INSTRUCTION MANUAL

TiArrow Z-line

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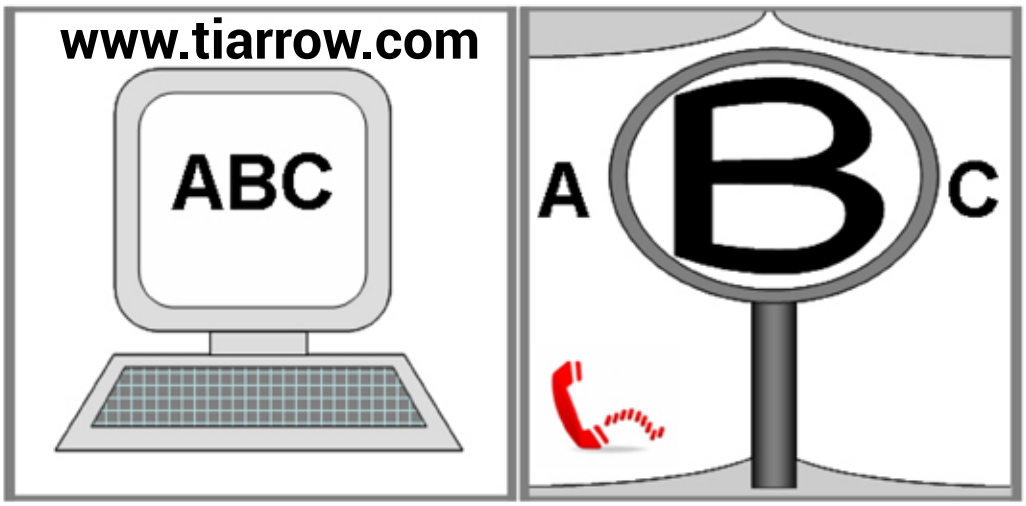
tiARROW

Congratulations on your new wheelchair from TiArrow

Thank you for choosing one of our models. We hope you will be satisfied and that you experience all the benefits of our ultra-light and high-quality active wheelchair. TiArrow has been manufacturing wheelchairs in Sweden since 2002 and we specialize in lightweight wheelchair designs in titanium and magnesium. Our ambition is that all our models should have the highest quality, lowest weight and have the best driving characteristics in the market.

Good luck, and drive carefully.



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All information is also avalible on www.tiarrow.com

Content

Intended use

Type classification and intended use

TiArrow's wheelchairs are designed for those who need a very easy-to-drive "every day" wheelchair with good seating ergonomics and good driving characteristics. The model is intended for experienced and active users who are comfortable with operating a tilt-sensitive wheelchair without tilt protection.

The low weight and compact design make it easy to load into the car. To get the most out of your new wheelchair, and to minimize the risks, you or your authorized prescriber must do an initial setup so that you have optimal seating position, get the right driving characteristics and that the wheelchair is balanced according to your conditions and body size.

Technical information on the materials

Your TiArrow is made of titanium and carbon fiber. The titanium frame is very durable. To keep it clean, wipe it off with a damp cloth. Seat, side covers and backrests are made of carbon fiber that is sensitive to damage done with sharp edges, heavy bumps and unusual point pressures. If you suspect that your wheelchair has been damaged, examine all parts carefully or have a specialist check it.

The side guards are NOT designed to sit on. If bend too much inwards they might crack.

Read the instruction manual!

Before using your new wheelchair for the first time, we encourage you to carefully read through these operating instructions which contain important information about the use of the wheelchair. Follow the safety instructions to ensure that you are using the wheelchair safely.

Security Advisories/Warnings

When you have received your new wheelchair, make sure it corresponds to your order and do a technical inspection of the chair as follows:

- ☑ Check the seat width
- ☑ The drive wheels are firmly secured after mounting.
- ☑ All four wheels touch the ground.
- ☑ The fork for the front wheels can be swiveled easily.
- ☑ The backrest is easily adjustable.
- ☑ The brakes work properly.

WARNING: This wheelchair is not intended for the carriage of passengers in a motor vehicle.

Balance, tip sensitivity

The position of the drive wheels, the angle of the backrest and the adjustment of the back are what most affect the tipping sensitivity of the wheelchair. After adjusting the chair, make sure that you feel secure with the chair's balance. Tipping sensitivity is also affected by whether a bag is placed on the backrest, you are leaning / stretching backwards, the tires are worn, the tires have the wrong pressure or if an unforeseen change of ground occurs.

