SERVICE MANUAL

ENGLISH

SERVICE MANUAL

EGO
EGO CUSTOM
EGO CARBON

Rev. 2 - 2021/05

EGO

EGO CUSTOM

EGO CARBON

progeo ACTIVE DESIGN

E G O
EGO CUSTOM
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GENERAL WARNINGS

ANY ADJUSTMENT CAN BE CARRIED OUT EXCLUSIVELY BY QUALIFIED AND AUTHORIZED BY REHATEAM S.R.L. PERSONNEL.

It is forbidden to carry out any modifications, even when possible, to the original design.

Any adjustments and/or any modification that is carried out by non-authorized personnel will immediately void the warranty on the product and it relieves Rehateam s.r.l. from any responsibility on any malfunctioning and/or damage due to such adjustments/modifications.

Always contact Rehateam s.r.l. and its technicians for any non-standard requirements or modifications to allow them to evaluate such modifications and verify that they will not compromise the normal and safe use of the wheelchair.

Any modification of the original parameters and set up could seriously compromise the safe operation of the wheelchair causing damage to both the user and the wheelchair itself.

After every adjustment made to the wheelchair, check carefully that all parts are correctly fixed. Check that all screws and nuts are tightened and that all moving parts are functioning correctly.

After any adjustment, always test the wheelchair before giving the product to user and/or his/her attendant.

Rehateam s.r.l. disclaims any responsibility for damage to the product, to any object or to people due to any modification that is not properly performed or that, in any case, does not guarantee safety to the user.

SERVICE MANUAL

E G O

(including the version Custom)

FRONT HEIGHT 1

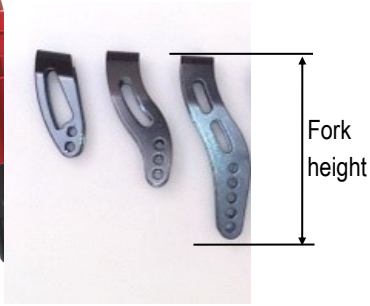
(caster on fork)

Standard version

Holes intervals – 12,7 mm

Sport – 2 holes – h. 88
Small – 3 holes – h. 112
Medium – 5 holes – h. 152
Long – 4 holes – h. 178

Versione with V-design support



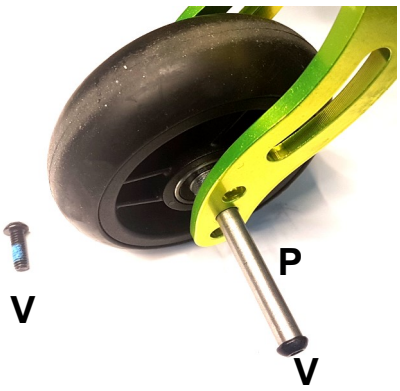
Holes intervals – 12,7 mm

Sport – 2 holes – h. 88
Small – 3 holes – h. 112

Versione with Integrated bearings

Holes intervals – 12,7 mm

Sport – 2 holes – h. 100
Small – 3 holes – h. 115
Intermediate – 4 holes – h. 145
Medium – 5 holes – h. 170



The entity of the adjustment obviously depends on the caster and fork's sizes.

Screw off the bolt **V** while holding the other.

Remove the axle **P**.

Position the caster to another hole, insert the axle and fix the bolt **V** holding the one on the other side.

Pay attention to the spacers between caster and fork.

It is advisable to spread a drop of mild lock thread glue on the bolts **V**.

FRONT HEIGHT ADJUSTMENT 2

(standard fork and axle)

Only for forks with Ø 12 axle hole, it is possible to change the axle **P** with a longer one (usually 25mm longer).

To replace the fork axle, first you need to remove the fork from its support.

Remove the cap and, with a 19 mm tubular box spanner while holding the fork with one hand, screw off the locknut **B**.

Now, hold the axle in its point **A** (16 mm spanner), screw off the locknut **D** and remove the axle.

Insert the new axle and firmly tighten it on the fork.

Similarly, you can change the fork with another of different size.

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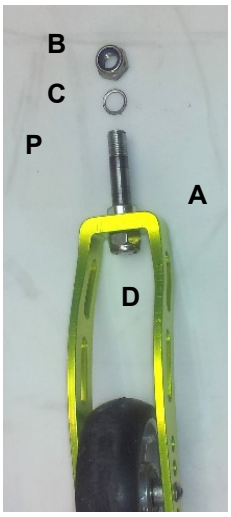
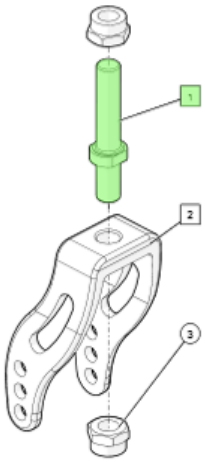
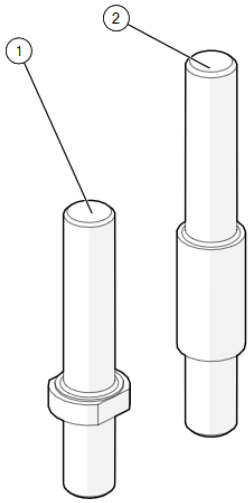






To get access to the nut **D**, it may be necessary to remove the wheel.

If the locknut **D** is too hard to unscrew, warm it with a hot air blower.

When assembling the fork on the support, put the washer **C** and then the locknut **B**. screw the locknut **B** holding the fork. The correct torque has to zero the vertical play while letting the fork smoothly swivel.

