

≡ *Action Trike*

.... unlocking the full potential of a hand-cycle

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Mobility Cart — 2012 to 2024



Action Trike — 2025 to ???



For 25 to 30 years the original basic design of the *Mobility Cart* has been accepted as adequate; it is sturdily built and only cosmetic changes have been implemented. When I served as Chairman of the Design & Standardization Committee for Mobility Worldwide in 2015, I became increasingly aware of the nearly unlimited potential for improvements. In 2016, I addressed the Annual Conference and challenged the organization to embrace significant changes to the vehicle, including but not limited to, making the vehicle lighter, replacing wood with plastics, and re-designing a number of the components. In my focus on developing the full potential of this mobility vehicle, I realized that a whole new design was necessary to address numerous interrelated changes. I am often asked: “What prompted you to totally re-engineer the mobility vehicle?” The **focus** of the re-design was to provide always better benefits to the Recipient; but the **motivation** for this re-design was God’s directive for Christians to love their neighbor!

The name “Action Trike”: The very name conveys what we believe is key to what our Recipients need—a vehicle that goes much further to empower them to be as *active* as is possible and that inspires them to *actively live their life* to their fullest potential! This vehicle not only gives *Mobility*, but also brings *Dignity*, and along with that, it inspires *Hope*!

The **Frame on the Action Trike** is made using CNC bent 1” square tube (14ga center beam, two 16ga side beams). The body is dropped from 7.5” of ground clearance to 4.5” clearance, making it far easier to get on the vehicle. But the new frame does more: it opens up the front end by getting rid of the toe-board; it allows 6” of additional foot room along both sides of the gooseneck; it uses steel side beams to support the Seat (no need for wood support); it allows for significantly more seat adjustment; it combines the gooseneck with the main center beam without welds; and substantially increases the stability of the Action Trike due to a significantly lower center of gravity. You can see the differences in the vehicles pictured above. Also, the Frame is not as rigid as the traditional frame and has a softer ride—strong, quiet, and smooth—it acts like a shock absorbing frame.



The **Rear Wheels on the Action Trike** are 19.5” flat free wheels Marastar manufactures for us to our specifications with a steel rim and Peer Bearings. Weight is about 2–3oz more than the 15” rear wheels. Larger circumference wheels handle uneven surfaces more easily (much less ‘wheel friction’). Width is about 2” (current rear wheels have 2.75” tread width). Lesser flotation surface of a narrower tread is set off by the increased flotation surface of the larger circumference wheel.

The **Plastic Body on the Action Trike** is made of a 1/4" HDPE which is 'thermal formed with a vacuum assist' and it weighs only 6.5lbs; it has an extremely high UV rating (it is the same 1/4" HDPE sheets that John Deere uses for it's garden cart dump bodies). The Body is trimmed and shaped to our specifications; they nest well in each other (at 1-1/4" spacing) for shipping to us. The front wheel guard protects the feet of the recipient. The

bottom of the plastic Body is "trayed" for strength, stability and rigidity, and it is supported by all 3 of the Frame parts. The Body has 4 drain holes, and it is riveted to the Frame, using drive rivets; the nesting space increases to 4-1/2" spacing after frame attachment. We weld the Rear Axle Beam assembly and assemble the Frame components in our Shop.

The **Seat System on the Action Trike** is composed of a rotomolded HDPE Seat Base (with steel reinforcing tubes inside) and a removable hi-quality cushion that is sculpted for avoiding pressure sores; the rotomolded curved Seat Back provides comfort. This system was designed to be very adjustable for different recipients. The Seat can be set higher or lower with the 3 slots in the bracket and the 2 bolt holes in the Frame (4 height settings) for the rider; the Seat can slide forward or backward in the slots a total distance of almost 9"

for the rider; and the Seatback can be raised 3". This design provides extra flexibility in adjusting the Seat system down and forward for use by a 5 year old, or adjusting it up and back for a person that is 6'6" tall — in short it can grow with the recipient and be adjusted accordingly. Seat adjustments are made easier by using Knob Bolts instead of hex bolts.

The **Tractor Unit on the Action Trike** has changed. Since the Action Trike was lowered considerably, the Fork has been redesigned to make it more compact and to remove unnecessary space between the wheel and the Fork. The Pedal Post has been shortened and is now a 1" x 1-1/2" rectangle tube; the spacing between the T-bolt holes is reduced to 3". The chain was shortened to 60" and the brake shoe changed from 1" round bar to 7/8" round bar. The drive sprocket in the Crank was increased from 21T to 25T to allow for more speed; to facilitate that speed increase the Crank arms were increased 1/2" in length to provide the necessary power. The Fork legs were shortened, and the front axle ends and cotter pins were recessed into the Fork legs for safety reasons. Other parts of the Fork were also adjusted. A Knob Bolt is used for chain tensioner adjustments.

Summary: The **Action Trike** is a totally different vehicle—the only parts that the **Mobility Cart** and the **Action Trike** now share in common are the Front Wheel and the Bearings. Every Work Station and every Process at our Shop has changed; every part is made differently, and new tooling and jigs were made. The Action Trike now uses all Metric fasteners. With all of these changes, the Action Trike is less bulky, and it weighs about 20 pounds less than the average Mobility Cart being produced. It now fits in an even smaller packing box— 40" x 29" x 13.5"— which permits us to increase the number of Action Trikes we can ship in a 40' hi-cube Container from our current 231 units to 237 units.



Mobility Cart

Action Trikes—same units, but very adjustable seating

