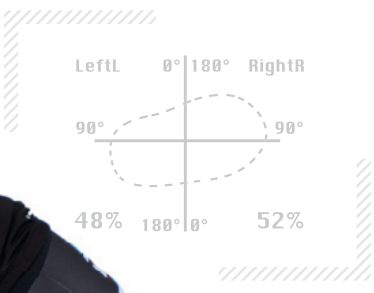
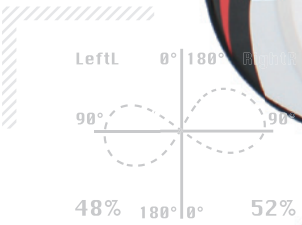
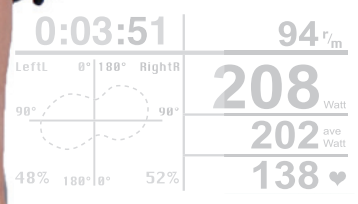


Wattbike

Bike Fit



25-30°



Endorsed by:





Bike Fit

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SECTION 1 – General Wattbike Cycling Position and Set Up

It is important that to set up a safe and comfortable cycling position. The correct set-up is crucial to maximise performance, prevent injury and ensure the most comfortable riding position on the Wattbike. Set up takes account of various body shapes, bone length discrepancy, flexibility/core strength and injury history.

The correct sequence for set up is, saddle height, saddle fore/aft position, handlebar height and handlebar fore/aft position.

Before starting, ensure that the saddle is parallel to the floor; use a spirit level if necessary.

Saddle Height

The easiest way to get a rough height for the saddle height is to stand the rider next to the bike with the heel pushed into the back stabiliser, and then lift the saddle up so that the top of the saddle is level with the bony protrusion of the hip.

Sit the rider on the Wattbike and align the crank arms with the seat post, place the heel of the foot on the crank arm nearest the floor – the leg should be straight (but not locked out).

When clipped in (or with feet in the toe clips) and with the pedal at its longest stroke (inline with the seat post) there should approximately 25-30 degrees bend on the knee. The rider should be able to 'drop the ankle'.

Raise/lower the saddle height to get the correct leg position. ALWAYS DISMOUNT THE WATTBIKE BEFORE MAKING ADJUSTMENTS TO THE SADDLE.

Now get the rider to pedal backwards, they should be able to complete rotations with only a slight rocking of hips and without the legs locking out.



Saddle fore/aft Position

With the feet clipped in (or in the toe clips) bring the crank arms parallel to the floor, drop a plumb line from the inside of the knee, in the indentation next to the patella - it should bisect the pedal spindle. Adjust the saddle fore/aft to ensure that the knee is over the pedal spindle.

NOTE – if you need to move the saddle fore/aft severely, you may need to raise/lower the saddle to compensate

The difference between the forward and back positions of the saddle fore/aft adjustment is 6 cm

Handlebar Height (Saddle to Handlebar Difference)

Adjust the handlebar height so that it is no more than 4 to 10 cm lower than the saddle height (depending on fitness and flexibility, a higher handlebar height may be more comfortable) – for general exercise classes the saddle and handlebars should be at the same height - Use a long spirit level from the saddle across to the handlebar to set this height.

Once the handlebar height has been set, check it by asking the rider to lift their hands off the handlebars – they should be able to hold position.

NOTE – with the saddle and handlebar both set at maximum height there is a saddle to handlebar difference of 7 cm – for safety reasons do not go above minimum markings – extra long stems are available which increase the settings by 10 cm.



Handlebar fore/aft Position

Ask your participant to place their hands on top of the handlebars and bring the crank arms parallel to the floor – drop a plumb line from the elbow, it should fall through the inside of the knee, in the indentation next to the patella and should bisect the pedal spindle – adjust handlebars fore/aft to get the correct position. ALWAYS DISMOUNT THE WATTBIKE BEFORE MAKING ADJUSTMENTS TO THE SADDLE OR HANDLEBARS.

An alternative method is to look at the angle of the back which should be at 45° parallel to the floor with an upper arm to torso angle of 90°.

The difference between the forward and back positions of the handlebar fore/aft adjustment is 6 cm.

By following these simple steps the rider will be placed in the optimum position for both comfort and effective cycling technique. Any slight variation in correct set up will alter the alignment of the joints, muscles and subsequently technique. Ensure that you follow these simple steps with every new rider and recap where required with your existing, regular riders.



Notes on Bike Set Up

NOTE 1

There are many variables that influence bike set up from anatomical differences through to equipment differences and event specific set up; individual cyclists may/will know their own set up but for general use and advice to Wattbike users the process outlined above should help to give them a safe cycling position.

NOTE 2

Saddle height formula

Measuring inseam (without shoes)

Stand with back flat against a wall with heels as close to wall as possible. Place a hardback book vertically as far as possible into the inseam with the edge flush against the wall. Make sure the book protrudes out enough to allow measurement from the top edge of the book down to the floor.

Take inseam measurement multiply by 0.885

e.g. Inseam 82 cm X 0.885 = 72.6 cm so saddle height = 72.6 cm above the bottom bracket axle – this ensures that leg is not at full stretch.

Other multipliers suggested are 1.06 and 1.08, 1.06 for women who flex forward at the hip and 1.08 for men who flex forward through the mid and upper spine.

NOTE 3

Saddle fore/aft

Depending on a cyclist's preference and type of racing back/forward position may vary 10-20 mm

NOTE 4

Handlebar height (saddle to handlebar differences)

British Cycling Guidelines are relative to a cyclists' height:

Rider height (cm)	Saddle-to-handlebar difference (cm)
150	3
155	4
160	5
165	6
170	7
175	8
180	9
185	10
190	11
195	12
200	13



NOTE 5

Handlebars fore/aft

Set up varies greatly by event type and aerodynamic position required.

