2160 Zircon

DIALYSIS POSITIONING PLATFORM

OPERATION MANUAL

27-02-2017

VER 1.0

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Every effort has been made to ensure that the information in this manual is accurate and details provided are correct at the time of publishing. The company, however, reserves the right to improve the equipment shown. Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation.

Thank you for purchasing from **Forme Medical** !

At Forme Medical we are passionate about creating innovative solutions to improve and ease patient and medical professionals lives.

We pay attention to every detail from design through manufacturing with an outstanding customer service that support you during the lifetime of your device. That is why we can guarantee the high quality and durability of our products.

This manual is intended as a guide for any personnel who are responsible for operating the couch during a medical procedure, or who are performing general adjustments or maintenance. Please keep this manual readily available at all times, to ensure correct operation and proper care. You can also find it in our website www.formemedical.com.au/resources

Our industry leading warranties mean we will be here to support you for the life of your couch. We are also very happy to chat to you about customisations to our current products or research and develop of new solutions to suit your needs. So please stay in touch with us!

We hope you enjoy your new couch and find that it has all the functionality you need.

To find out more about us and our products visit www.formemedical.com.au

Australian Made

5 Year warranty on electrical components

Lifetime warranty on frame and workmanship

Safety Instructions

The primary concern of Forme Medical is that our products are operated within safe parameters and regularly maintained to ensure the safety of both patients and practitioners.

- Please ensure that relevant personnel read this manual in full before attempting to install or operate the examination couch.
- Please keep this manual near the couch or, if possible, permanently attached to it.
- Before using or operating your new medical couch please ensure that the area surrounding the couch is clear from interference or obstructions which may affect the operation of the couch's movement.
- Ensure that all leads and plugs are securely connected, that they are visually free from damage and in good working order.

Please note that incorrect care or use of your new medical couch may cause injury, reduce the lifespan of the product and affect the product warranty.

Warnings

- This device is to be operated by a qualified practitioner only.
- Maximum total lift capacity is 220kg.
- This couch is intended to carry one person only.
- Ensure the wheels are locked before anyone sits on the couch, steps off the couch and before operating the couch.
- Not permanent operation. 2 minutes of continuous operation followed by 18 minutes of rest.
- The patient should access the couch within the safe access area. Please refer to **Figure 4**.
- Do not use electric cables with damaged insulation.
- This device is not intended for the transportation of patients.
- Maximum ramp slope when brakes are applied is 10 degrees.
- Do not allow patients getting on or off this device when it is in an elevated position or when the device is on an inclined/uneven floor.
- The device must remain connected to the mains during operation. Battery SHOULD BE ONLY USED during power outages to move the device to a safe exit position.

Precautions

- Take care to avoid power leads and control leads getting caught in the lifting mechanism. Regularly check these items for damage.
- Beware of areas within the mechanical elements of this device where items may become trapped.
- Prevent cables lying on the floor from becoming trip hazards.
- Ensure to clean/disinfect the bed after each patient use.

Children MUST be fully supervised at all times when near the couch. They must not be allowed to crawl under the