Remember that the front height adjustment can affect the seat inclination, so it is necessary to check and adjust the fork angle

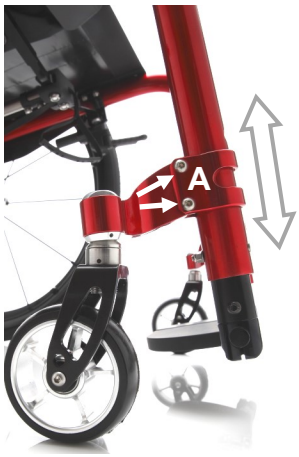
FRONT HEIGHT 3

Sliding the fork support

(not for version with swing away footplates)

All the following fork supports are fixed to the frame with clamp system.
Once you loose the clamp, you can slide the support along the frame and change the front height.

STANDARD SUPPORT



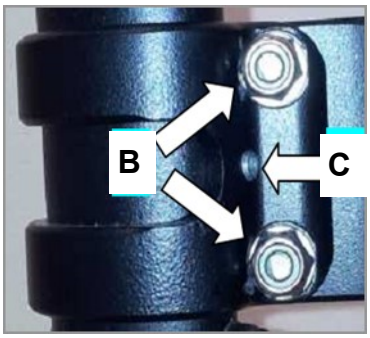
SUPPORT WITH SPIRIT LEVEL

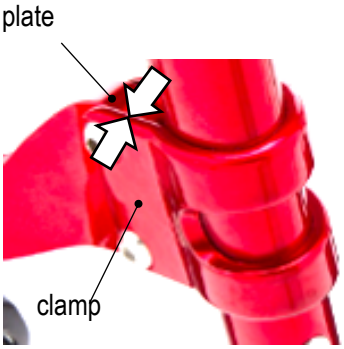
V-DESIGN SUPPORT

V-DESIGN 2.0 SUPPORT

Standard Support and Support with Spirit Level

Loosen the headless bolt **C** and the two nuts **B**.
Slide the support upward or downward to the desired height.
Check that the two bolts **A** are fully tightened.
There must not be any room between clamp and plate.
Fix the two nuts **D** holding the bolt **A** and screw the headless bolt **G**.
Repeat the same operations on the other side making sure the height is the same. The two front wheels must be touching the ground.

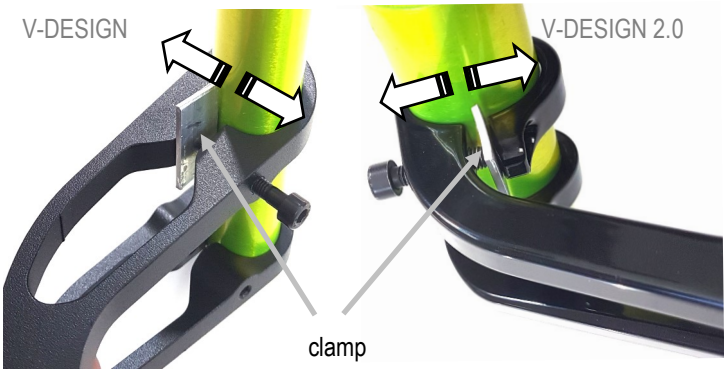




V-Design and V-Design 2.0 supports

Loosen the two bolts **A** and slide the support upward or downward to the desired height.
Fix the two bolts **A** hard**.**
If, after loosening the two bolts the support is too hard to move, remove the bolts, screw them from the inner side of the support, put and hold a little plate or washer between the two inner walls of the support and screw each bolt in order to expand the clamp.

Expanding the clamp

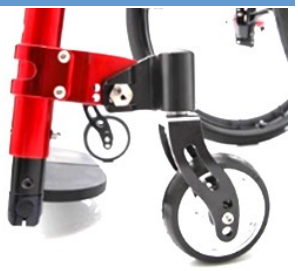


It is advisable to spread a drop of mild lock thread glue on the headless bolt **C**.

Remember that the front height adjustment can affect the seat inclination, so it is necessary to check and adjust the fork angle.

FORK ANGLE 1

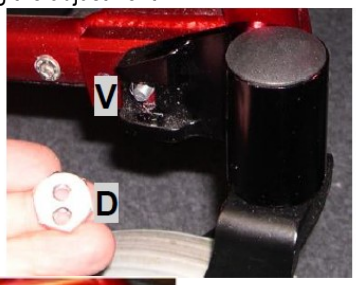
system with hexagon

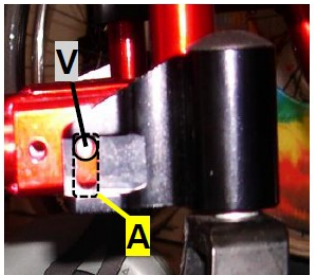


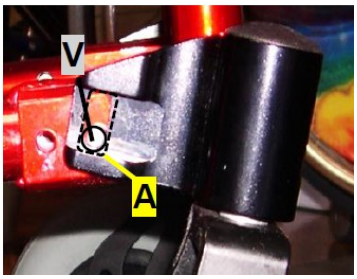
WORK ON A FLAT AND EVEN SURFACE.

The adjustment is the same for both Exelle and Exelle Vario. The pictures show the assembly on the Exelle Vario. Note that, differently from the models Exelle/Exelle Vario, the support is assembled facing backward; however, in some cases in alcuni casi, it is possible to assemble it facing frontward.

Unscrew the bolt **V** that fixes the nut **D**. Remove the nut **D** but leave the bolt on completely. You should not loosen the other bolt, in fact it will hold the fork while performing the adjustment.





