridge.

Take care not to over-tighten the strap as this can cause damage to the handle or fridge body.



Only use the provided tie-down slot.
Do not strap to the folding hand-hold.



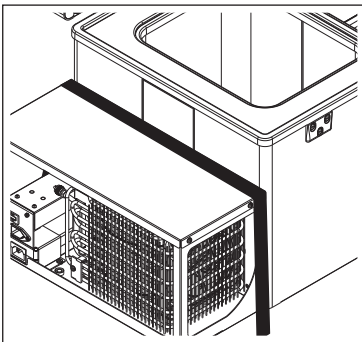
Compressor Tray Cover - *Tie-down slot*

The compressor tray's cover, located at the back of the fridge, has three tie-down slots.

The outer two are recommended for use with standard 25mm straps to secure the fridge to a drawer base or baseplate.



Take care not to over-tighten the tie-down straps as this can cause damage to the compressor tray cover.



Compressor Tray Cover - *Tie-down surface*

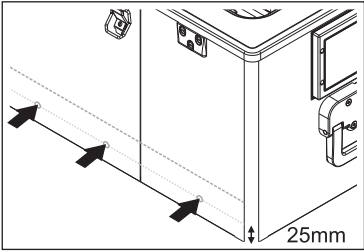
The compressor tray's cover also provides a secure tie-down surface that can be used with a standard 25mm strap, which can be secured over the top of the tray (from one side to the other).

This tie-down option is recommended for drawer bases or a baseplate that is longer than the fridge or where there is limited space available behind the baseplate for using the provided tie-down slots.



Take care not to over-tighten the tie-down straps as this can cause damage to the compressor tray.

Securing fridge in a mobile application - *Using built-in mounting features*

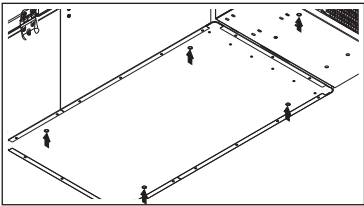


Side rail mounting points

These fridges are supplied standard with a reinforced base that has a 45mm high surrounding edge.

This high-strength base provides a stable support for drilling and securing mounting features, such as side rails or an angle bracket, directly onto the fridge body.

The recommended drilling height is 25mm from the base of the fridge.

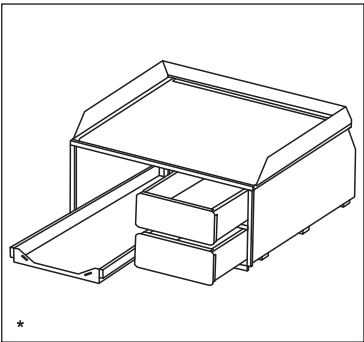


Base mounting features

To accommodate various drawer system layouts, these fridges further include five M8 mounting points (four on the fridge baseplate and one at the bottom of the compressor tray).

These built-in mounting features allow the fridge to be secured to the base of any drawer (see page 29).

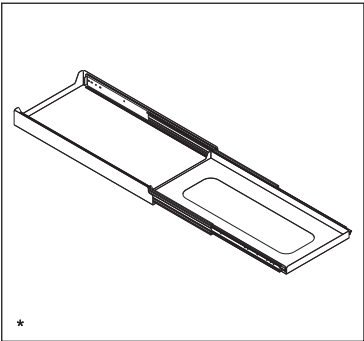
Securing fridge in a mobile application - *Drawer system installation options*



Using a built-in drawer system (*standard installation*)

Various drawer manufacturers have designed a drawer system that accommodates this new fridge range into their setups.

By using a dedicated drawer, it allows the fridge to be secured to the vehicle load area without additional straps, as part of a complete drawer system.



Using a drawer or tip slider baseplate (*optional installation*)

To accommodate custom setups, drawer manufacturers have either a drawer baseplate assembly or a tip slider available as an optional installation.

This option allows a dedicated *Drawer Fridge* baseplate assembly to be fitted into customs setups.

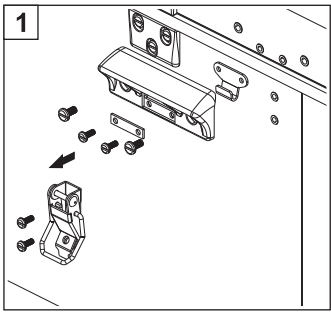
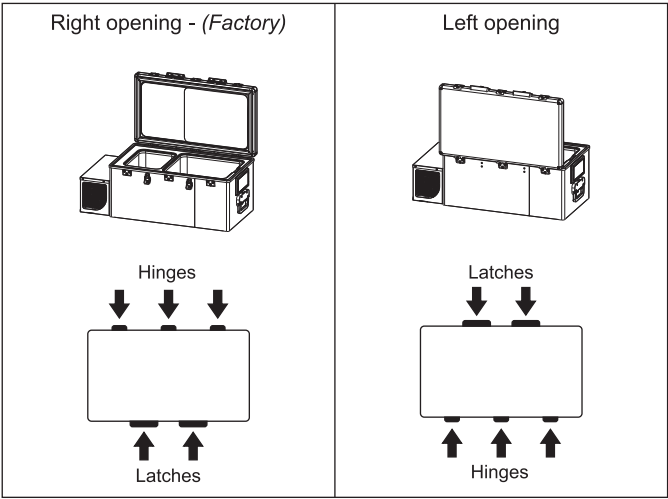
When using this configuration, the base mounting or strapping features can be utilised to secure the fridge to the baseplate during mobile applications.

* The above drawer system and baseplate drawings are for illustration purposes only and are not an exact representation of the final product offered by drawer system manufacturers.

Changing door configuration

In order to accommodate various drawer systems, this fridge range has the ability to shift the door opening direction from the right to the left side.

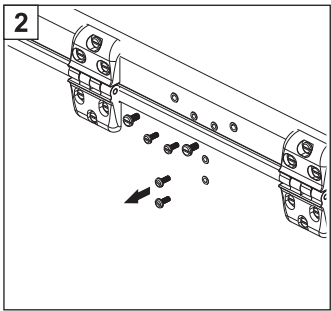
This can be useful for applications with limited access or restricted drawer layout configurations.



Remove the door handles & latches

Remove the two door handles and latches from their current location. The handle includes a metal latch hook and bottle-opener strip.

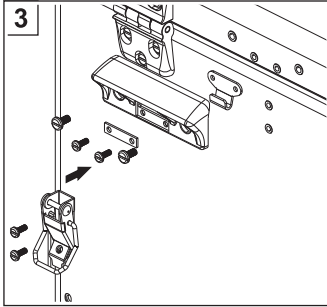
Take note of the order that they are removed.



Remove handle & latch blanking screws

Remove the two sets of blanking screws from the new handle and latch locations on the opposite side of the fridge body.

