Posterior Beach Walker
Operator Manual

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Important Safety Instructions:

- This product is meant for outdoor use only.
- This product is designed specifically for use on sand.
- The user of the beach walker should be 200 lbs. or less.

Parts and Accessories:

- Seat
- Frame
- Polyurethane balloon wheels and swivel casters
- PVC wheels

- Low Pressure Tire Gauge
- Hand Pump

**Features:**

- Frame
  - Lightweight aluminum
  - Foldable
- Wheels
  - Polyurethane front swivel wheels
- PVC rear wheels
- Height adjustability range from 28"
- Foldable seat
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1. Introduction

1.1 General Overview

The beach walker used a prefabricated frame which was modified to meet the needs of the client. The frame was purchased from Global Industrial. It is made of lightweight aluminum, and had four rubber wheels and was height adjustable. The front wheels had a locking mechanism to allow for switching from swivel to non-swivel, and the rear wheels had forward and reverse mobility.

The frame was altered to allow for use on the beach. Two metal clamps were fabricated to attach the front swivel casters and 30cm polyurethane balloon wheels to the frame. The frame is height adjustable, with a minimum height of about 28”. Two 22cm PVC wheels were attached in place of the rear rubber wheels. A prefabricated foldable seat was also attached to the frame.

1.2 Operating the Beach Walker

The beach walker is designed for use on the beach, in sand or other soft surfaces. The user of the beach walker must not weight more than 200 lbs.

2. Maintenance

2.1 Mechanical Maintenance

2.1.1 Frame

To properly maintain the frame, ensure that it is cleaned regularly. Check the frame periodically to ensure that no welds have come loose. In the event that a weld has come loose, do not use the walker until the weld has been properly repaired by a professional.

2.1.2 Tires

The tires should be checked regularly for wear. If the tires become too worn, it is recommended that they be replaced. Check the air pressure of the tires periodically using a low pressure tire gauge, to ensure proper pressure. A hand pump should be used to prevent over-inflation. The front wheels have an ideal pressure range of 2-4 psi, and the rear wheels have an ideal pressure of 2.5 psi.

2.1.3 Seat

The seat was purchased from Global Industrial, and was made specifically for the Nimbo youth walker. The seat folds up, and Velcro was attached to both the frame and the seat to ensure that it remains folded up securely when not in use. The Velcro strips should be checked periodically to confirm a secure attachment.
2.2 Environmental Maintenance

The surest way to maintain the beach walker is to use it in the appropriate environment and to care for it regularly. The walker is meant to be used on sand and other soft surfaces.

3. Technical Description

The beach walker has many subunits which are all connected together. Each subunit will be described in-depth, with an accompanying picture. The final prototype can be seen in Figure 1.

3.1 Frame

The frame that was used for the beach walker was a prefabricated Nimbo Lightweight Posterior Posture Walker, purchased from Global Industrial. It is a Wenzelite Rehab brand frame, and is a size youth. It has a 34.5” depth opened at base and a 15” width inside the hand grip. It weighs 12.5 lbs. and has a 200 lb. weight capacity. The handlebar height range is 23-30.5”, and this range was modified to better suit the client’s needs.

3.2 Front Wheels

The hubs of the front wheels are made of polypropylene and the tires are made of polyurethane. The wheels are 30cm, and each wheel can hold a maximum payload of 121 pounds. They wheels are mounted onto swivel casters, which enhances maneuverability and ease of turning. The front wheels are Wheeleez brand, and were purchased from Beach Carts USA.
3.3 Swivel Casters and Mounts

Two swivel caster mounts were fabricated using 5” x 5” metal sheets. They were welded to aluminum rods and screwed onto the swivel casters.

3.4 Rear Wheels

The hubs of the rear wheels are made of polypropylene and the tires are made of PVC. The wheels are 22 cm, and each wheel can hold a maximum payload of 77 pounds. They are one directional. The rear wheels are Wheeleez brand, and were purchased from Beach Carts USA.
3.5 Metal Clamps and Height Adjuster Additions

Four metal clamps were fabricated to attach the walker frame to aluminum rods, which were welded to the front wheel swivel caster mounts. The additions allow for a greater range of height adjustability.

3.6 Seat

A prefabricated seat was purchased from Global Industrial. The seat is made specifically to fit on the Nimbo youth walker and is foldable, which will provide our client with the option of sitting to rest whenever he needs to.

Velcro was attached to both the frame and the seat to ensure that it remains folded up securely when not in use.
4. Troubleshooting

Problem: Walker is not riding smoothly over sand

Possible Causes:

1. Tire pressure may be too low
2. Tires may be punctured

Possible Solutions:

1. Check tire pressure using gauge
2. Inflate tires as necessary until they reach optimal psi
3. Repair puncture