1. INTRODUCTION

After 8 years of experience in the portable fridge market, ARB decided there was an opportunity to bring a new portable fridge into the market. This fridge would need to be price competitive and incorporate a modern design that addressed many of the shortfalls that exist in the current market.

The first steps were taken in 2005 when a review of all popular portable fridges was undertaken to ascertain their strengths and weaknesses. A survey of fridge users was also conducted to determine what features people identified as important. The key areas that were identified during this review are listed below.

1) Cooling performance and reliability.
The ability of the fridge to maintain the target cabinet temperature while using a minimum amount of power.

2) Exterior cabinet strength and design appeal.
A metal cabinet exterior was preferred over plastic because of its inbuilt strength. It was also felt that plastic fridges did not have the visual appeal of a metal cabinet fridge.

3) Ease and reliability of controls.
Some very strong opinions were expressed about “guess work” temperature setting being old technology and annoying. Also the convenience of controls located at the front of the fridge was preferred to rear mounted ones.

4) Interior cabinet design usefulness and size.
The restriction on usable volume within some fridges restricted efficient packing of common items.

5) Portable Fridge general product shortfalls.
The following items were listed by many people as common frustrations:
- Poor lid hinge and latch operation and usability
- Cleaning the internal fridge cabinet
- The big external size required to obtain a good sized usable internal capacity
- Products that do not live up to their reliability claims
- Poor temperature and monitoring controls

After formulating a list of desirable features, ARB searched for a reputable manufacturer who could supply a fridge that ARB would be happy to put their name to. This fridge would have to meet the high levels of reliable cooling performance and build quality that would be expected from a product displaying the ARB badge.

ARB was pleased to select Dometic, one of the world’s largest manufacturers of air conditioning & portable fridges, to manufacture their fridge.

ARB did not want a re-badged look-a-like product and insisted on having the flexibility to design their own fridge. This involved one of the largest investments in tooling that the company had ever made. ARB was willing to make this investment to ensure they got the right product.

The ARB engineering department spent the next 3 years working on the key design features of the fridge. They liaised closely with the factory to ensure that all of ARB’s design criteria were met. Many of the unique features on the fridge have been developed from the ground up at ARB’s engineering facility in Kilsyth.

It is with great pride and optimism that ARB announces the launch of its all-new 50QT Fridge Freezer. We are sure that after reading the key features and benefits detailed in this booklet, you will be able to sell this fridge freezer with the confidence and the knowledge that your customers will be purchasing the best value for money portable Fridge Freezer on the market.

As you would expect from a quality engineered ARB product, the 50QT Fridge Freezer is covered by a 3-year warranty period that is supported by ARB’s North & South American headquarters located in Renton, WA.
2. Cabinet Exterior – FRONT VIEW

ARB Blue
- Instant recognition that it's an ARB fridge

Modern design
- Functional and distinctively appealing

Recessed front mounted digital control panel (2.1)
- Protected from knocks and accidental changing of settings
- Easily accessible for viewing and adjustment of settings

Large over center lid latch (2.2)
- Positive, easy opening and locking of lid
- Excellent clamping pressure against lid seal for maximum thermal insulation

Powder coated zinc steel cabinet shell (2.3)
- Strong and easily cleanable surface
- Clean, good looking cabinet lines
- Zinc steel provides excellent corrosion resistance

Plastic cabinet body base (2.4)
- Purposely used in the most corrosion prone area of the fridge cabinet

Recessed powdered coated steel fixed carry handles (2.5)
- Provide strong tie down and easy lift points

Rubber feet (2.6)
- Vibration reduction and facility for fixed mounting
- Positive, non-slip location on hard or smooth surfaces
3. Cabinet Exterior – REAR VIEW

Recessed power lead clips on the rear of cabinet (3.1a and 3.1b)
- Prevent accidental disconnection of power leads

Recessed fridge fuse cover above 100-240 AC volts (3.2)
- Convenient location for fuse inspection

Fridge dimensions
- External dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>Height (in/mm)</th>
<th>Width (in/mm)</th>
<th>Depth (in/mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARB 47 Litre</td>
<td>20&quot;</td>
<td>14.96&quot;</td>
<td>27.76&quot;</td>
</tr>
<tr>
<td></td>
<td>508mm</td>
<td>380mm</td>
<td>705mm</td>
</tr>
<tr>
<td>Engel 40 Litre</td>
<td>20&quot;</td>
<td>14.37&quot;</td>
<td>28.43&quot;</td>
</tr>
<tr>
<td></td>
<td>508mm</td>
<td>365mm</td>
<td>722mm</td>
</tr>
</tbody>
</table>

- Internal cabinet dimensions - see diagram below
4. Cabinet Interior

50QT capacity (4.1)
- Large capacity with fully useable interior
- Holds 72 x 12oz cans (4 cans across width of main cabinet)

Internal cabinet light (4.2)
- Low current draw LED light operated by a magnetic switch located at the front of the cabinet to provide maximum illumination.