Changing door configuration continues

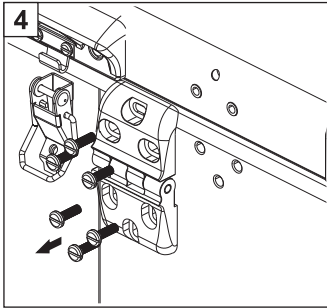


Attach the door handles & latches

Using the same screws, attach the two handles and latches to the new location.

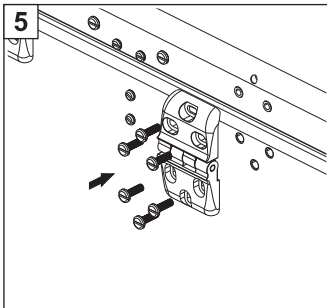
Note that the metal door hook fits underneath the plastic handle.

Align the lower latch to the door hook and tighten the screws.



Remove the hinge covers & hinges

Remove the upper and lower half of the hinge covers and hinges from their current location on the fridge body and door.

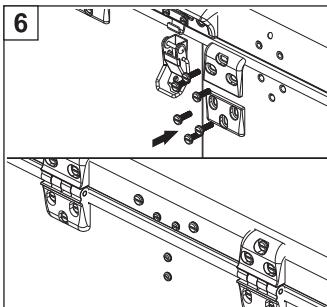


Attach the hinges

Attach the loose hinges to their new location on the opposite side of the fridge body and door, using the same screws.

It is best to attach the lower half of the hinge set to the fridge body first.

Before tightening the screws, check the tension on the door seal (refer to page 25 for details).

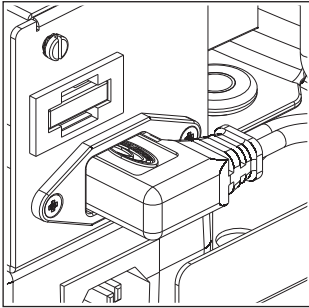
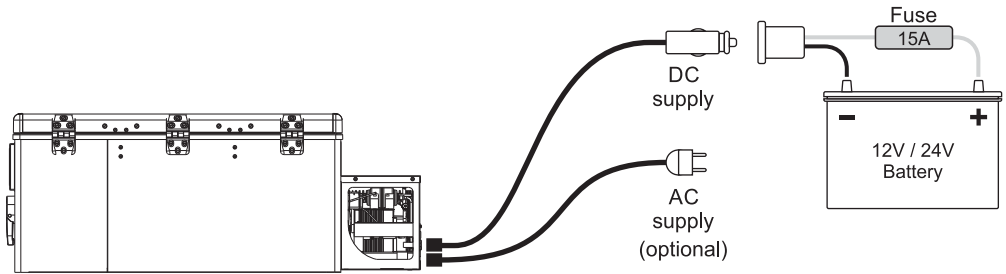


Cover unused locations

Use the hinge covers removed earlier to cover the unused hinge locations.

Use the set of handle and latch blanking screws removed earlier on the unused handle and latch locations.

Connecting power



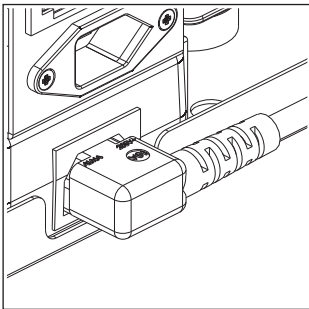
DC supply input

For battery-powered applications, connect the supplied DC cable (or approved replacement) into the DC input socket and ensure it is properly inserted.

Connect the other end to the DC power source.



Ensure polarity is correct before connecting the DC supply. Incorrect polarity may result in permanent damage.



AC supply input

For AC powered sources, connect the supplied AC cable (or approved IEC cable) to the AC input socket and ensure it is properly inserted.

Connect the other end to the AC supply.

Please ensure that the Battery Protection is set to Medium (see Battery Protection settings on page 15)



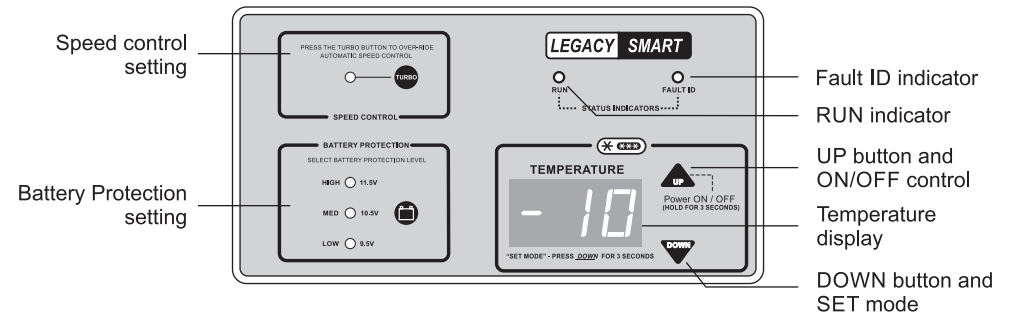
AC and DC supply can be connected simultaneously. The fridge will switch between the available power sources automatically. Priority is given to AC power.

User interface

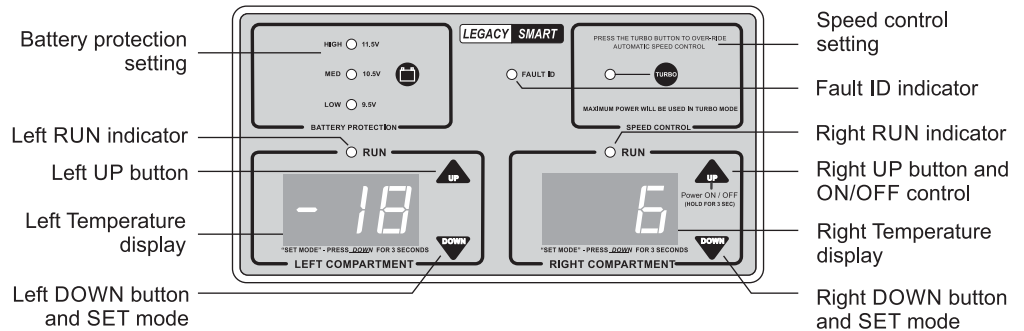
Depending on the fridge model, the control panel will provide either a Single or Dual temperature interface.

Both types provide Battery Protection and Speed control settings as well as Fault and Run status indicators.