NOTE 6

General

Set up varies depending on the demands of the type of cycling – track sprinters and track endurance riders will differ, MTB, BMX, Cyclo-cross have their own set up differences as do road and time trial cyclists which they may wish to replicate on a Wattbike.



SECTION 2 Wattbike specific bike set up measurements

Wattbike saddle positions

Saddle height (Race Saddle)

The Wattbike seat post height = 45 cm with the seat post set at 0. There are 12 cm between the seat post marking 0 and top of the saddle [race saddle]. Maximum seat height = 82 cm (measured from the center of the bottom bracket/crank arm to the top of the saddle [race saddle] along the direction of the seat post).

There are 22 cm between the seat post marking 0 and top of the saddle [race saddle] with the long seat post. Maximum seat height = 92 cm (measured from the center of the bottom bracket/crank arm to the top of the saddle [race saddle] along the direction of the seat post)

The Wattbike seat post angle is 75°.

Wattbike saddle height settings

*Total saddle height in cm measured from the center of the bottom bracket/crank arm to the top of the saddle [race saddle] along the direction of the seat post (using saddle height formula - inseam x 0.885 – rounded to nearest 0.5 cm).



Seat tube/stem height in (cm)*	Wattbike stem setting	Total saddle height	Inseam (cm)
45	0	57	64.5
46	1	58	65.5
47	2	59	67
48	3	60	68
49	4	61	69
50	5	62	70
51	6	63	71.5
52	7	64	72.5
53	8	65	73.5
54	9	66	74.5
55	10	67	76
56	11	68	77
57	12	69	78
58	13	70	79.5
59	14	71	80.5
60	15	72	81.5
61	16	73	82.5
62	17	74	84
63	18	75	85
64	19	76	86
65	20	77	88
66	21	78	88
67	22	79	89.5
68	23	80	90.5
69	24	81	91.5
70	Min 25	82	93



Wattbike saddle height settings with extra-long seat post (extra 10 cm)

*Total saddle height in cm measured from the center of the bottom bracket/crank arm to the top of the saddle [race saddle] along the direction of the stem (using saddle height formula - inseam x 0.885 – rounded to nearest 0.5 cm)

Seat tube/stem height in (cm)*	Wattbike stem setting	Total saddle height	Inseam (cm)
45	0	67	76
46	1	68	77
47	2	69	78
48	3	70	79.5
49	4	71	80.5
50	5	72	81.5
51	6	73	82.5
52	7	74	84
53	8	75	85
54	9	76	86
55	10	77	87
56	11	78	88.5
57	12	79	89.5
58	13	80	90.5
59	14	81	91.5
60	15	82	93
61	16	83	94
62	17	84	95
63	18	85	96.5
64	19	86	97.5
65	20	87	98.5
66	21	88	99.5
67	22	89	101
68	23	90	102
69	24	91	103
70	Min 25	92	104



Handlebar positions (Standard Wattbike handlebars and Drops)

Wattbike handlebar height

The Wattbike handlebar post height is 49 cm with the handlebar post set at 0. There are 7 cm between the handlebar post marking 0 and top of the handlebars

Wattbike handlebar settings

*Measured from the centre of the flywheel cage to the top of the handlebars along the direction of the handlebar post the maximum handlebar height it is 74 cm

Handlebar post height (cm)*	Wattbike handlebar post setting	Total handlebar height (cms)
49	0	56
50	1	57
51	2	58
52	3	59
53	4	60
54	5	61
55	6	62
56	7	63
57	8	64
58	9	65
59	10	66
60	11	67
61	12	68
62	13	69
63	14	70
64	15	71
65	16	72
66	17	73
67	18	74



Wattbike handlebar settings with extra long stem (extra 10 cms)

The Wattbike handlebar post height is 49 cm with the handlebar post set at 0. There are 17 cm between the handlebar post marking 0 and top of the handlebars.

*Measured from the centre of the flywheel cage to the top of the handlebars along the direction of the handlebar post the maximum handlebar height it is 84 cm.

Handlebar post height (cm)*	Wattbike handlebar post setting	Total handlebar height (cms)
49	0	66
50	1	67
51	2	68
52	3	69
53	4	70
54	5	71
55	6	72
56	7	73
57	8	74
58	9	75
59	10	76
60	11	77
61	12	78
62	13	79
63	14	80
64	15	81
65	16	82
66	17	83
67	18	84

Handlebar height (saddle to handlebar differences) based on height

*Measured from the top of the saddle to the top of the handlebars

Rider height (cm)	*Saddle-to-handlebar difference (cm)
150	3
155	4
160	5
165	6
170	7
175	8
180	9
185	10
190	11
195	12
200	13

The overall riding position



or



Overall Tribar riding position

A torso to horizontal angle of 1° is optimal (note this is for a triathlon bike as this reduces frontal area and aids airflow over the body), this can be achieved by reducing the torso to lower body angle. However, an acute angle may also reduce pedalling effectiveness and power output.

Much of the rider weight is transferred through the upper arm. An upper arm to torso angle close to 90° with the shoulder directly above the elbow ensures that the weight is transferred through the humerus and skeletal structure. It also helps to get the torso (back) flatter and reduces the work required to support body weight.

If the angle is less than 90° the rider's weight is shifted too far forward compromising bike handling.

An angle greater than 100° shifts the riders weight back onto the saddle which may result in discomfort and injury and also compromise bike handling.



Overall Drops riding position

In the drop position the saddle height and handlebar height should combine to give the rider a relatively flat back position with 7.5 cm to 10 cm between elbow and knee at the 3 o'clock position.