TiArrow's wheelchairs are designed to be as easy to drive as possible and are primarily aimed at the advanced user who is aware that the chair is very easily tilted backwards and adjusts its driving style accordingly. Because the chair is easy to drive, it responds quickly and easily to the commands you give it. If you give the chair the wrong command, you can, for example, tilt back because you do not have anti-tip protection. It is thus quite possible to roll over with the chair.

Keep in mind that it is important that you have done a proper test of the chair and take the time to practice your wheelchair driving technique. If you have any questions regarding wheelchair driving, you should contact your prescriber or therapist / physiotherapist.

Moving / Lifting

Due to the extremely low weight of the chair, it can move sideways in the braked position when you need to move to the chair from the side. When you start using your Z-line, which has a very unique design, we recommend that you practice this step together with your prescriber. If the wheelchair is to be lifted with the user in, the lift must always be lifted in the titanium frame of the wheelchair, ie not in the seat part, anti-tip guard, footrest, wheels or other moving parts.

Brakes

Be sure to always lock the brakes on your wheelchair when not rolling. Also also remember to unloc before moving.
Be carefull not to catch your fingers in the brakes when driving with the drive wheels and make sure that you do not accidentally open the brakes when moving or getting up. Keep in mind that the brakes appear to be weaker when the tires have poor air pressure or are worn. When changing the tire type, always check the brakes as the dimensions may vary.

Remember that the brakes are intended as parking brakes, not as service brakes. If you use the parking brakes while you are in motion, there is a risk that you will lose control of the direction of the wheelchair and it may stop very suddenly, which may cause you to collide with something or roll out of the wheelchair.

IMPORTANT! For the brake to work, the tires must have the correct pressure. See technical facts.

Seating position

Incorrect sitting position can cause pressure damage on your body. If in doubt, contact your prescriber immediately. Make sure that the side guards do not press too hard on the hips, it can cause pressure damage. If the sides presses too hard it's a sign that the chair is too narrow. The seat is always intended to be used with the cushion.

Driving

If the distance between the lower part of the footrest and the base is small (less than 40 mm), the footrest can hook into raised areas and cause a fall forward. If you are driven or driven down a curb with the anti-tip protector folded, it can catch at the edge and cause a fall forward. If you are unsure, temporarily remove the anti-tip cap and ask for help.

Always adapt speed and driving style to the circumstances (weather, ground, driving ability, etc.). At high speed there is a risk of losing control of the wheelchair and tipping over. Therefore, never drive faster than 7 km / h and avoid collisions in general.

Overview and the different parts/units of the chair

1. Back
2. Air valve
3. Drive wheels
4. Seat
5. Fork
6. Tires
7. Footrest
8. Front wheels
9. Chassis
10. Rear axle
11. Quick coupling hub
12. Brake
13. Drive ring

SETTINGS

When adjusting the chair to fit your sitting position and get the desired driving characteristics, it is important that you do it in the correct order. You must first adjust the correct sitting position, and only then adjust the seat's balance to obtain the desired driving characteristics. This order is necessary because the chair's balance is affected when you change your sitting position.

Keep in mind that it is important that you are careful when making settings on your chair. These affect the character and the driving characteristics of the chair and not least your own sitting comfort. If you are unsure, you can try different settings for a day and feel so that you really get the right sitting and balancing on the chair. If not, you can adjust again.

You should adjust the following in turn:

1) Choice of cushion
3) Height of footrest
4) Wristband position
5) Position of the backrest
7) Balancing the wheelchair
8) Brake position

Choice of cushion

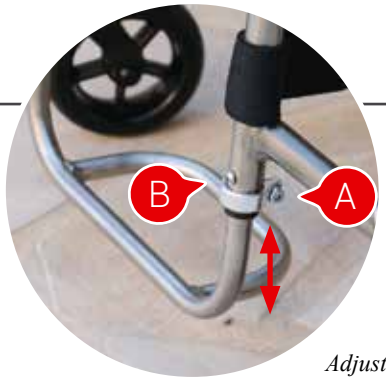
It is important that you choose the cushion before making any other adjustments to the chair. The cushion determines how high you sit in the chair, which affects other settings.

Height of footrest

The footrest can be adjusted upwards or downwards in three steps.

Loosen the clamps (A) and remove the screw (B), then move the footrest up or down until you find the correct height.

Replace screw (B) to desired position and then tighten clamps (A).