Single control panel



Dual control panel

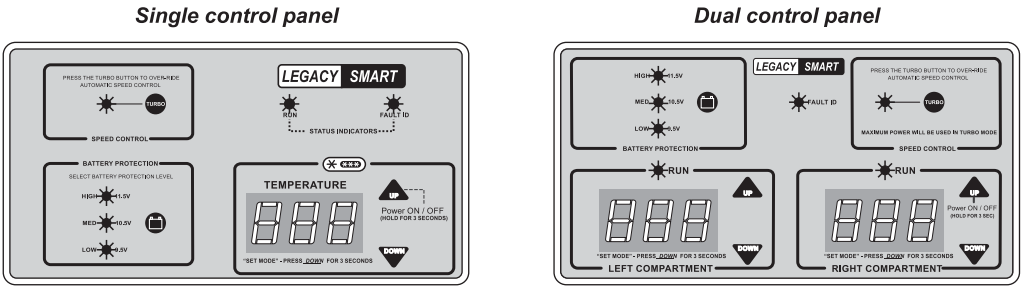


Start display sequence

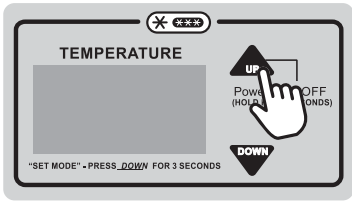
The control panel is programmed to remember its last power state. As a result, when powering on the fridge there is two start-up sequences that can occur.

Sequence 1: Display powered off

If the fridge was powered off prior to the power source being disconnected, the following start display sequence will occur on both a Single and Dual compartment fridge's control panel.



Once the fridge is connected to a power source, the display will briefly flash "888" while all the lights on the control panel will flash where after the control panel will remain off (which was the previous power state).



To power on the fridge, simply press and hold the UP button for approximately 3 seconds and the display will power on.

Upon start-up the fridge will follow the standard start display sequence (Sequence 2 below).

In the case that the display remains off, check the fridge's interior light. If the light is on when connected to a power source, this means the fridge has power and the display is only powered off.

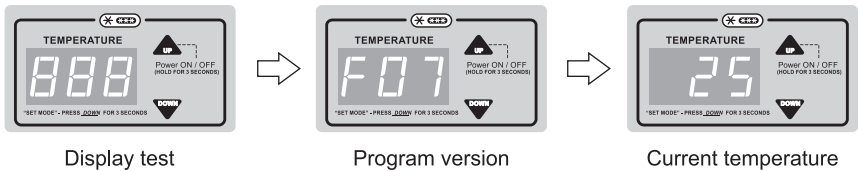
Sequence 2: Display powered on

In the case that the fridge was still powered on when the power source was disconnected, the following start display sequence will occur for both a Single and Dual compartment fridge when power is applied.

During this initialization period, all digits will be turned on (showing "888" on the display), followed by a version number (i.e. F07). This 'F07' identifies which program version the fridge is running.

The start sequence will end with a display of the currently measured temperature. The fridge is now ready for operation.

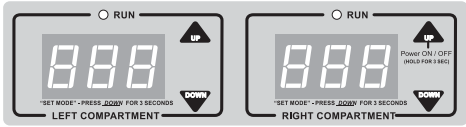
Single compartment models



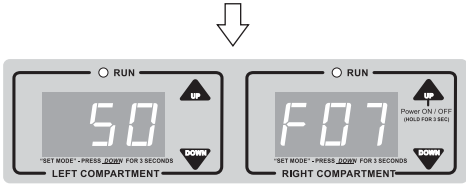
Start display sequence continues

Dual compartment models

Dual compartment models will show the configured model on the left display and the program version on the right display.



Display test.



Configured model and program version.
(NL50 shown in this example)

The *Drawer Fridge* range is a low-profile equivalent of existing NL fridges. Their faceplates therefore need to be programmed to the model number of the inner bin it is based on. The model number suited to these fridges are as follows:

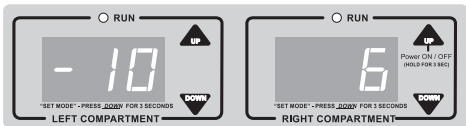


Single Compartment:

- * NL35 Single Drawer Fridge: NL52 (program)
- * NL40 Single Drawer Fridge: NL55 (program)
- * NL60 Single Drawer Fridge: NL80 (program)

Dual Compartment:

- * NL35 Dual Drawer Fridge: NL50 (program)
- * NL60 Dual Drawer Fridge: NL90 (program)
- * NL40 Dual Drawer Fridge: NL60 (program)
- * NL94 Dual Drawer Fridge: NL90 (program)



Current temperatures are shown



If the configured model number does not match the physical model of the fridge, there can be unexpected behaviour.

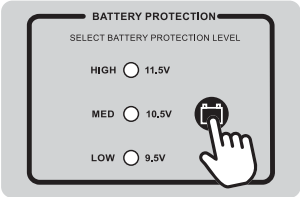
Contact technical support for instructions on how to reset the model configuration.



Please note that the F07 code reflected on the display upon start-up is the control panel's *Firmware* version and not indicative of a fault or error code.

A fridge error is indicated using the fault ID light. The number of flashes determines the type of fault detected (see page 17).

Battery protection



Battery protection is used to prevent excessive discharge and potential damage to a source battery. The choice of setting will depend on the specific application.

Press and hold the battery button to cycle through available options.

HIGH is recommended when powering the fridge from a vehicle main battery. This provides the highest protection level.

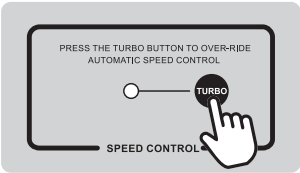
MED is recommended for most applications where a deep-cycle auxiliary battery is used to power the fridge.
(this is the preferred setting on AC power)

LOW can be used to prioritize fridge run-time over battery discharge.

12V	STOP	RESTART
HIGH	11.5V	12.5V
MED	10.5V	11.8V
LOW	9.5V	10.9V

24V	STOP	RESTART
HIGH	24.6V	26.0V
MED	23.0V	24.5V
LOW	21.3V	22.7V

Speed control



Under normal conditions, the fridge will automatically balance cooling performance and efficiency. This is preferred for most applications.

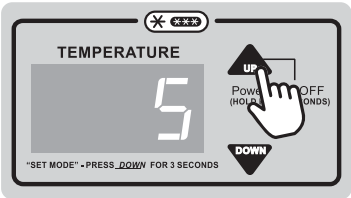
TURBO mode will increase cooling performance but at the expense of increased energy consumption.

The **TURBO** mode can be toggled by holding the **TURBO** button for 3 seconds.



TURBO mode may increase power consumption.

Standby / Off mode



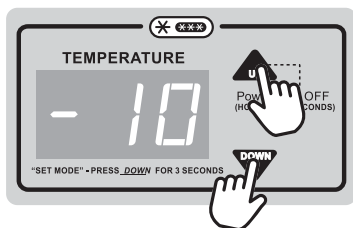
The fridge can be put into a standby mode by holding the **UP** button for 3 seconds.
(right compartment control on Dual models)

Press and hold the **UP** button again to exit standby and return to normal operation.

The **ON/OFF** state is saved if power is removed. This setting is restored when power is applied.

When in standby mode, the fridge interior light will remain operational.