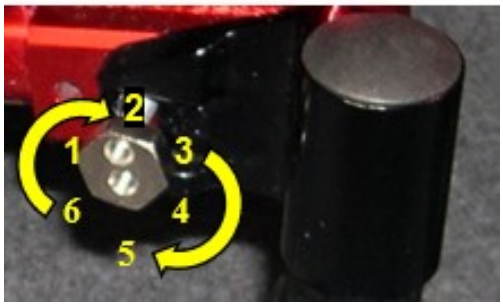


You can now turn the fork support (and the fork itself) clock or anti clock wise within the limits given by the support's slot **A** against the bolt **V**. within such limits you will have to find the correct angle: the fork has to be perpendicular to the ground.

You can reveal the perpendicularity using a spirit level leant against the cylinder of the fork support as shown in the picture, or you can turn the fork. In this last way, the caster should evenly touch the ground all around the clock.

When you find the correct angle, you have to insert the nut **D** with two of its two sides perfectly aligned with those of the slot **A**, but without moving the fork support.

The adjustment nut **D** has two holes. Each hole gives 6 different positions, so, in total there are 12 positions.



Insert the nut on the bolt using one hole and turn it to try the 6 positions. You cannot position the nut if the bolt is touching either side of the slot.

When you find the coinciding position, push the nut into the housing and tighten the bolt. Should no position allow for the perfect alignment, try the other hole of the nut and repeat the same operations.

DO NOT adapt the position of the fork support to the nut, this way you actually change the fork angle.

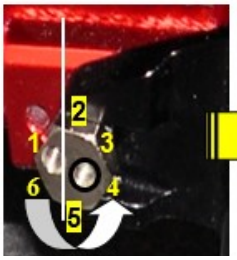
If you cannot reach the perpendicularity within the range given by the slot **A**, remove the bolt **V1** and remove the fork paying attention to which of the two holes **A** or **B** it was fixed to.

Assemble the fork using the other hole and tighten the corresponding bolt.

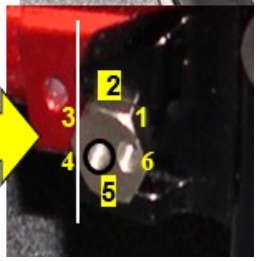
Repeating the same operations above mentioned, adjust the fork angle and position the nut.

Finally, tighten the bolts **A** and **B** hard.

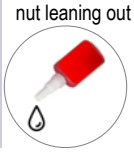
If, in the coinciding position, the nut is leaning out of the support, it is advisable, in order to have a better hold, to reverse its position (of course, using the same hole); this way, the nut will fully be located within the support housing.



nut leaning out



nut fully in housing



It is advisable to spread a drop of mild lock thread glue on the bolts **V** and **V1**.

FORK ANGLE 2

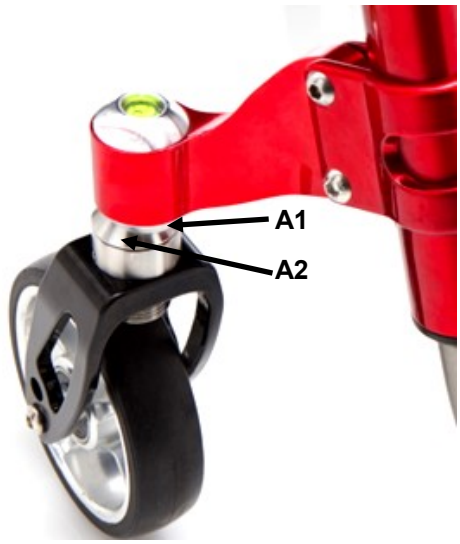
system with spirit level

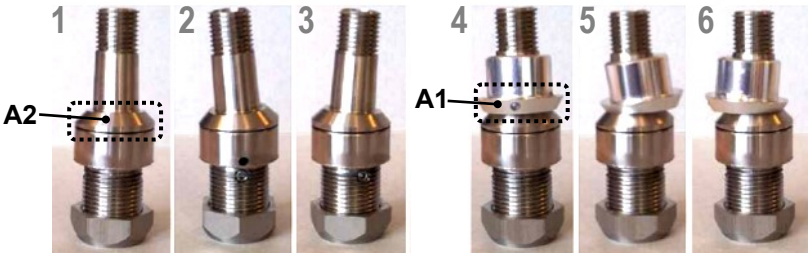
WORK ON A FLAT EVEN SURFACE.

Whenever the seat height is changed or as periodic maintenance, check the fork angle and, if necessary, adjust it in order to have the fork axis perpendicular to the ground.

The fork adjustment system is based on the combination of two rings (**A1, A2**) with inclined plane.

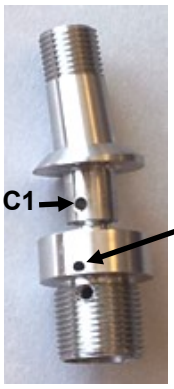
The upper ring **A1** works on the fork support while the ring **A2** works on the ring **A1**.

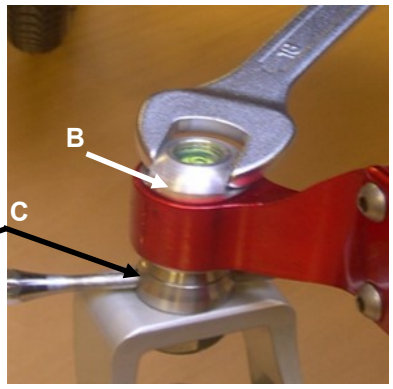


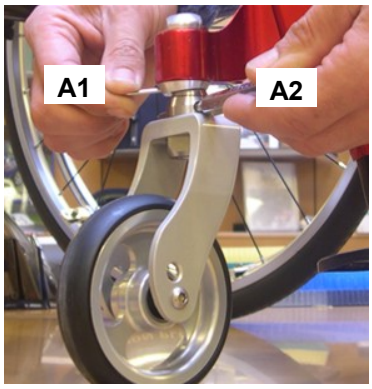


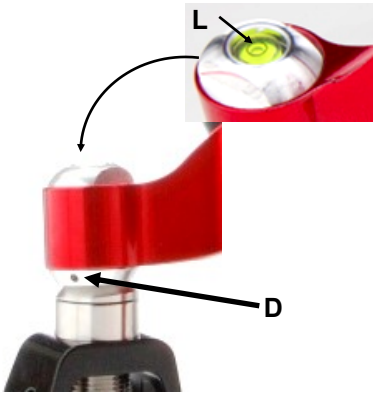
Bearing unit detached from the fork support.