Wristband position

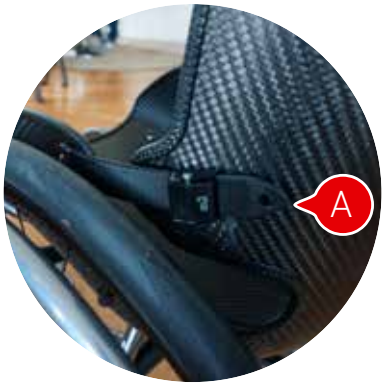
The stretch of the wristband can be changed and will affect how far forward you place your feet on the footrest. Suitable stretching depends largely on how long or short legs you have.

Backrest angle

The angle of the backrest can be changed in several steps. Push the upper back forward. A distinct click is heard for each step.

When you want the backrest to return to its original position, press the button (A) on the respective straps.

This can be done while you remain in the chair.



Wheelchair balancing

To change the wheelchair's balance, move the seat forward or backward. The farther back you place the seat, the more "back balanced" the chair becomes. This makes the chair easy to reach, and you gain more weight over the drive wheels. The chair will be easier to maneuver and will also be easier to "tilt up on the rear wheels" as you cross the curbs, thresholds and more.

However, the chair must not be too back-balanced, then you risk tipping backwards. It is important that you take the time to try out a balance that fits your body, and driving technique, so that you really get the chair as easy as possible, without the risk of tipping.

The seat can be moved 50 mm forward/backwards.

Loosen the four screws that secure the seat (do not remove them completely).

Then slide the seat forward or backward.

To move the seat to adjust the balance:

1 Loosen the five screws that secure the seat. Do not remove the screws.

2 By sliding the seat part forward or back, you can now change the balance point of the chair.

Moving the seat forward will make the balance point heavier. (It will be harder to lift the front wheels).

Moving the seat backwards makes the balance point easier. (The chair is tilting back more easily).

3 Tighten the five screws again.

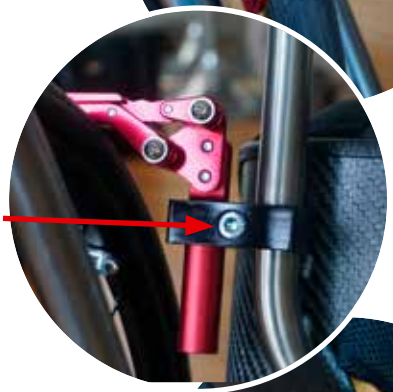
4 Insert the cushion and test the chair. If necessary, repeat the procedure until you find the optimal position.

IMPORTANT! You should always have someone behind you when you try the chair after adjusting the chair's balance.

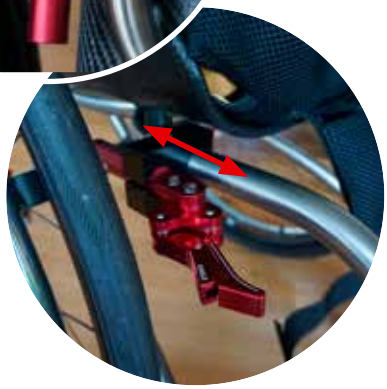
Brake adjustment

It is important that you adjust the brake for optimum operation. The brake must be adjusted so that in the locked position it drops a few mm into the tire. This is done by loosening the brake mounting screw in the chair with a Allen key. Then push the brake attachment forward or backward along the frame. Try it forward, and then tighten the locking screws again. The left and right brakes are adjusted individually. It is important to check that both brakes pinch equally hard.

The brake is tested for max 7 dergee slope, it is not safe to use it on higher gradiens.



Loosen the screw on the underside of the bracket.



Slide forward or backward

NOTE! When the air pressure drops, the tire is worn or when the tire type is changed, the effect of the brake changes. Therefore, the position of the brake should be checked at regular intervals.

Remove the wheels

To remove the wheels, open the clamp on the rear axle and pull the wheel outwards.

Open the clamp

Adjustment of lock clamp

Sometimes the clamp on the rear axle that holds the drive wheels in place may need to be tightened. This is easily done by gently tightening the clamp screw without any tools. Open the clamp as much as possible and turn the nob for tightning (pinch). You should check daily that the drive wheels have not slid out of position and if so check that the clamp snaps hard enough and pushes the wheel back.

Tightening the clamp screw

TIP! A few of the users, because of their driving style and dressing technique, tend to push the wheels and must then consider switching to traditional wheel axles with QR systems, these can not slip out of position and are in the same sizes and appearance as the wheels with 25 mm axle.