Choosing the temperature display units (°C / °F)



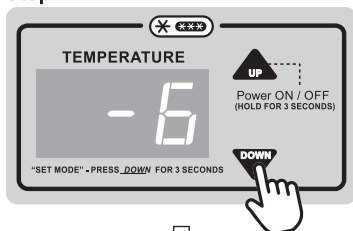
The temperature display units can be toggled between °C / °F by briefly pressing both UP and DOWN buttons together.

The display will then change to the selected units.

On Dual models, press the two buttons on the Right Compartment.

Setting the desired temperature

Step 1:

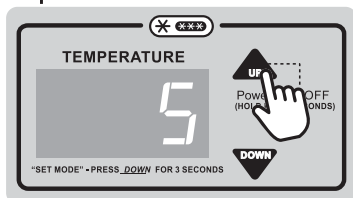


The compartment temperature can be adjusted by entering the SET mode on the respective compartment :

Hold the DOWN button until the display begins to flash.

The procedure is the same for both controls on Dual-compartment models.

Step 2:

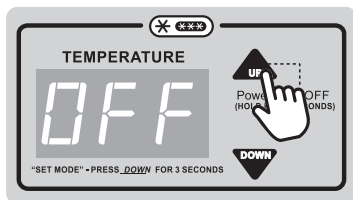


When the display is flashing, press UP or DOWN to increase or decrease the compartment temperature.

When the desired value is reached, release all buttons. After 10 seconds, the display will stop flashing and the new setting will take effect.

The display will then return to showing the current temperature.

Disabling a compartment - dual models only



On Dual models, it is possible to independently turn off the left or right compartment.

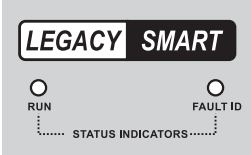
This can be used to reduce power consumption if only one compartment is needed.

To turn off a compartment, enter the settings mode (Step 1 above)

Increase the temperature setting until "OFF" is displayed. Release the buttons. This compartment is now disabled.

To re-activate the compartment, enter the set mode (Step 1 above) and set any desired temperature (Step 2 above).

RUN indicator



The RUN status indicator will show when the fridge compressor is running. Dual compartment models will have two RUN indicators which will show which compartment is being cooled.

- OFF - The compartment is not cooling.
- ON - The compressor is running and the compartment is being cooled.

Flashing (1/2 second on, 1/2 second off) -
Start delay before compressor runs.

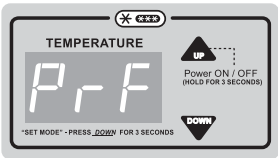
Flashing (1 second on, 1 second off) -
Compressor is slowing down before stopping.

Fault ID diagnostics

There are several parameters being monitored by the fridge during operation. If a fault is detected, it will be identified by the Fault-ID indicator flashing between 1 and 6 times within a 4-second period.

The number of flashes will indicate which fault has been detected.

1 flash	Low voltage - The DC supply voltage is lower than the chosen battery protection level. Check the battery and all wiring from the battery. This can also occur with an AC power supply fault.
2 flash	Fan over-current - This can occur if the ventilation fan is blocked or damaged. Check the fan intake for signs of excess dust or debris. This can also occur if the fan has failed.
3 flash	Motor start error - The compressor is unable to start. This can occur in extreme environments with high temperatures and heavy loads. This error can be temporary and may clear automatically.
4 flash	Minimum speed error - The compressor is unable to maintain a minimum speed. This can be an electronics failure or over-pressurised system.
5 flash	Over-temperature - The electronic driver is too hot and has shut down. This can occur if the ventilation intake is blocked or the fan is damaged.
6 flash	Driver failure - The electronic driver has suffered a failure. This may be permanent damage and may require replacement.



In addition to the 6 flash codes, if a fault is detected on the internal temperature sensors, a “PrF” message is displayed. This indicates a “Probe Failure” and that the sensor may need to be replaced.

Dual models have two sensors. A “PrF” message may be displayed on either the left or right display - this will show which of the two sensors is problematic.

NL CONNECT Mobile application



Legacy SMART fridges include Bluetooth® wireless technology that allows the status and settings to be monitored by a connected mobile device.

The NL CONNECT application allows the user to observe the fridge status, adjust settings and be notified of fault conditions.

The NL CONNECT application is available for iOS and Android devices and can be downloaded from the respective APP stores.

Scan the QR code below or type the web address into your mobile device to access download links.



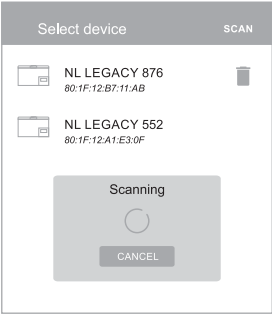
www.nationalluna.com/nlconnect



NL CONNECT requires that Bluetooth® and location services are enabled on the mobile device.

Supports : iOS version 13 or later
 Android version 6 or later

Scanning and connecting to devices



When opening the CONNECT APP, a scan for nearby devices will start automatically.

A scan can also be started manually by tapping SCAN.

Nearby compatible devices will be listed with their default names. If a custom name was set for a previously-connected device, this name will be displayed instead.

The scan process must complete or be cancelled before connecting to a device.

Tap a listed device to establish a connection with it.



When connecting with a new device, a prompt to enter the PIN will be displayed.

Enter the fridge serial number as displayed on the back of the fridge and then press ENTER.

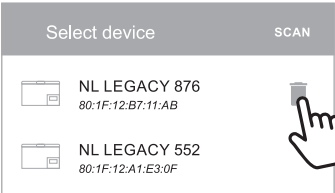
** see page 30 for details about where to locate the serial number.*

If the PIN is correct, a connection to the fridge will be established.



If a device has been previously connected, it will be remembered and entering a PIN will not be required.

Removing remembered devices



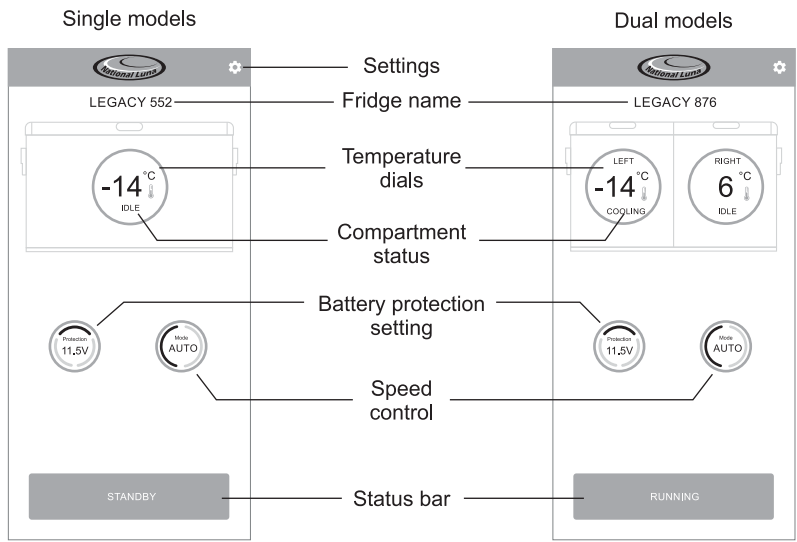
Previously-connected devices will be remembered by the APP and listed with a trash icon in the scan list.