2160 Zircon Parts

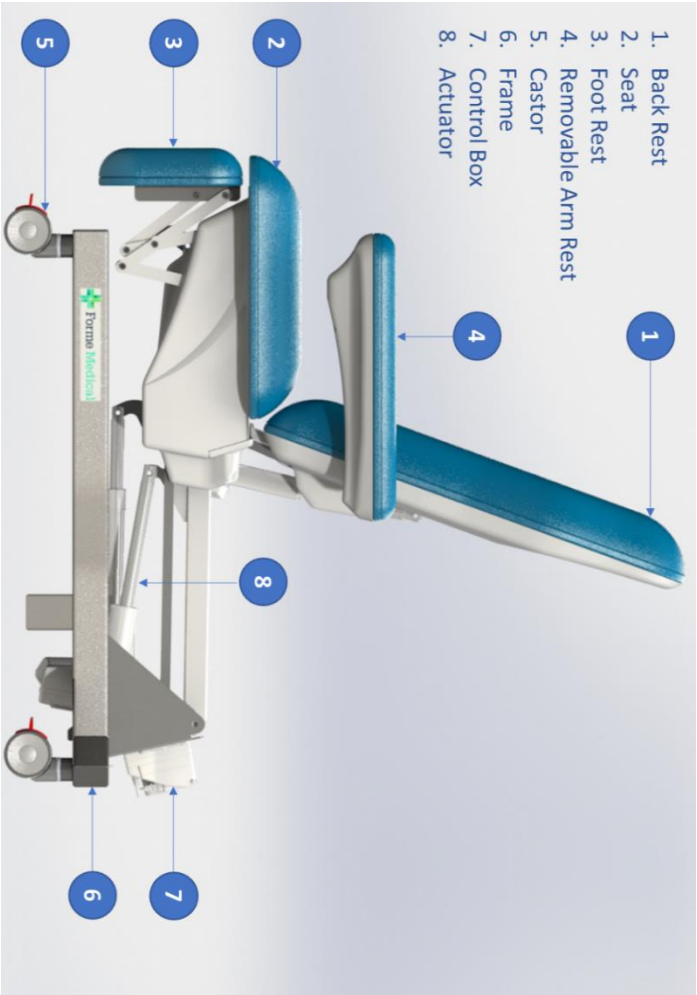

Figure 1. 2160 Zircon Parts.

Intended Use

The 2160 Zircon couch is intended to aid the positioning of patients that are undertaken treatments as dialysis, oncology, and ambulatory surgery (minor procedures).

Patient Access

Before allowing access to the bed make sure that the brakes have been applied. Please refer to the automatic locking system (ALS) section if this option has been selected. Otherwise, please follow the locking instructions for the Individual locking castors (ILC).

The 2160 Zircon can be accessed frontally or laterally to suit the needs of patients and health care practitioners.

Frontal access

The device must be positioned in a chair configuration and both removable arm rests must be attached to the device. If the patient is unable to access the chair unassisted the guidelines for transferring patients must be followed.

Figure 2. Frontal Access

Side access

Position the 2160 Zircon in a chair configuration and rotate into the lateral access position or remove the arm rest from the side where the patient is accessing the chair.

Figure 3. Side Access.

Make sure that the patient accesses the couch within the limits of the safe access area as shown in the **Figure 4** when the device is in a flat configuration.

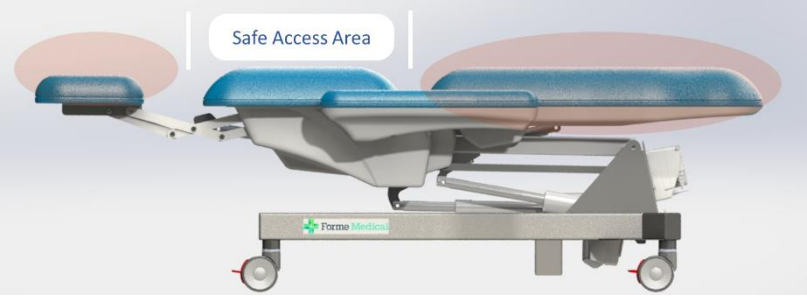

Figure 4. Safe Patient Access Area

If the patient is being transferred from another bed or a stretcher/gurney the guidelines for transferring patients must be followed and both Zircon and stretcher Head ends orientation should coincide side to side.

Our couches are designed for average weight distribution. Back rests and foot sections are not designed to take the full weight of the patient and incorrect use may cause patient injury, damage to the couch and risk voiding the warranty.

We recommend as a good practice to leave the back rest tilted in an angle or ideally in the upright position to prevent people seating on it. See **Figure 5**.

Figure 5. Recommended position of couch when is not being used.

Getting Started

1. Make sure that the couch installation area is clear and a wall 240 VAC power socket is available.
2. Remove the protective plastic from the handset coiled cable and cable ties.
3. Verify that the black power cable is fully inserted into the socket on the bed control box.
4. Verify that the power and handsets cables are not in contact with the moving parts of the bed.
5. Connect the couch power cable into the 240 VAC wall power socket.
6. Please let the battery charge for 24 hours before using the bed. (Please refer to section Backup Battery Pack for more information).

Operation

Our couches are fully electric, with main movements completed with the assistance of electric actuators. To protect users from injury, the couch operates on 24 volts direct current.

The Zircon 2160 can be supplied with either standard individual locking castors or automatic locking system (ALS) castors. Please refer to the adequate section.

Individual Locking Castors (ILC)

Individual locking castors enable the four wheels to be locked or unlocked independently. You will see that each wheel has a red section on it.