Pictures 1, 2 and 3 show that the upper axle of the bearing unit, rotating on the lower axle (that allows the fork to turn), changes inclination thanks to the inclined plane of the ring **A2**. Pictures 4, 5 and 6 show three different inclinations of the ring **A1** keeping **A2** still. Each combination of the position of these two rings gives a different angle to the fork axis.









To carry out the adjustment, start with loosening the nut **B**.

To do so, you have to align external hole **C** and the internal hole **C1** of the adjustment axle and insert a steel (or an Allen key) through them (in the picture, the two parts are separate to make see the internal hole **C1**). With the pin inserted, you can turn the ring **A2**.

The nut **B** has to be loosened just enough to let the ring **A1** move.

Do not loosen the **B** too much, otherwise the system will be instable and it will be very difficult to adjust.

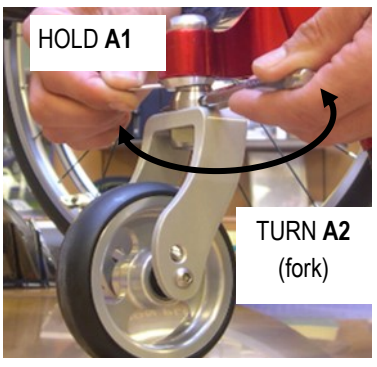
The play should be null or the minimum possible.

To turn the ring'**A1,** insert a pin (or an Allen key) through the hole **D**.

Now, while keeping both pin inserted, turn ring **A2** (consequently the fork) without moving the ring **A1**.

While performing this operation check how the bubble of the spirit level **L** moves.

If, for the whole rotation of the ring **A2**. the bubble never passes through or close to the circle, it means you need to change the position of ring **A1**.



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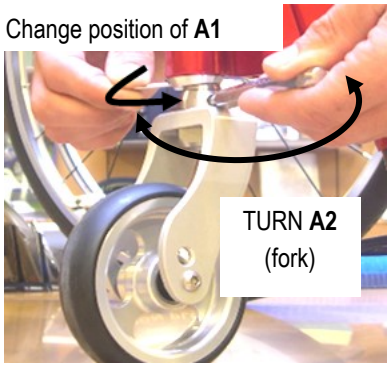
FORK ANGLE 2

system with spirit level

Change position of **A1**



You have to adjust the two rings A1 symmetrically.
The two white and the two black circles show the two possible positions.

The two white arches show the possible different positions of the fork rotation axis (both at 90° to the ground).
The difference can be a few millimetres

Turn the ring **A1** a little in either direction and repeat the same operation above explained.
You have to repeat this procedure until the position of the ring **A1** allows the bubble to be very close to the circle of the spirit level.
At this stage, it is possible to turn both the ring **A1** and the fork together with very small movements until the bubble gets within the circle.
Check the nut **B** is not too loose (to prevent instability of the system) and not too tighten (in this case the ring **A1** will not move).
To tighten or loosen the nut **B** during adjustment, you can usually use your finger (if it is too hard, you can use the spanner).
As mentioned at the beginning, the adjustment is necessary whenever modifying the seat inclination (front and/or rear height).
In such cases, the entity of the adjustment is not much, in other words, the point you start from is very near the goal. Therefore, the rotations of rings **A1** and **A2** will be by just a few degrees (clock or anticlockwise).

When you reach the correct angle, fix the system. Both pins should be inserted.
With one hand, hold the fork and the pin on the hole of the ring **A1** to control its position.
With the other bare hand, screw up the nut **B** as much as possible while checking the spirit level.
Now gradually tighten the nut **B** with the spanner.
If, while tightening, the bubble moves away from the circle, it means that the fork has moved.
To compensate such unwanted movement, turn the fork in the nut loosening direction and check the bubble.
It may seldom happen, though, that even the ring **A1** moves while tightening. In that case, adjust it back.
Make sure the bubble is within the circle and then fully tighten the nut **B**.

To reduce the risk of scratching the paint of the support around the nut, it is advisable to stick a shaped piece of female Velcro on the spanner.

This adjustment system often allows two different combinations **A1/A2** with the same correct result (axis perpendicular to the ground).
The two positions, even though they both give the 90° to the ground, are not exactly the same, in fact the distance between the rotation axle of the fork and the frame is different.
This means that you have to adjust the two forks symmetrically and this surely helps to adjust the "second" fork. Just have a look where the hole of the ring **A1** is with respect to the frame and symmetrically start form that point on the other fork to adjust.
Furthermore, the two combinations (when possible) allow solving the problem of interference between front wheel and footplate or tube. If the first found position results with such interference, just try the second position that may be better.
Differently, it will be necessary to change the size of front wheels or footplate position or the seat inclination (front or rear height).

It is advisable to pread a drop of mild lock thread glue on the nub **B**.

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FORK ANGLE 2

system with spirit level

When adjusting the fork angle avoid:

Working on ring **A1** and **A2** (fork) together form the beginning – this does not give any precise point of reference (as ring **A1** does in one any position that you can change if not correct).