In order to forget a device, tap the trash icon and then OK on the confirmation prompt.

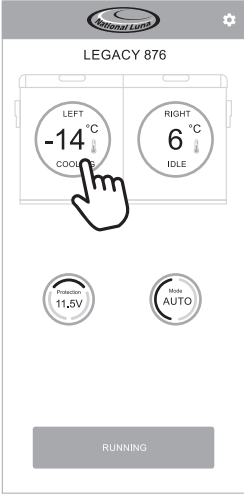
This will forget the device PIN and any custom name that may have been set for it.

CONNECT Dashboards

When a connection is established, a dashboard relevant to the connected device will be shown. This dashboard will show the device name, temperatures, setting options and the current status.

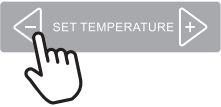


Setting desired temperatures



Temperature dials will show the current temperature and whether the compartment is cooling or idle.

To adjust a temperature setting, tap on the respective temperature dial. The current setting is displayed.

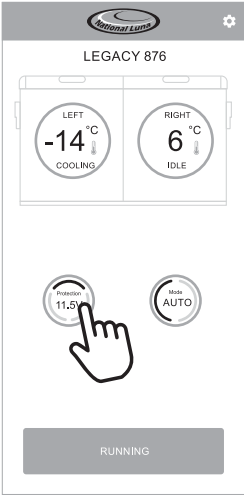


The status bar will now show controls to increase or decrease the setting. Press + to increase temperature. Press - to decrease temperature.



Press OK to complete the setting.

Change battery protection level



To adjust the battery protection level, press the PROTECTION dial. Each press will cycle between the available options.



11.5V (High) - This is best when the fridge is powered by a vehicle main battery and the least discharge level is preferred.



10.5V (Med) - Best for most applications where the fridge is powered by a deep-cycle auxiliary battery.

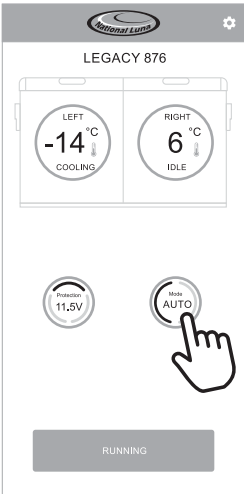


9.5V (Low) - This can be used if priority is to have longer run time at the expense of deep battery discharge. It can also be used to temporarily compensate for some installation faults.



A LOW battery protection setting may result in excessive battery discharge.

Changing speed mode



The speed control will toggle between the AUTO mode, where the fridge will automatically balance cooling performance, and TURBO mode where maximum cooling performance is desired at the expense of increased power consumption.



AUTO - Best for most applications. The fridge will manage compressor speed automatically.

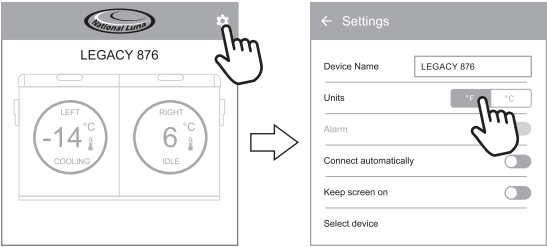


TURBO - Over-ride the speed control and run at maximum speed. This increases cooling performance.



TURBO mode can increase power consumption.

Changing temperature units (°C / °F)



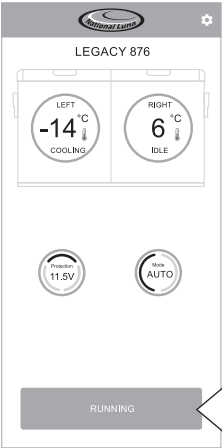
To toggle between °C and °F, first access the settings page by pressing the gear icon.

On the settings page, select the preferred temperature units.

There may be a short delay for the fridge display to update.

Press back to return to the dashboard.

Status and Fault indication



The status bar shows the current fridge status at any moment. It will indicate if the fridge is running, is idle or in a startup delay.

Any detected faults will also be indicated on the Status bar.



The fridge has reached temperature and is idle.



The fridge is preparing to start the compressor and cool a compartment.



The compressor is running and a compartment is being cooled.

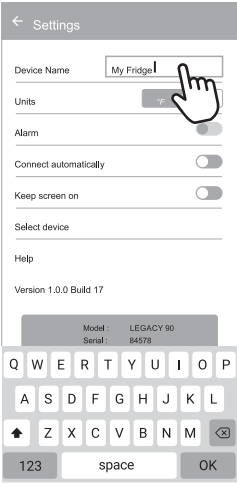


The compressor is slowing down before stopping.



A fault has been detected. Press the up arrow for more information about the fault.

Setting a custom name (nickname)



A custom name can be set for a connected fridge. This name is saved in the APP memory and is linked to the fridge unique hardware number.

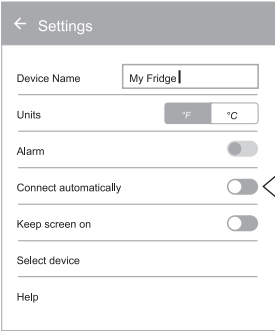
The configured name will be displayed on the dashboard and in the scan list when scanning for nearby devices.

To set a custom name, go to the settings page.

Tap the text block with the current device name.
A keyboard will appear and you can type a new name.

Press OK or Enter when done.

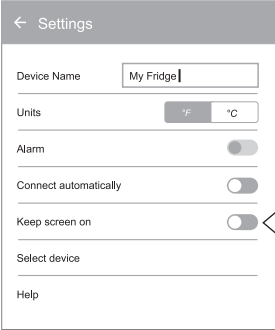
Connect automatically option



If this option is set, when the APP is opened, it will attempt to connect automatically to the last-connected device if it is within range.

You will not need to select the device from the scan list.

Keep screen on option



This option will prevent the screen of the mobile device from turning off while the APP is open.

Note - this will increase battery use on the mobile device.

Defrosting

It is normal for ice to accumulate on the cooling surfaces of a freezer. This will be more significant in humid environments. Increased ice build-up will reduce cooling performance and should be removed periodically.

Before defrosting, remove any contents of the fridge or freezer compartments.
Disconnect all power cables from the fridge and open the main door.
Allow any ice or frost to melt.
Use a soft cloth to remove melting ice and water.
Do not use sharp objects to scrape ice from the cooling surfaces.