To lock the wheel, push the end of the red section down firmly so that it tilts and stays in position. To release the lock simply push the high end of the red section so that it returns to a flat position.

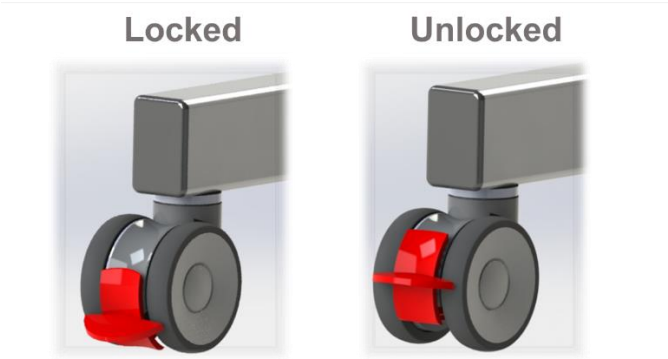

Figure 6. Individual Locking Castors Pedal Position.

Ensure that all four wheels are locked to guarantee stability before allowing patients onto or off the couch,

Castors and Automatic Locking System (ALS)

If the 2160 Zircon couch is provided with electric castors with Automatic Locking System (ALS). The wheels supplied with your Zircon have a pedal with three positions: Steer locking (UP), Neutral (MIDDLE) and Locked (DOWN). See **Figure 7**.

When either one of the positions is applied to one of the castors the other three will follow. For instance, to apply the brakes (The castors should be

in Neutral), press the pedal on one wheel and take it to the lock position. As a result, the other wheels will lock automatically.

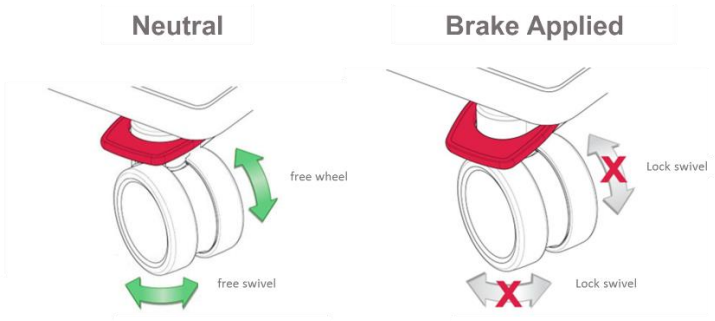

Figure 7. Electric Castors Pedal Positions.

Intelligent Steering

Another important feature of the ALS is the Intelligent Steering function. This function is active by default and works as follows:

The castors must be in Neutral to move the device from one place to another. If device is pushed from either end (back end or front end), the couch detects the direction of the push and automatically set the castors of the pushed end to Neutral (Free to swivel). At the same time, the two castors located at the opposite end are locked to swivel and therefore roll in a straight line. See **Figure 8**.

One second after the device has been stopped, and if the couch is moved to fine tune its position, the Intelligent Steering function detects this and sets the four castors into the free to swivel position.

The Intelligent Steering Function makes effortless the handling of the bed and eliminates the risk of back injury for the Health Practitioner.

Figure 8. Intelligent Steering.

Steering Control via Pedals

The same functionality of the Intelligent Steering function can be achieved by using the pedals. In order to do this, flick one of the pedals to the upmost position at the opposite side where the bed is to be moved as shown in **Figure 9**.

For instance, if the bed is to be pushed from the back (Back rest end), flick one of the pedals of the front castors (Patient access side) to the upmost position. This locks the swivel action of the front castors keeping them rolling in a straight line. The castor at the end being pushed are free to swivel allowing maximum manoeuvrability.

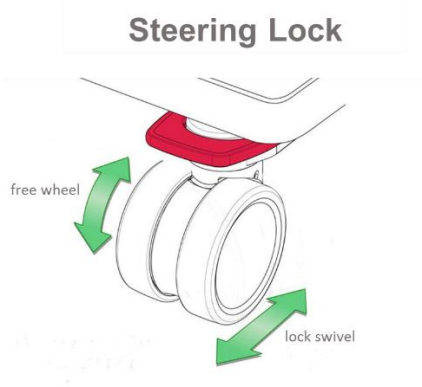

Figure 9. Steering Lock Position.