Thinking that the front wheel must be orientated as when driving the wheelchair (the fork is part of the adjustment).

Keeping the nut **B** too loose while finding the correct angle.

Directionality check.

After adjustment, the wheelchair has to be tested to verify if it goes straight.

See also sheet DIRECTIONALITY.

Check both casters are touching the ground, if not, adjust their height.

If the wheelchair turns right or left, it means that you need to correct the adjustment.

If it turns right: the right fork is tilted inward (internal) or the left fork is titled outward (external).

If it turns left: the left fork is tilted inward or the right fork is titled outward.

Check which of the two to adjust.

The adjustment will be really of minimum entity.

The necessary rotation of either **A1** or **A2** (fork) is tiny.

Loosen the nut **B** as little as necessary.

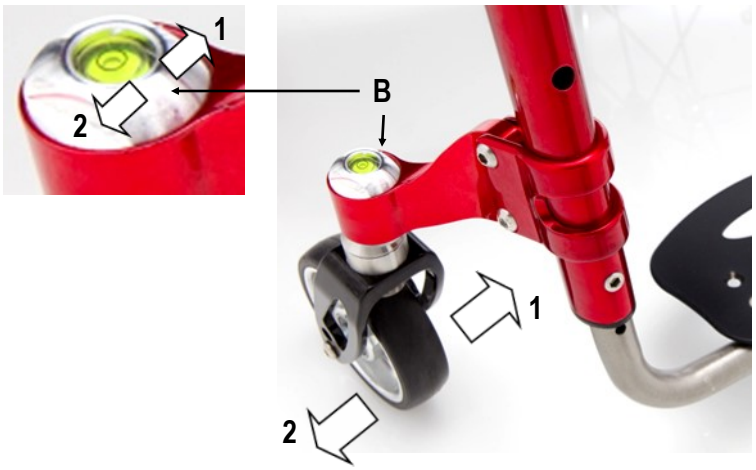
Proceed with the adjustment making the bubble slightly move:
- inwardly with respect to the wheelchair if the fork is external;
- outwardly with respect of the wheelchair if the fork is internal

The bubble does not necessarily be perfectly concentric with the circle of the spirt level.

It is enough that it is within the circle or even adjacent.

The spirit level is, at origin, glued to the axle, therefore, there is a minimum tolerance while centring it.

After adjustment, the wheelchair has to go straight.



FORK ANGLE 3

V-Design fork support

WORK ON A FLAT EVEN SURFACE.

Whenever the seat height is changed or as periodic maintenance, check the fork angle and, if necessary, adjust it in order to have the fork axis perpendicular to the ground.

To loosen the system:

loosen the two bolts **A**, the two headless bolts **B1 B2** and the nut **C**.

To adjust the fork:

Turn the fork axle, clock or anticlockwise, until the perpendicularity, 90° to the ground.

To make this operation easy, it is advisable to slightly tighten one of the two bolts **A** so that to allow for the fork axle rotation and keeping it in position after moving it.

You can measure the perpendicularity with the help of a square (or similar) vertically aligned to the caster; the caster has to be turn 90° with respect to the driving direction.

Alternatively, turn the fork by 360°: during the full turn, the wheel has to touch the surface in all positions.

To fix the system proceed with the following sequence:

- Tighten the two bolts **A** alternating them each quarter of a turn in order to allow for an even clamp torque.
- Tight and hold bolt **D** and tighten the nut **C**
- Finally, tighten the two headless bolts **B1 B2**

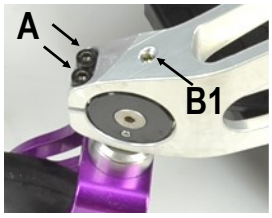
Directionality

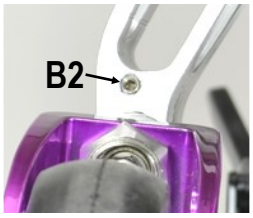
Try the wheelchair out and verify it goes straight. See also DIRECTIONALITY