Information on transport

We want to emphasize carefully that the best option when transporting vehicles is always a transfer from the wheelchair to a regular seat with a seat belt.
It is not allowed to stay in the chair during transport.

Disassembly/Assembly

When transporting the chair in e.g. car you can remove the drive wheels.

1) Remove the cushion.
2) Release the brake.
3) Fold down the locking clamp on each side of the rear axle to release the drive wheels. Pull the drive wheels straight out to release them from the chair. When installing the drive wheels, insert the wheel axle into the rear axle. Then lock the latch.

Transporting the chair

When transporting the chair by car or air you must anker it in a good way, use the aproved anker points (see pictures).

Anker point frame front

Anker point frame rear

Anker point wheel

Transport of unoccupied wheelchair

The Z-line is suitable for transport both by car and air if unoccupied. It can be transported both with the rear wheel on or with the rear wheels of. In both cases you must secure the frame by using the recommended secure points on the frame according to pictures bellow. If the rear wheel are not attached to the frame they should also be secured, the wheel should be secured in the rim section of the wheel (not by the spokes.

Transfer information

You must practice the technique of movement with your physiotherapist/occupational therapist or other trained staff. The method described below is for advice only.

Lateral Movement

Before moving, reverse the wheelchair 5-10 cm before stopping to ensure that the castors point forward to obtain maximum stability on the chair. Position the wheelchair as close as possible to the moving position. Lock the brakes, take support against the side you are moving from. Place one hand on the far corner of the chassis on the wheelchair and the other on the support on the surface you are moving from. Carefully and with good balance, you then raise yourself to the wheelchair. Be careful not to tip over backwards when moving.

Moving / Lifting

If the wheelchair is to be lifted with users in, the lift must always be lifted in the frame of the wheelchair, not in the backrest, driving handle, footrest, wheels or other moving parts.

IMPORTANT! Only lift the chair in these areas when the user is in.

Maintenance and service

All TiArrow wheelchairs are virtually maintenance-free. However, you will need to regularly check a few parts and also regularly clean the chair to keep it in good condition.

Once a month you should:

- Wipe the chair's chassis with car shampoo or detergent and damp cloth. For heavy soiling, degreasing agents can be used.

- Clean the front wheel attachment in the fork (between the wheels and the fork). Here, hair and dust often accumulate, which means that the bearings can be damaged. Loosen the nut on the front wheel, remove the wheel and clean on both sides of the castor. Drop a drop of oil into the bearings on the respective side of the wheel. Then reinstall the wheel and tighten the nut.

- Keep the drive wheel shaft clean. Take off the wheel and wipe the shaft with a soft cloth. If you drive in rain, sand, salt and slush or rarely take off the wheels you should do this more often. Do not drop oil on the drive wheel.

- Pump the tires by unscrewing the lid from the valve and then filling with air with the appropriate valve adapter, the tires can be filled to a pressure of 8-9 bar (kg).

- Check all screws and nuts, tighten if necessary.

- Check that the chair has not been damaged.

Twice a year you should:

- Lubricate moving parts on the brake with a few drops of oil.

- Lubricate the bushing at the backrest joint point.

If necessary, you should:

- Wash the back upholstery in 60 degrees machine wash.

In case of a tire puncture consult a suitable workshop (e.g. bike repair shop, bicycle dealer ...) to have the tube replaced by a skilled person.

Repairing or changing an inner tube

1. Remove the rear wheel and release any air from the inner tube.
2. Lift one tire wall away from the rim using a bicycle tire lever. Do not use sharp objects such as a screwdriver which could damage the inner tube.
3. Pull the inner tube out of the tire.
4. Repair the inner tube using a bicycle repair kit or, if necessary, replace the tube.
5. Inflate the tube slightly until it becomes round.
6. Insert the valve into the valve hole on the rim and place the tube inside the tire (the tube should lie right round the tire with no creases).
7. Lift the tire wall over the edge of the rim. Start close to the valve and use a bicycle tire lever. When doing this, check all the way round to ensure that the inner tube is not trapped between the tire and the rim.
8. Inflate the tire to the maximum operating pressure. Check that no air is escaping from the tire.

Warranty and recycling

Warranty and service life

Tiarrow provides life time factory warrenty on the frame, 3 year on seat and wheels, 1 year on other components.

The life of your wheelchair is affected by how hard the wear is subjected to and how accurate you are with the chair's maintenance. With proper maintenance and normal use the sevice length of the chair should be more then 10 years.