Furthermore, the ALS is fitted with a motion sensor that will automatically lock the wheels if the bed remains still for 60 seconds.

Please note that in the event of a discharged battery the castors can be locked and unlocked manually. If this happens, manually engage the brakes on each of the castors. Contrarily, if you want to unlock the

Positioning your device

The 2160 Zircon uses Forme's Medical innovative synchronous movement system, developed to simplify the operation of the device. Thanks to this, the user can progressively transform the device from a chair into a bed and vice versa with the press of a button.

The device follows the natural movement of the body when moving from a seated position to a reclining and/or horizontal position and vice versa. Moreover, The Zircon provides support to the patient's forearms by keeping the armrests horizontal during the entire range of motion. This makes the patient feel safe when the device is repositioned. See **Figure 10**.

Figure 10. Armrest Continuous Support.

The 2160 Zircon can be positioned using either one of the two handsets supplied; the patient handset and/or the health care practitioner handset.

Additionally, the device can reach a position called Comfort. This position has been included in the device to diminish the risk of pressure soar generated when people sit or lie down for long periods of time.

The health care practitioner handset is not to be used by the patient as it has functions related with the safety operation of the device as locking and unlocking the castors. Furthermore, the HCP handset has additional features that will take the patient to a treatment position as Trendelenburg or Supine (Please refer to the Health Care Practitioner Handset

Patient Handset Operation

The functionality of the four buttons Patient handset is described below.

BUTTON	ACTION
	Gradually transforms the device into a chair.
	Gradually transforms the device from a chair in to a bed passing by the comfort position.
	Move the device up to a desired height to facilitate access.
	Move the device down to a desired height to facilitate the safe exit of the patient.

Table 1. Patient Handset Buttons Description.

The height that the device reaches using the UP button in the Patient handset has been limited to a maximum safe access height.

Figure 11. Handset buttons.

Comfort position

The 2160 Zircon movement have three key positions; when it is a chair, when it is in the comfort position and when it is flat (See **Figure 13**). The chair gradually changes its shape to reach each of these positions.

If the device is in the chair like shape or home position and if the comfort button is held pressed, the device modifies its shape in a synchronized movement of back rest, leg rest and seating sections. After a few seconds, it will reach the comfort position. Once the comfort position has been reached the device stops there for two seconds.

This stop gives the user the opportunity of releasing the button and enjoying this position. If the comfort button is kept pressed, the Zircon continues its transformation into a bed.

Conversely, if the application is in the flat configuration and the home button is pressed, the device will transform into a chair skipping the Comfort position.

Figure 12. 2160 Zircon Comfort Position.

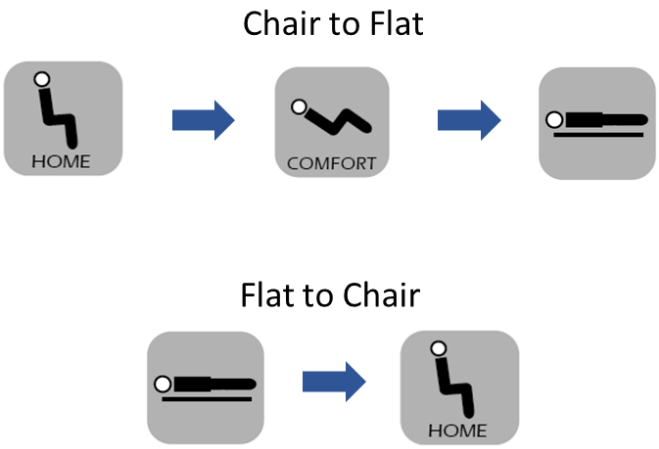

Figure 13. Zircon Patient Handset Range of Movement.

Health Care Practitioner Handset (HCP)

The heath care practitioner handset has full functionality and it can move each section of the 2160 Zircon independently.

The HCP handset can also control the locking function of the castors if the device is fitted with Automatic Locking System (ALS).