Integrated cabinet cooling unit (Evaporator) (4.3)
- Maximizes usable internal volume because the cooling unit does not protrude into the storage area
- Easy wipe clean surface
5. Cabinet Interior

Separate dairy/fruit compartment (5.1)
- Runs 3-5 degrees warmer than main cabinet
- Reduces icing up and subsequent spoilage of dairy and fruit items

Full size plastic coated heavy gauge wire basket (5.2a and 5.2b)
- Reversible basket for maximum flexibility when loading fridge

Removable basket divider (5.3)
- Remove divider for more packing options

Interior drain plug (5.4)
- An exclusive feature for a no fuss means of cleaning up accidental spills
6. Lid, hinge and lid seal

Unique stainless steel detent hinge with quick release mechanism (6.1)
- Designed to securely locate lid and prevent its accidental removal
- If desired, lid can be completely removed from body of fridge in an instant

Concealed lid seal (6.2)
- Located within the lid to prevent damage when removing items from the fridge
- Highest quality EPDM rubber seal material for maximum thermal insulation

Cabinet ridge seal (6.3)
- Aligns with the concealed lid seal to ensure excellent seal compression for optimal thermal insulation

2 Piece injection moulded lid (6.4)
- Extremely stable construction to prevent warping under hot conditions
- Enhances the appearance of the lid
- UV stable

Lid opens past vertical
- Allows maximum access when removing large items
- Allows both hands to be free when loading or unloading fridge
7. Control Panel

**Control Panel features**
- All fridge functions controlled from control panel
- Weather resistant touch pad
- Easy to read clear backlight digital display
- Internal cabinet temperature displayed
- Digital display does not require separate battery

**Power light**
- When green, this indicates the fridge is on and the compressor is operating
- When orange, this indicates the fridge is on but the compressor is not operating. For example, the desired target temperature has been reached

**Error Light**
- When flashing red in conjunction with the power light showing orange, the battery protection system has been triggered because there is insufficient power going to the fridge (12/24V DC power only)

**Fridge operation setting and adjustments**
- Touch pad control to change target temperature, temperature unit (°C or °F) and battery protection level

**Power recovery**
- If the fridge is on and power is lost, all settings will be retained when power is restored

**Integrated battery protection system (12/24V DC)**
- Selectable minimum operating voltage for fridge to prevent excessive discharge of battery

**Battery protection switch off voltage**

<table>
<thead>
<tr>
<th>12V DC systems</th>
<th>24V DC system</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>11.8 volts</td>
<td>26.2 volts</td>
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<tr>
<td>11.4 volts</td>
<td>25.3 volts</td>
</tr>
<tr>
<td>10.1 volts</td>
<td>23.0 volts</td>
</tr>
</tbody>
</table>
8. Power connection

Multi socket 12/24V DC plug (8.1)
- Can be used in a standard cigarette lighter plug
- Can be used in a Hella/merit plug by removing the adaptor collar

Power consumption
- Average power consumption at 37°F cabinet temperature, 90°F ambient temperature*
  - ARB 50QT: 1.35 Amps/Hour
  - Engel 42QT: 1.67 Amps/Hour

* Fridges tested under identical conditions. These figures cannot be used to make comparisons to other portable fridges, as the test conditions are different.

Integrated power system
- No external power transformers required to operate the fridge on 12V DC, 24V DC or 110V AC power

110V AC power priority
- If connected to both 110V AC and 12/24V DC power, fridge will run on 110V AC supply

Right angle power lead plugs (8.2a and 8.2b)
- Minimizes depth required behind fridge for power leads

12/24V DC plug fuse
- Protects fridge when connected to 12V DC or 24V DC power supply

Cable length
- 12/24V DC cable – 6ft
- 110V AC cable – 6ft

Wiring requirements (12V)
- For cable lengths up to 19ft from battery use 14-gauge automotive cable with a 15 Amp inline fuse
9. Cooling system

Compressor - Danfoss BD–35F

- German built compressor
- BD-35F is the most widely used portable fridge compressor in Australia
- Danfoss is the largest manufacturer of portable refrigeration compressors in the world

Variable speed compressor

- Allows rapid cool down of cabinet from ambient temperature
- Initial cool down time from 90°F to 1°F

<table>
<thead>
<tr>
<th>Compressor</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>ARB 50QT</td>
<td>90 minutes</td>
</tr>
<tr>
<td>Engel 42QT</td>
<td>160 minutes</td>
</tr>
</tbody>
</table>

Electronically controlled cooling system

- Maximises cooling efficiency while minimising power usage

Cooling range

- 50°F (highest) to 0°F (lowest) at ambient temperatures of 90°F or below
- For temperatures over 90°F the temperature reduction will be 50°F below ambient

10. General product information

Insulation

- Highest quality polyurethane foam insulation

Mounting

- Permanent mounting through rubber feet
- Temporary mounting using handles. The ARB tie down system is highly recommended

Operating angle

- Up to 30° from horizontal