Warranty and liability limitation

The warranty does not apply to un-normal wear and tear, damage due to improper handling, poor maintenance, incorrect installation or work performed by the buyer or third party, or errors due to circumstances beyond our control. The warranty will expire if the wheelchair has undergone changes made by unauthorized persons or if incorrect spare parts have been used. The TiArrow warranty does not cover costs incurred as a result of defect correction, eg shipping and travel costs, lost working hours, fees, etc.
We disclaim liability for damages, direct and indirect costs when using Z-line that does not comply with the instructions for use and the safety regulations.

Disposal/recycling of materials

If the wheelchair has been made available to you free of charge then it does not belong to you. If it is no longer required , then follow the instructions to return it as given by the organization that made the wheelchair available to you.
In the following section, there is a description of the recycling of material used on the wheelchair, in view of the disposal or recycling of the wheelchair and its packaging.

Particular regulations with regard to disposal or recycling may be in force locally and these must be taken into account when performing disposal. (This can include the cleaning or decontamination of the wheelchair prior to disposal).

Aluminum: Caster forks, wheels, help handle, anti tipping, brake.
Carbon fiber: Seat, main axel.
Plastic: Seat adjustment ratchets, seat trimming.
Magnesium: Push-ring.
Packaging: Cardboard
Upholster: Woven polyester with PVC coating.

Warrnings

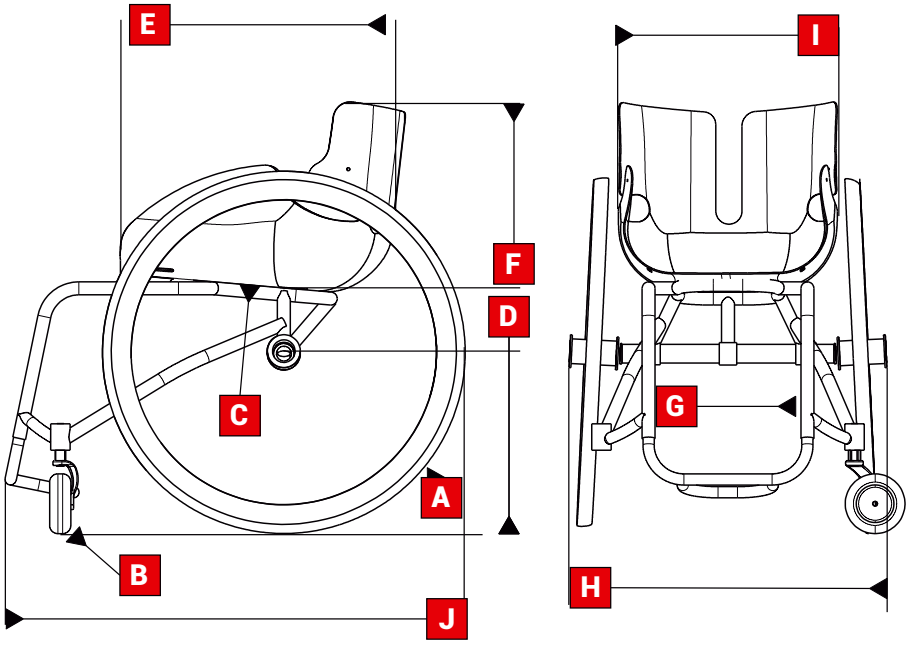
Never mechanically alter or drill the carbon components.
Never expose the wheelchair to high temperatures (such as for example as may happen to vehicles parked in the sun) or store near to heat source.