It is best to dry the interior before turning on the fridge.

Care and cleaning

Use a soft cloth with mild detergent if necessary to clean the exterior of your fridge.
Make sure surfaces are dry before storage.

The interior should be cleaned regularly to prevent bacteria and odours from forming.
Use a soft cloth with mild detergent or anti-bacterial soap, do not use abrasive or strong chemicals.
Do not use ammonia-based cleaning agents or strong acids.
Do not use sharp tools to remove ice on the cooling surfaces.

The external compressor tray at the rear of the fridge may accumulate dust or debris over time. Check the tray compartment regularly and blow out any dust or remove any loose debris.

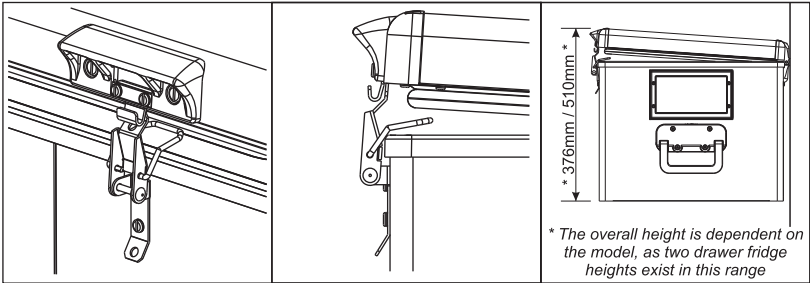


A blocked air intake can result in poor cooling performance and increased power consumption.

Storage when not in use

When your fridge is not in use, it is best to clean the interior and exterior prior to storage.
Power off the fridge and remove the power cables to ensure that the interior light doesn't receive any power and remains off. Otherwise this will deplete your battery over time.
It is recommended to keep the door open to allow air to circulate inside the fridge.
This will help keep the interior dry and prevent odours.

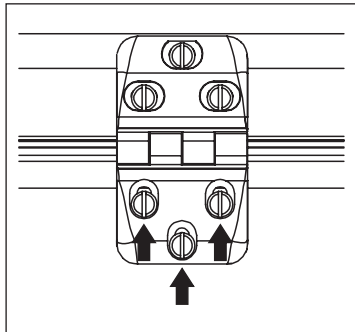
The door latch can be used to keep the door open as indicated below. Please note, if the fridge is secured within a closed drawer system that has a platform on top, ensure that there is enough clearance provided as the total height of the NL35, NL40 and NL60 in this configuration is 376mm, while the NL94 is 510mm.



TIP - Place baking soda in an open container and position inside the fridge. This will help to absorb odours.

Adjusting door tension

Over time, the door seal may compress or deform.
This is normal and it may be necessary to adjust the door tension.



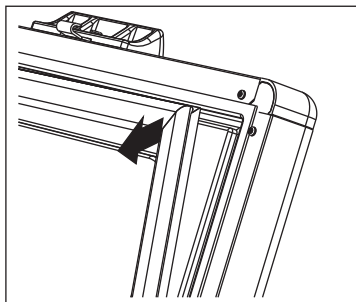
Adjustable door hinges

1. Unclip the door latches.
2. Loosen the 3 lower screws on each door hinge.
3. Apply light, even pressure on the back edge of the door.
The door seal should be lightly compressed.
4. Tighten the 3 screws on each hinge.
5. Close the door latches and check their tension.
They should not be loose or overly tight.



Take care not to over-tension the door catches or hinges as this can over-compress the door seal or damage the door catch components.

Removing / replacing door seal

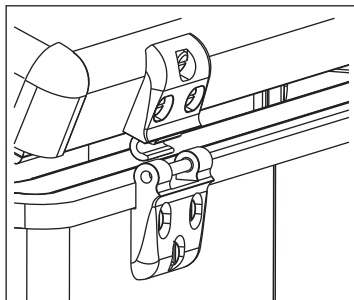


The door seal can be removed for cleaning, by simply pulling it from one corner. Clean and dry the seal and replace it by pushing it firmly into the recessed slot in the lid.

Over time the door seal may become less flexible and not seal completely. Remove the seal and place it in a warm environment, such as in the sun. This can help the seal to return to its original shape.

If the seal is damaged, replace with a new one (spare part is available).

Removable hinges - optional accessory



Applications with limited space, where it is not possible to fully open the main door, can benefit from removable hinges.

These replace the standard hinges and allow the door to be completely removed after opening it partially.

Remove each of the standard hinges and replace them with a removable hinge. Adjust the door tension if necessary

Recommended temperature settings

Fruits, vegetables, dairy products, unfrozen meats.	3°C to 6°C	37°F to 43°F
Cold beverages	0°C to 5°C	32°F to 41°F
Short-term frozen meats	-6°C to -10°C	21°F to 14°F
Frozen meats & fish	-10°C to -12°C	14°F to 10°F
Ice-cream and frozen deserts	-18°C	0°F

Optimising efficiency

Follow these simple tips to reduce your fridge's energy consumption :

- Keep your fridge in a cool, well-ventilated area.
- Set the internal temperatures appropriate for the contents. Setting temperatures colder than necessary can increase energy consumption.
- Avoid opening the main door more than necessary.
- Load pre-frozen foods into the freezer or freeze the contents when AC power is available.
- Turn off an unused compartment on a Dual-compartment model to reduce energy use.
- Dual-compartment models often have one compartment with thicker insulation and seperate lid. Use this as the freezer if a fridge + freezer combination is used.
- With Dual-compartment models, defrost frozen foods by moving them from the freezer to the fridge compartment. This will help to keep the fridge contents cool and also prevent bacterial growth.
Note - This will increase the defrost time so careful planning is required.

Solar panel, battery and inverter sizing

For most remote applications where solar is the primary energy source, a solar panel size of 100-150W is recommended if 6-8 hours of direct sunlight is available each day. This should be combined with a battery of at least 100Ah and solar regulator suitable for the solar panel used.

A larger battery capacity will allow the fridge to run longer between re-charges and can extend battery life by reducing the chance of deep discharge.

If the fridge is powered by an AC inverter or generator, it should have a rating of 150W or more. The inverter or generator output must be within the fridge AC voltage limits. Large voltage surges can cause permanent damage to your fridge.

Note - It is more efficient to power a fridge directly from a battery than to use an inverter.

Troubleshooting

In the event of unusual or undesired operation, consult the table below of common fault conditions and potential solutions.