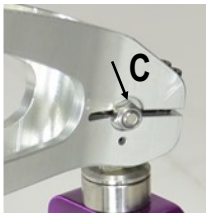
V-Design

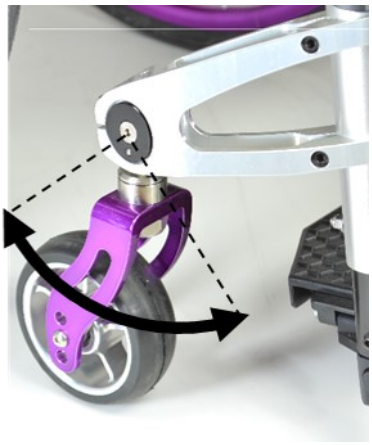
short V-Design

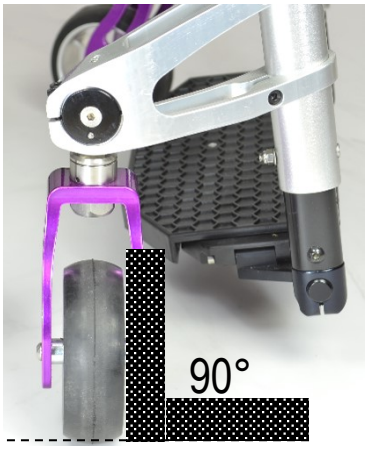
fork axle

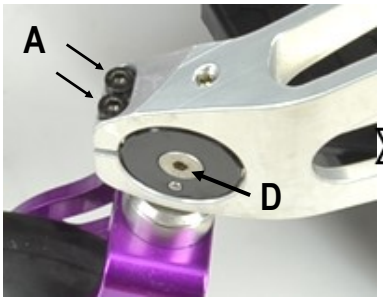


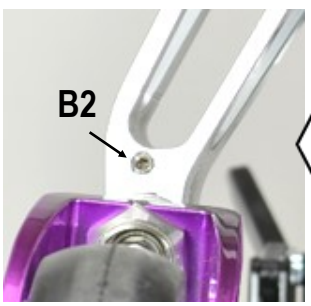


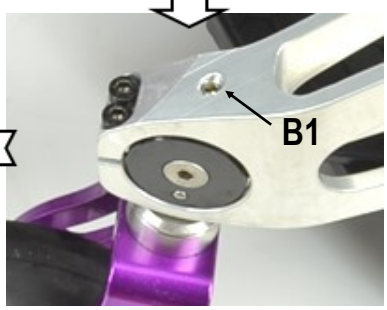












It is advisable to spread a drop of mild lock thread glue on the headless bolts **B1 B2**.

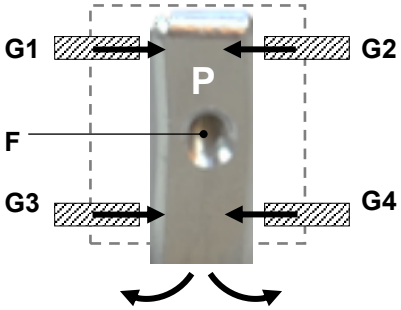
FORK ANGLE 4

Fork support V-Design 2.0

WORK ON A FLAT AND EVEN SURFACE

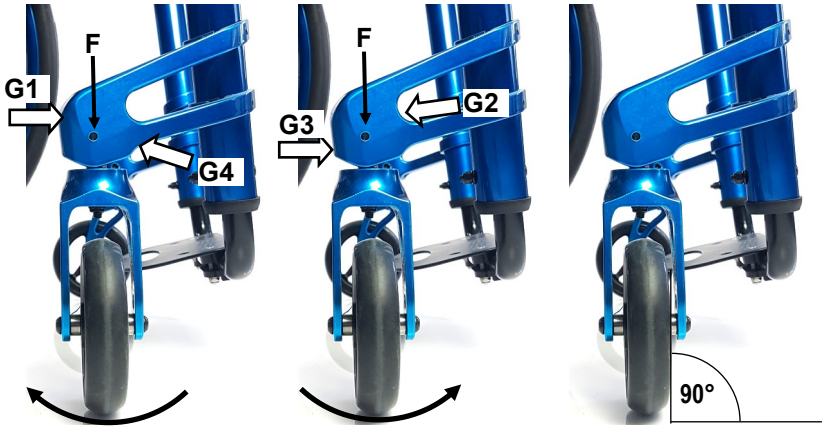
Whenever the seat height is changed or as periodic maintenance, check the fork angle and, if necessary, adjust it in order to have the fork axis perpendicular to the ground.

The adjustment is possible by means of the four grab screws **G1**, **G2** and **G3** that make the axle **P** turn on the fulcrum **F**.



Rotation when screwing **G1** and **G4**

Rotation when screwing **G2** and **G3**



To turn the fork backward

Loosen **G2** and **G3**.

Screw **G1** and **G4**

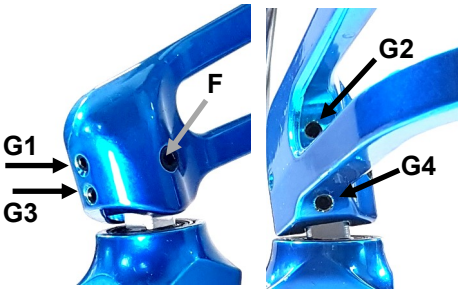
To turn the fork fronward

Loosen **G1** and **G4**.

Screw **G2** and **G3**

Perpendicularity

You can check the perpendicularity with the help of a square (or similar) vertically aligned to the caster turned 90° with respect to the driving direction of the wheelchair



To adjust the fork, once you know the direction (frontward or backward) towards which it is necessary to move the fork's axle, proceed as above-mentioned until reaching the correct angle.

You can also measure the perpendicularity by turning the fork by 360°: during the full turn, the wheel has to touch the surface in all positions.

If a headless bolt results hard to unscrew, DO NOT FORCE IT, but try to loosen the other two first.

If the fork's axle (the axle **P**) results hard to move, slightly loosen the bolt of the fulcrum **F** (remember to screw it after adjustment).

Once you reach the correct angle, screw all three headless bolts all the way down to the axle **P**, but without tightening.

In order to fix the system, tighten first one and then the other less than a quarter of a turn at once, the grab screws **G2** and **G4** (the front ones) checking the perpendicularity; in fact, it may slightly change during this phase.

Should that happen, correct the angle proceeding in the same manner.

When you have tightened both headless bolts **G2** and **G4**, you can tighten the headless bolt **G1** and **G3**.

Check the perpendicularity again and, if necessary, correct it.

It is advisable to pread a drop of mild lock thread glue on all grab screws **G**.

FORK ANGLE 5

EGO CARBON

Follow the same instruction of the chapter "*Fork angle 5".*

DIRECTIONALITY

A very important aspect of any wheelchair is its directionality.

To check if the wheelchair goes straight, sit on it, push it and let it go until it stops.

If something is wrong, the slower the wheelchairs moves forward (momentum close to nothing), the more likely it turns right or left. Therefore, if no or irrelevant turn occurs, the wheelchair is properly adjusted.

