

HOW TO CHOOSE A HANDCYCLE THAT BEST SUITS YOUR NEEDS – 1

By H. Lewis

There are at least 4 basic different handcycle designs, so it is increasingly difficult to choose one that will give you the most riding pleasure. Buying a handcycle is also an expensive exercise, so it helps to buy the right one first time round. It is no good looking at the world #1 handcyclist and going out to buy the bike he or she rides, unless your abilities are similar. This article does not cover 'clip-on' handcycle attachments, but only dedicated handcycle designs.

There are 4 basic designs that cater for most disabilities, as shown in the sketches below. So the first decision to be made is: which of these designs is best suited to my needs.



The **first** design, where the seat back is reclining the most, is best suited to high level injuries, where the individual has little or no trunk control. The crank is set higher than on other designs – this is for people with limited or no tricep strength, as most of their strength is in the 'push' phase of turning the cranks. Having the crank positioned higher maximizes the ability of the rider to push the cranks round. The reclined seat back (and sometimes neck support) provides extra stability to the torso, giving the rider something to push against.



The **second** design has a less reclined seat back and a lower crank. This design is best suited to riders with functional ability from T4/5 to T9/10 level. Here the crank is positioned just below the height of the heart, so the rider can push and pull the cranks equally hard. The seat back is more upright as the rider should have some measure of trunk control.



The **third** design is best suited to people with full trunk control as the seat back is very low, so provides no support for pushing against. The rider uses his trunk muscles to stay sitting upright and also to help propel the cranks. This design is known as a 'longseat', as the legs are stretched out in front of the rider. How do you know if you should have one of these bikes rather than one with a higher backrest? The best guideline is: if you can paddle a standard paddleski or a canoe without any modifications, then this is the bike for you – or you may prefer the 'kneeler' shown below.



The **fourth** design shown is a 'kneeler', where the rider is sitting on his knees and using his trunk muscles to support his body and propel the cranks round. This design is best suited to amputees or individuals with full trunk control who can either walk or stand a bit. The rider will generally secure his legs with straps for added stability.

Once you have decided on the basic design you want to ride, you will be faced with a multitude of other decisions to be made – these will be covered in subsequent articles.

[Sketches courtesy of <http://www.schmicking.com> website.]