Problem	Possible Cause	Solution
Fridge will not run when connected to a vehicle or 12V source. Fridge will only run when battery protection is set to LOW. Fault-ID light is flashing once every 4 seconds.	The DC supply may be interrupted or below the minimum operating voltage. The DC input fuse may be blown. There is a loose connection or the supply wiring is too thin. The supply wiring may have too many connections or is improperly installed.	Recharge the battery if it is low. Check fuses and connectors in the application wiring. Check the DC input fuse on the fridge. Replace if necessary. The supply wiring may be of the incorrect gauge, replace with the recommended size.
Fridge will not run when connected to an AC supply.	The AC supply voltage may be below the minimum AC voltage rating for the fridge. The AC plug or cable may be loose or damaged. The fridge power supply module may be damaged.	Ensure AC supply voltage is within operating specification. Inspect the AC cable. Replace it if it is damaged. Refer the fridge for service.
The fan is noisy or not running at all. Fault-ID light is flashing twice every 4 seconds.	The ventilation fan may be obstructed by debris or excessive dust. The fan may have a broken blade. The fan may be defective.	Clear any dust or debris around the fan and ventilation vents. Refer the fridge for service if the fan is broken or not moving.
Fault-ID light is flashing three or four times every 4 seconds. Compressor is starting and stopping intermittently.	The compressor is unable to start correctly. This can occur if the refrigerant pressure is too high. The compressor or drive electronics are faulty.	This problem can resolve without intervention after a short period. If fault does not resolve, refer the fridge for service.
Fault-ID light is flashing five times every 4 seconds.	The compressor drive electronics have over-heated. This can be a result of blocked ventilation, damaged cooling fan or very high ambient temperature.	Ensure the ventilation vents are clear. Check the cooling fan for obstructions or excess dust.
Fault-ID light is flashing six times every 4 seconds.	The compressor or drive electronics are faulty.	Refer the fridge for service.

Specifications

Power Supply	
AC supply voltage	100V - 240V 50/60Hz
DC supply voltage	9.6V - 32V
Running power	40W - 75W
DC input fuse	15A blade (ATO type)
Other	
Refrigerant type	R134a
Insulation	CFC / HFC free PU
Climate class	T (tropical)
Operating environment	-5°C to +43°C
Communications	
Type	Bluetooth® 5.0
Radio frequencies	2.402 to 2.480 GHz
Safety standards	SANS 60335-1:2018 Ed 3.1 SANS 60335-2-24:2021 Ed 5.2 IEC 60335-1:2016 Ed 5.1 IEC 60335-2-24:2017 Ed 7.2 EN 301 489-1 V2.2.3 EN 301 489-17 V3.2.4 EN 55014-1 / CISPR 14.1 EN 55014-2 / CISPR 14.2

Recommended minimum temperature settings

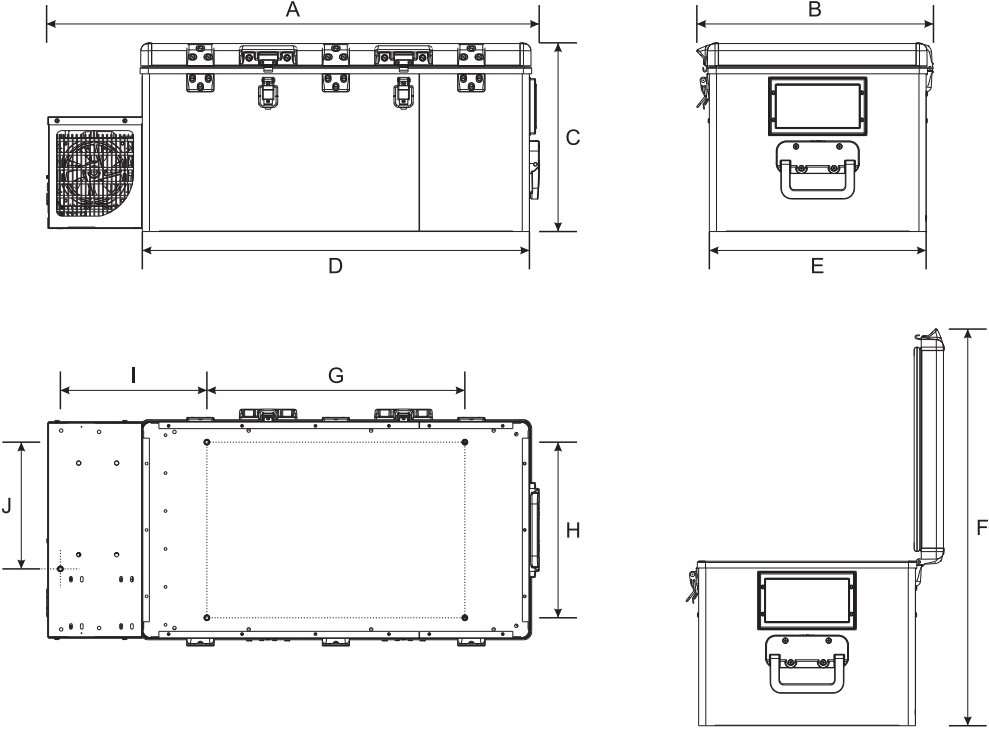
MODEL	FRONT	BACK / SINGLE
NL35, NL40, NL60 Single Control	-	-30°C (-22°F)
NL35, NL40, NL60, NL94 Dual Control	-18°C (0°F)	-24°C (-11°F)



The BLUETOOTH word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by National Luna is under license. Other trademarks and trade names are those of their respective owners.

** While every effort is made to ensure documentation is correct, specifications may change without prior notice.*

Specifications continues



MODEL	A	B	C	D	E	F	G	H	I	J
NL35	868	385	350	675	360	695	436	284	270	204
NL40	911	425	350	718	400	732	476	324	270	234
NL60	993	495	350	800	468	805	571	385	262	290
NL94	993	495	485	800	468	945	571	385	262	290

* Dimensions are in mm

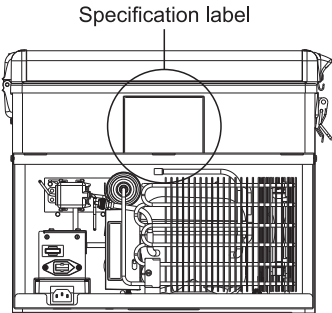
** Dimensions are shown for models with the default door configuration.

*** While every effort is made to ensure documentation is correct, specifications may change without prior notice.



In the case of a partially opened door (Storage when not in use), refer to page 24 for the maximum height of the fridge.

Serial number and specification label



A specification sticker is located on the rear of the appliance that indicates the product's unique serial number and specifications.

Before connecting your fridge to a power source, make sure the voltage is within the indicated AC or DC voltage ranges.

When contacting technical support or making a warranty claim, take note of the serial number and the model version displayed on the appliance.

Do not remove this sticker.

The serial number listed is also used as te PIN when using the NL CONNECT application on a mobile device.