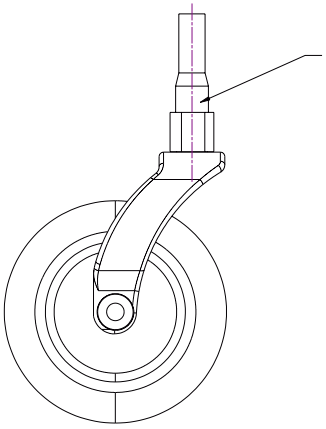
Technical facts

MODEL DESCRIPTION	TiArrow Z-line
MAXIMUM OCCUPANT MASS	95 kg
OVERALL IENGTH WITH LEGREST	780 to 795 mm
OVERALL WIDTH	550 to 620 mm
TOTAL MASS	6.95 kg
MASS OF THE HEAVIEST PART NA	48 / 42.5 cm
STATIC STABILITY DOWNHILL	>20°
STATIC STABILITY UPHILL	14.7°
STATIC STABILITY SIDEWAYS	17.8°
SEAT PLANE ANGLE	6.5°
EFFECTIVE SEAT DEPTH	330 - 470 mm
EFFECTIVE SEAT WIDTH	340, 370 , 400 mm
SEAT SURFACE HEIGHT AT FRONT EDGE	480 mm
BACKREST ANGLE	80 to 100°
BACKREST HEIGHT	250 to 370 mm
FOOTREST TO SEAT DISTANCE	430 to 460 mm
LEG TO SEAT SURFACE ANGLE	102°
HANDRIM DIAMETER	570 mm
HORIZONTAL LOCATION OF AXLE	70 mm
RECOMMENDED TIRE PRESSURE	8 - 9 bar
DRIVE WHEEL SIZE ERTO	559 or 590
CASTOR WHEELS SIZE	102 mm or 127 mm
TIRES	On 559 Schwalbe One and on 590 Schwalbe Rightrun black
BRAKES	Eagle

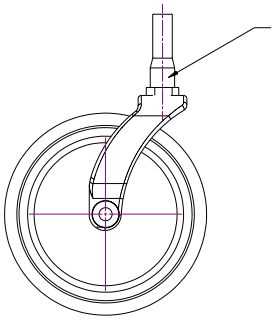
Measurements Z-Line

- **A:** Wheel size, ERTO
- **B:** Caster size
- **C:** Seat plane angle (6,5 degree)
- **D:** Seat height
- **E:** Seat depth
- **F:** Backrest height
- **G:** Knee width
- **H:** Overall width, push-ring is included
- **I:** Seat width
- **J:** Overall length of the chair





Fork with 102 mm caster, 18 mm spindel



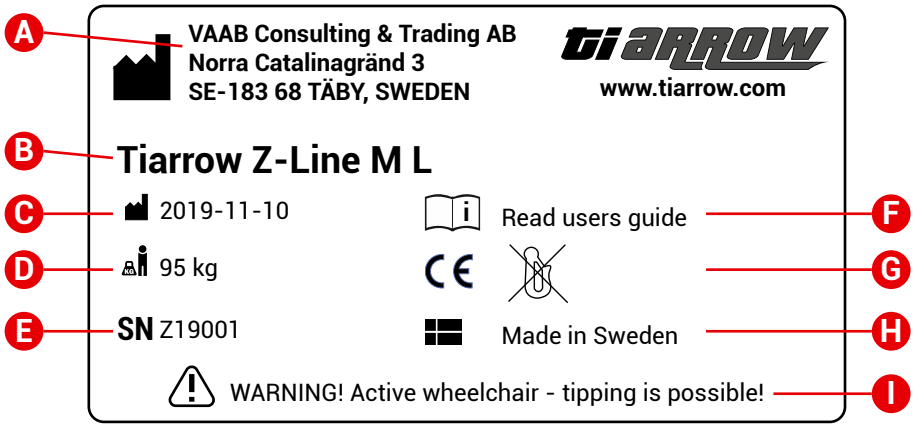
Fork with 127 mm caster, 5 mm spindel

Guide measurements

Modell code: Z-Line X X XX
Example: Z-Line S L 25 , this is small, low frame , ERTO 559

Modell	D	G	H	I	J
Z-line S L 25	415 mm	215 mm	550 mm	340 mm	780 mm
Z-Line S H 25	430 mm	215 mm	550 mm	340 mm	780 mm
Z-line S L 26	430 mm	215 mm	560 mm	340 mm	795 mm
Z-line S H 26	445 mm	215 mm	560 mm	340 mm	795 mm
Z-line M L 25	415 mm	245 mm	580 mm	370 mm	780 mm
Z-line M H 25	430 mm	245 mm	580 mm	370 mm	780 mm
Z-line M L 26	430 mm	245 mm	590 mm	370 mm	795 mm
Z-line M H 26	445 mm	245 mm	590 mm	370 mm	795 mm
Z-line L L 25	415 mm	275 mm	610 mm	400 mm	780 mm
Z-line L H 25	430 mm	275 mm	610 mm	400 mm	780 mm
Z-line L L 26	430 mm	275 mm	620 mm	400 mm	795 mm
Z-line L H 26	445 mm	275 mm	620 mm	400 mm	795 mm

A Producer
B Model
C Date of production
D Max user weight
E Serial number
F Read instructions
G CE certificate
H Country
I Warning



Contact

If you have any questions or need help with your wheelchair, contact your local supplier. To get in touch with the manufacturer see info below:

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