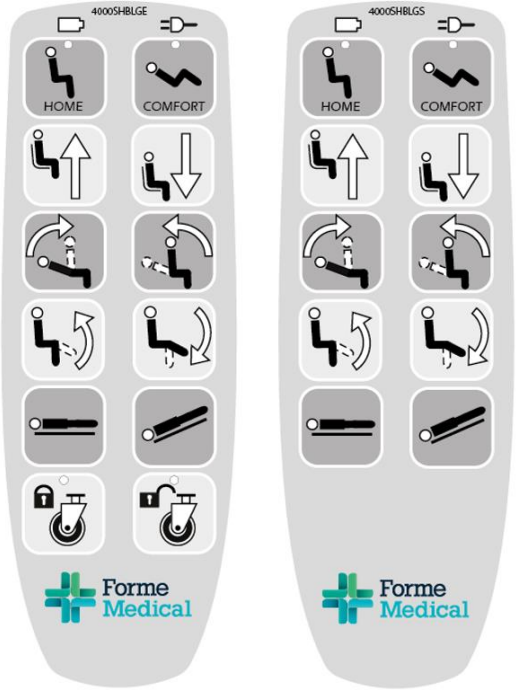

Figure 14. Health Care Practitioner handset.

BUTTON	ACTION
	Gradually transforms the device into a chair.
	Gradually takes the device to the comfort position. It doesn't take the bed to a flat configuration.
	Moves the device up to a desired height. No height restrictions
	Moves the device down to a desired height.
	Move the back rest up towards an upright position.
	Move the back rest down towards a flat position.
	Move the leg rest up towards a flat position.

	Move the leg rest down towards an upright position.
	Gradually transforms the device to the supine position (Flat). The device does not go through the Comfort position.
	Gradually transforms the device to the Trendelenburg position. The device does not go through the Comfort position.
	Lock the castors. After pressing the button the light turns on.
	Unlock the castors. After pressing the button the light turns on.
	If the lock and unlock lights are on and flashing an error have been detected in the Electric Castors System. Please contact the service department.
	Battery light on: The battery is on charge. Battery light off: The battery is fully charged. Battery light flashing: The device is running off the battery. It must be connected to the mains immediately.

	Mains light on: The application is connected to the wall socket (Mains electric power). Mains light off: The application is not connected to the wall socket (Mains electric power). It is either disconnected or running off battery power. If it is the second situation, the battery light should be flashing and the device must be immediately connected to the mains.

Table 2. Health Care Practitioner Handset Buttons Description.

Backup Battery Pack

The 2160 Zircon is provided with a 24 V 1.3 Ah battery.

In case of a power outage, the battery pack supplies enough power to lower the couch allowing the patient to exit the examination table.

Please notice that the bed must remain always connected to the power outlet during normal operation and the device should never run on battery during normal operation.

Accessories

The 2160 Zircon accessories have been developed to further configure your device for the specific needs of both Patient and Health Care Practitioner. Only use Forme Medical accessories.

Infusion Support

The support can be attached to either side of the device by using the mounting screws supplied. Always verify that the pole has been secured firmly to the support pole cradle.

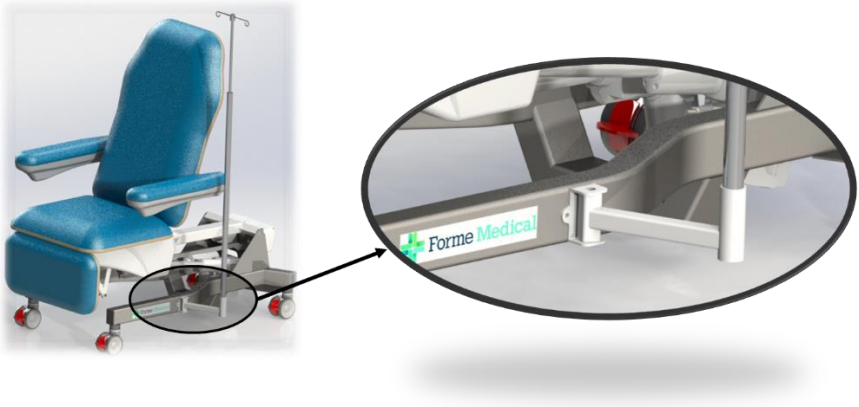

Figure 15. Infusion Support.

Oxygen Tank Support

An Oxygen tank can be secured to the bed in horizontally. See **Figure 16**.

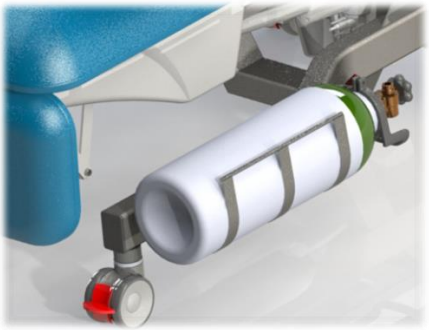

Figure 16. Oxygen Tank Support.