Cause	Reason	Solution
SURFACE	The surface where the test is being performed is not even and flat	Test the chair on even and flat surface
REAR WHEELS	The rear wheel are not equally inflated	Inflate both tyres at the same pressure
	The tyres of the two rear wheel are different or differently worn out	Change the tyres
	The rear wheels are not adjusted at the same height	Adjust the rear wheel height
	The camber of right and left wheels are different or differently adjusted	Adjust the camber.
	The wheel, when turning, touches the side guard or the	Fix or replace the side guard. Add spacer on the
	The wheels doe not turn smoothly	Clean or change the bearings
FRONT WHEELS	The casters are not adjusted at the same height	Adjust the front wheels at the same height
	The tyres of the two front wheels are different or differently worn out	Change the wheels
	The fixing bolts of the fork/fork support/clamp are loosened	Check and tighten all fixing bolts
	The caster does not turn smoothly	Clean the bearings.
	Either or both forks are not adjusted so as their axis is perpendicular to the ground.	Adjust the fork axis inclination.
FOOTPLATE	The footplate tubes are adjusted at different height.	Adjust the tubes at the same height

If the wheelchairs does not go straight, in most cases the reason is the fork angle adjustment.

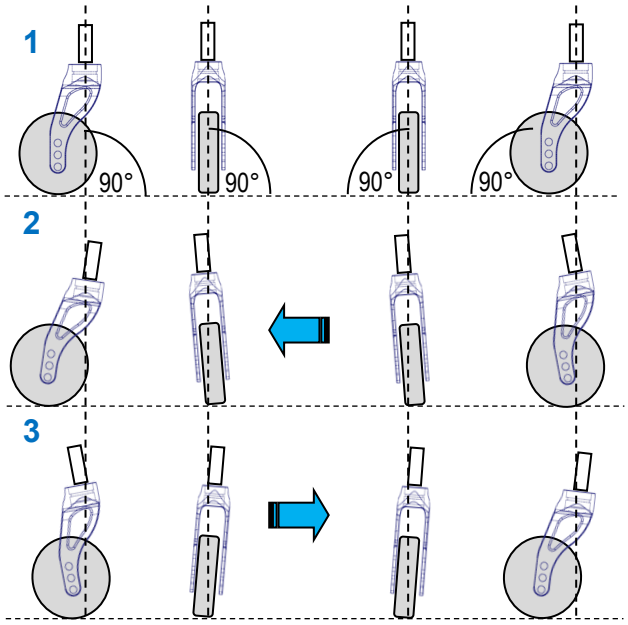
However, before working on the fork angle adjustment, check all the points above mentioned.

First, make the test along a flat even surface to check the directionality.

1 The correct adjustment has both forks perpendicular to the ground, that is, their axis at 90°.

2 If the wheelchair **TURN RIGHT,** the cause is one or more of the following:
The **RIGHT** fork is tilted **inwardly** and/or **backward**
The **LEFT** fork is tilted **outwardly** and/or **frontward**

3 If the wheelchair **TURN LEFTT,** the cause is one or more of the following:
The **LEFT** fork is tilted **inwardly** and/or **backward**
The **RIGHT** fork is tilted **outwardly** and/or **frontward**



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DIRECTIONALITY

ADJUSTING THE DIRECTIONALITY

Check that the two forks are perpendicular to the ground. If they are not, proceed with the adjustment of the fork angle following the instructions on the sheet FORK ANGLE ADJUSTMENT.
If both forks axis are correct but the wheelchair still turns right or left, it means that the latitudinal angle is not perfect.
This may be due to hit, to improper pressure exercised on the fork or its support, or to a tiny imperfection among all parts fixed together due to their manufacturing tolerances.

System with hexagon

This adjustment systems does not allow for latitudinal (camber) adjustment, the only way to correct the angle is to put a sort of spacer between the upper or lower side of the fork support and the plate where it is fixed. The spacer can simply be a piece of plastic strapping (0.5 mm – 1 mm thick).
To incline the fork internally **1** , position the strapping on the upper side of the fork support.
To incline the fork externally **2** , position the strapping on the lower side of the fork support.

Other systems

Make sure the two bolts **A** are well tightened.
In fact, if they are not fully tightened, the clamp will not take a proper hold on the frame and the support position may not be precise.
Then, continue according to the type of system.

<u>With spirit level</u>
See sheet “fork angle 2” – directionality.

<u>With fork support V-Design</u>
If the operation above mentioned is not satisfactory, consult Rehateam s.r.l..

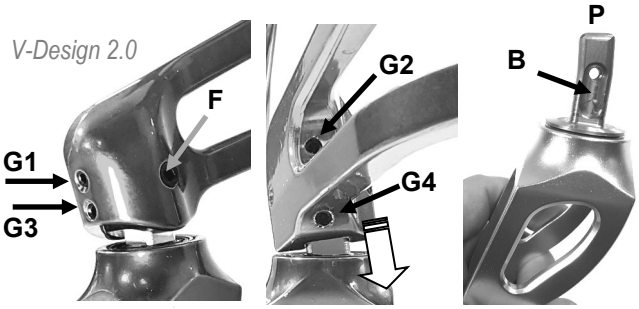
<u>With fork support V-Design 2.0 and Ego Carbon</u>
Loosen all four grab screws **G**, remove the bolt **F** and slide off the fork complete with the axle **P**.
The axle has two side hollows **B** where you have to cast the flat inserts **C0** or the 1° titled inserts **C1** that are recognizable thanks to two dots.
With the flat inserts **C0**, the axle keep its original inclination.
With the tilted inserts **C1**, the axle tilts by 1° right or left according to how to cast them in the hollows—see images.
Note: you can cast the inserts only as indicated in these images.