SN: 122946

FRI-32603

NL 60 Dual Control Drawer Fridge

NATIONAL LUNA NL 25 OFFROAD COMPRESSOR	CLIMATE CLASS	T
DC VOLTAGE RANGE	9.6Vdc - 32Vdc	2.3A - 10A
AC VOLTAGE RANGE	110V - 240V 50/60Hz	1.1A
REFRIGERANT	R134a	70g

SANS 60335-1:2018 Ed 3.1
SANS 60335-2-24:2021 Ed5.2
IEC 60335-1:2018 Ed 5.1
IEC 60335-2-24:2017 Ed 7.2
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
EN 550 14-1 / CSEPR 14.1
EN 550 14-2 / CSEPR 14.2



TA-2022/2231
APPROVED



Insulation blowing gas
SolKane 1232d

Manufactured in South Africa

www.nationalluna.com

Serial number
Fridge model

Air transport

This product complies with the Special Provision A26 of the Dangerous Goods Regulations (DGR) listed by the International Air Transport Association (IATA) and International Civil Aviation Organization (ICAO) and should be exempt from declaration as dangerous air cargo.

This product contains a non-flammable, non-toxic refrigerant gas (the type and weight is stipulated on the product's specification label as indicated above).

Technical data contained in this manual:

Due to ongoing product design and development, some drawings within this manual may differ from the actual product. National Luna reserves the right to change any information contained in this document without prior notice. National Luna will not be held responsible for errors or omissions in this document.

A black and white icon of a trash bin with a large 'X' over it, indicating that the appliance should not be disposed of as normal household waste.

At the end of this products' life, do not dispose with normal household waste. This appliance should be disposed of responsibly by delivering to an appropriate recycling or waste-disposal facility.

30

Warranty and Service Information



South Africa

This warranty is only valid within the borders of South Africa.
Refer to International section for warranty information outside of South Africa.

National Luna Limited 3-Year Warranty

National Luna provides a warranty to the original purchaser, that any genuine National Luna product purchased from an authorised reseller will be free from defects in materials and workmanship for a special length of time from the date of purchase. The warranty period will vary by specific product, as identified in your user documentation or on the product package.

This warranty applies to the original purchaser and is not transferable, except where required by applicable law.

In general, this warranty means your National Luna product will operate in accordance with the product manual, specified voltage range and environmental conditions as outlined in the official documentation.

This warranty supercedes all other advertised warranties for this product. No National Luna dealer or other agent is authorised to make any modification, extension or addition to this warranty.

National Luna shall, at its sole discretion, repair or replace and product, provided it is returned to the original place of purchase, or another place as directed by National Luna, with the original sales receipt (or valid copy thereof).

Warranty returns to the factory for repairs - in the event where the unit has been shipped to the factory for repairs, transport costs will be for the owners account.

National Luna shall not be responsible for any damage or loss that occurs during shipping or transport to a service centre or repair facility.

National Luna may consider a warranty void if modifications have been made to the product that may affect proper operation.

National Luna shall not be responsible for damage to the product if service or maintenance is undertaken by non-authorised persons.

National Luna will not be responsible for damage or injury as a result of connecting the product to an unsupported power source or voltage outside of the product operating specifications.

National Luna shall not be responsible for damage or injury resulting from negligent use, storage of hazardous chemicals, use of corrosive substances, fire, flood, civil disturbances, lighting or any other natural phenomenon.

National Luna shall not be responsible for any consequential loss or damage caused by, or due to the malfunction of this product.

National Luna reserved the right to refuse warranty if the original proof of purchase (or valid copy thereof) cannot be produced.

If this product is installed in a motor vehicle, it may require connection to the vehicle electrical system, it is the owners' responsibility to determine if the installation of the product will affect the safe operation of the vehicle or the vehicle warranty. National Luna shall not be responsible if such warranty is rendered void by the motor manufacturer.

Incorrect installation, including improper wiring, inadequate ventilation or failure to follow installation guidelines, may void the warranty.

Should a product be replaced under warranty, the replacement will carry the balance of the warranty from the original product, unless otherwise stated.

Any products that are not collected within 3-months following service or repair may be sold for scrap expenses.

Exclusions

This warranty does not cover problems or damage resulting from, but not limited to, any of the following:

1. Wear and tear associated with normal use.
2. Fuses, bulbs, fans or other consumable parts.
3. Any modification, abuse, accident, disassembly, misapplication or un-authorised repair.
4. Removal of any manufacturer labels or stickers.
5. Any improper operation, including any use not in accordance with supplied product instructions.
6. Connection to any improper voltage supply as outlined on the product or in the product documentation.
7. Any other cause which does not relate to a product defect in materials or workmanship.
8. Any 3rd party products included with the returned product (i.e plugs, chargers, cables, batteries)
9. Where service is performed by an authorised service agent, any costs relating to labour are excluded from this warranty.
10. Damage caused by power surge, incorrect voltage supply, improper battery systems or water ingress not consistent with the product's IP rating.
11. These fridges are designed for recreational use. The warranty may be voided when the fridge is used in a commercial application where the product is exposed to abnormal / excessive use.

Also excluded from this warranty are counterfeit products. These would be products that National Luna, at its sole discretion, determine were not manufactured by National Luna or any of its authorised manufacturing partners.

Service out of warranty

National Luna provides service and repair to product that are no longer covered by a valid warranty.

Such service or repair may incur costs for assessment or testing in addition to any parts and labour required to perform the repair.

Any service or repair will carry a minimum of 6-month warranty on parts from the date of service unless stated otherwise.

National Luna will continue support for obsolete products for as long as possible but availability of parts for obsolete products cannot be guaranteed and the product may be deemed uneconomical to repair.

How to make a warranty claim

Before submitting a warranty claim, we suggest you contact our technical support or visit www.nationalluna.com and review the support section for technical assistance. You may also submit a request for technical support from the contact form or send an email to the address listed. Please provide the model number and serial number of the product when contacting technical support, making a claim or returning a product for service.

Generally, valid warranty claims should be processed through your original point of purchase.

Please verify the returns policy with the retailer where you purchased your product as additional charges or restrictions may apply. Any warranty claim that cannot be processed through your original point of purchase should be addressed directly to National Luna.

Any products returned to National Luna or authorised service agents should be approximately protected and packaged with your personal details included.

National Luna reserves the right to perform testing on any returned product to validate a warranty claim.

Assessment fees may apply to products returned for testing, including those that are found to not be defective.

International - (regions outside of South Africa)

National Luna products are distributed worldwide through a distribution network. Authorised importers in a particular country will carry the product service and warranty and may have additional terms and conditions in-line with their conditions of sale.

If National Luna products are sold or imported into a country by persons other than authorised National Luna distributors, no local warranty applies. Products are then required to be returned to National Luna in South Africa where the standard terms of warranty will then apply. The cost of freight, duties, taxes or other costs are for the customer's account.

The warranty is valid in the country of purchase - National Luna products that are exported by private individuals shall not carry a warranty in the destination country even if that country has an existing authorised service agent.

National Luna South Africa
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*Warranty terms and conditions may change periodically.
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