Urine Bag Holder

Figure 17. Urine Bag Holder.

Care and maintenance

Upholstery

Forme Medical positioning platforms are supplied with flame resistant and UV resistant vinyl fabric. Additionally, the fabric has a special coating that inhibits the growth of bacteria in healthcare environments. Despite the high resistance of the fabric, we recommend the follow care actions to maintain its lifespan.

- Most stains can be cleaned using warm soapy water, followed by clean water rinsing.
- If required, moderate scrubbing with a medium bristle brush will help loosen soiling from the embossed surface.
- The vinyl may also be bleach cleaned and we suggest that you use one part bleach to nine parts of water.
- Do not use solvents.

Failure to follow cleaning instructions may permanently stain and reduce the life of the vinyl.

Disconnect the device and remove the battery before performing any maintenance operation.

Frame and moving parts

The frame has been manufactured with high strength steel and is powder coated to protect it from abrasion, corrosion and make it very easy to clean.

- Any service and repairs must be carried out by an approved service engineer.
- The frame can be cleaned by wiping it over with a wet cloth.
- At least once a year, apply silicone lubricant spray to all pivot joints. (See figure). Do not use machine oil. Wipe off excess lubricant with a rag. In case of continuous use this might need to be done more regularly.
- A regular visual inspection is also recommended.
- Electric actuators and control boxes do not require maintenance.

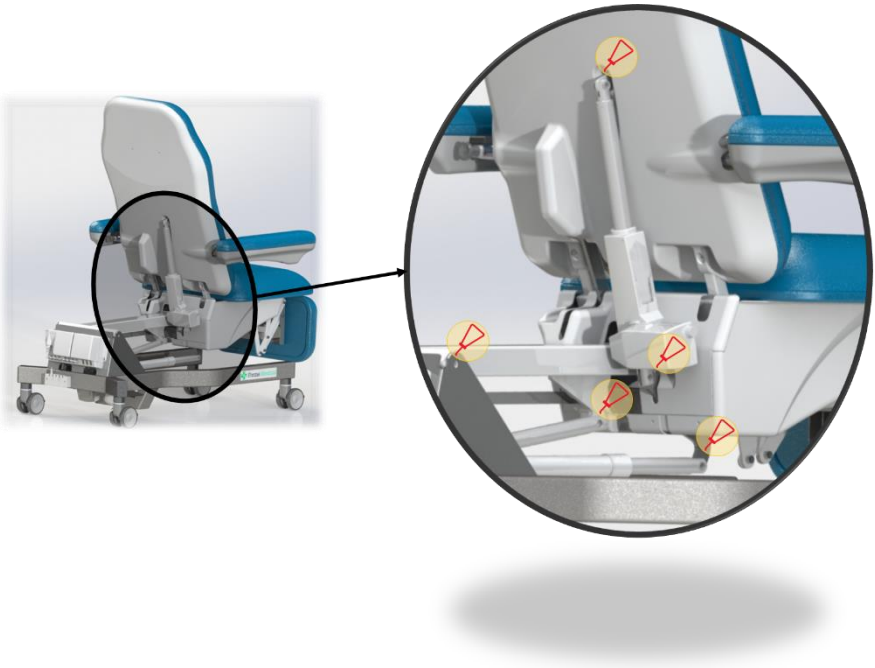

Figure 18. Lubrication points.

Specifications

Table Dimensions	1998mm X 620 mm
Weight	80 Kg ± 3 Kg
Lifting Capacity	220 Kg
Back Rest Tilt Range	0 – 70 degrees
Max. Height	1030 mm – Floor to upholstery
Min. Height	487 mm - Floor to upholstery
Noise Level	50 dB(A)
Frame	High strength steel – AS/NZS 1163:2009 Coating: Powder coated, Good abrasion and corrosion resistance. Resistance to alcohol and white spirits. Resistance to dilute acid and alkali.
Fabric	85% PVC / 15% Polyester Fire Retardancy tested to AS1530.3 Abrasion Resistance tested to AS 2001.2.25 Bacteria growth inhibitor Light fastness rating 6-7 ISO 105-B02-1994 (Grey scale 1-5) Colour fastness to bleach tested to AS 2001.4.11 (No change colour rating 4-5)
Castors	Electric Castors 100 mm Electric Brake Castors EBC Motion Sensor Two position Castors (Neutral – Locked) IEC60601-2-52 3rd edition compliance Protection Class: IPX5 Water resistance Individual Locking Castors 100 mm
Actuators	IEC60601-1:2005 3rd ed. compliance Protection Class: IPX4 Water resistance
Power Input	240 VAC 50 Hz
Power Output	24 VDC 105 W

Table 3. Table 3. 2160 Zircon Technical Specifications.

Warranty

Warranty Document for all products manufactured by Forme Medical.

Warranty Period – with exclusions:

- Lifetime Warranty* on the structural integrity of the frame.
- Five year warranty period applies to all electrical components including the actuators.
- One year limited warranty period applies to castors, upholstery and foam.

1. Where, in the opinion of Forme Medical Pty Ltd, A.B.N. 48 154 618 014 there is defective workmanship in a Forme Medical manufactured product ("the Product") Forme Medical undertakes, at its discretion, within the Warranty Period:-

   to (a) repair, or replace free of charge any defective parts, either by:-

   i. using new or refurbished parts; or

   ii. replacing the Product with a new or refurbished Product

   or (b) to otherwise rectify any faults in the Product.

2. Any repairs or parts replaced under the Warranty Period will be made without charge, providing that:
   a. the Product was purchased from an authorised dealer/agent appointed by Forme Medical;
   b. there has been no attempt to repair the Product by an unauthorised service provider;
   c. the Product's serial number has not been removed or altered;
   d. in the event that Forme Medical requires the return of the Product, the Product must be delivered to a facility authorised by Forme Medical in packaging that provides an equal degree of protection as to that which the Product arrived in. Postage, insurance and/or freight and shipping charges are the responsibility of the customer.
3. The Warranty Period extends only to defects occurring under normal use of the Product and when operated in accordance with Forme Medical's instructions.
4. When a product or part is exchanged under the Warranty Period, the original item becomes Forme Medical's property.
5. Any replacement Product provided under the Warranty Period may vary in colour and/or cosmetic design from the original Product.
6. Service under the Warranty Period (which may include replacing the defective part) will not extend the Warranty Period.
7. This Warranty expressly excludes:

a. Fair wear and tear;

b. Cosmetic damage, such as scratches, nicks and dents;

c. Damage caused by accident, abuse, misuse, water, flood, fire, or other acts of nature or external causes;

d. Mileage or travelling time in respect of service, or pick up or delivery costs incurred;

e. Service costs arising from failure to correctly adjust the controls of the Product or observe the operating instructions;

f. Damage caused by service performed by anyone who is not an authorised service provider for Forme Medical; or

g. Damage to Product that has been modified or altered without FM's written permission in advance.

8. The Warranty is transferable. However any transfer of the Product does not extend the term of the Warranty Period.

9. The Warranty may be fully assigned by Forme Medical upon the sale of its business and upon the transfer being effected Forme Medical's liability under the warranty will cease. For service queries, or specific instructions on obtaining warranty service for your Product, please contact your sales consultant at the place of purchase, and quote the serial number.

Forme Medical Pty Ltd 11 Frankston Gardens Drive, Carrum Downs 3201 Victoria Australia T: +61 3 9708 2661 F: +61 3 9708 2617 www.formemedical.com.auTHE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE IN ADDITION TO ALL OTHER RIGHTS OR REMEDIES THE CUSTOMER MAY HAVE, INCLUDING ANY LIABILITY ARISING UNDER ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, WHICH MAY VARY FROM STATE TO STATE. FORME MEDICAL PTY LTD ACCEPTS NO LIABILITY FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE OR INABILITY TO USE THIS PRODUCT OR FROM DEFECTS IN THE PRODUCT, AND NEITHER ASSUMES NOR AUTHORISES ANY REPRESENTATIVE OR ANY OTHER PERSON TO ASSUME FOR IT ANY OBLIGATION OR LIABILTY OTHER THAN AS EXPRESSLY PROVIDED HEREIN.*'Lifetime Warranty' means up to a maximum of 15 years, which is the expected lifespan of the Product. Effective as of January 1st 2016.