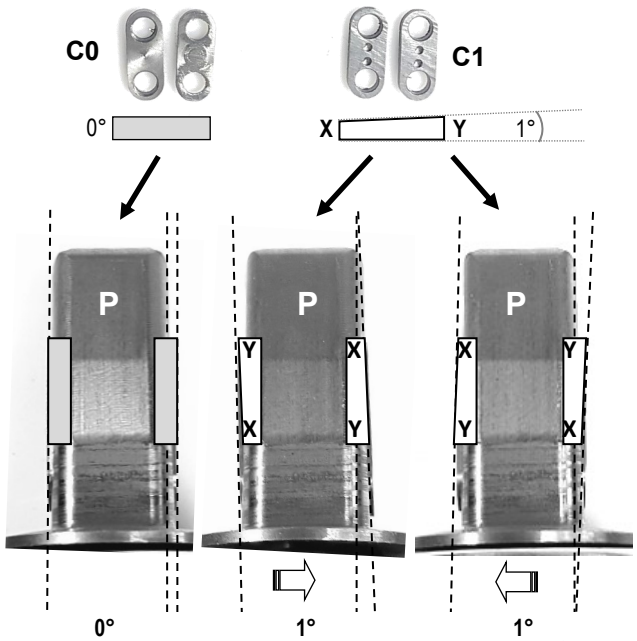
System with hexagon

System with spirit level


V-Design


V-Design 2.0





For the adjustment of the fork angle, see chapters “fork angle”.

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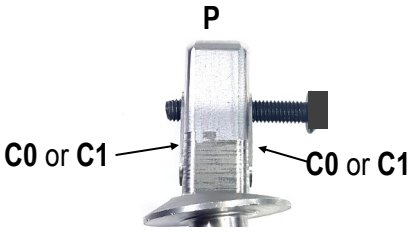
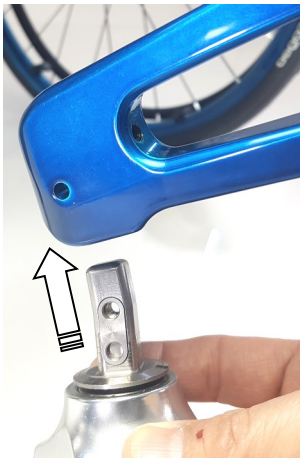
DIRECTIONALITY



Mounting back the fork of the system V-Design 2.0 and Ego Carbon

Once you have casted the inserts **C0** or **C2**, it is advisable to try to screw the bolt **F** to check there is no difficulty. Sometimes, in fact, the holes of the inserts may have working burr that make the bolt hard to go through.



To mount the fork unit. Insert the axle **P** in the fork support paying attention to the orientation of the same axle. In fact, the axle is not straight, but it shows a bend.

Such bend must be facing to the rear of the wheelchair.

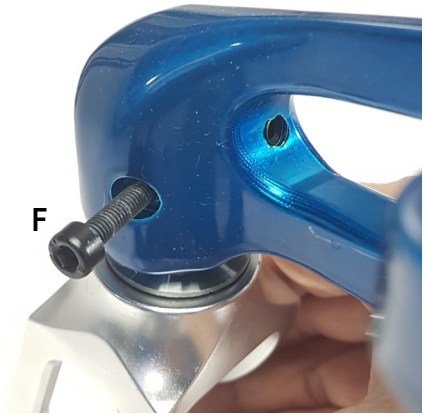
Insert and screw the bolt **F** without tightening it much (it is enough to screw it up to stop).

Adjust the fork angle — see sheet “fork angle 4”.

Note.

This type of adjustment can take place even at original assembly, therefore, you may find the inserts **C0** on one axle and **C1** on the other, for instance.
The wheelchair is not supplied with supplementary inserts, therefore, it will be necessary to order them when needed.

SIDE VIEW



Axles without inserts

Until 2019 the axles had no inserts **C0** or **C1.** There were 0°, 1°rh and 1°lh axles. To adjust the directionality, it is necessary to change the axle.

For the adjustment of the fork angle and the removal of the fork support, see chapters “fork angle” and “fork support position”

REAR HEIGHT

Adjustment every 7.5 mm

You can adjust the rear height by changing position of the rear wheel plate **A** with respect to the adjustment post **B**.

Remove the rear wheel.

Remove the 4 bolts **C** and, where present, the corresponding nuts/washers **D**.

The holes **X** (the front second and the third starting from the bottom) of the post **A** are threaded holes (whereas all the other are passing holes) and they cannot use the nut. Move the rear wheel plate **A** to another position and fix all bolts and nuts.

If, when changing the position of the plate **A**, one of the holes **X** is involved, the bolts **C** should accordingly be longer or shorter and having or not the nut/ washer **D**.

If fixing the plate involves the use of the either one of the holes **FX**, spread some mild thread lock glue on the bolt

Repeat the same operation on the other side.

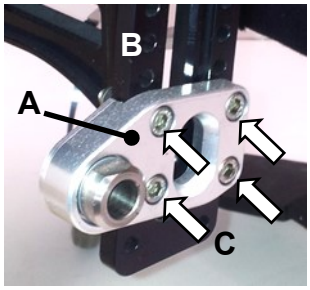
The hole for the rear wheel receiver **E** is not centred with respect to the fixing of the plate **A**, therefore, it is possible to assemble the left plate on the right side (consequently turned 180°) and vice-versa to get different heights.
This way, you can have other heights that are intermediate, that is, even if the intervals of the holes of the post **B** is 15 mm, the real adjustment interval is 7.5 mm.

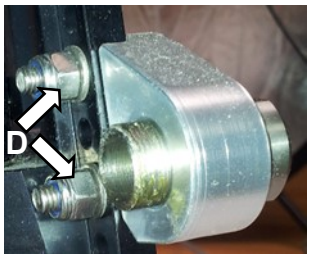
If you change the rear height, you will have to drill new holes on the mud-guards in order to adapt them to the new position.

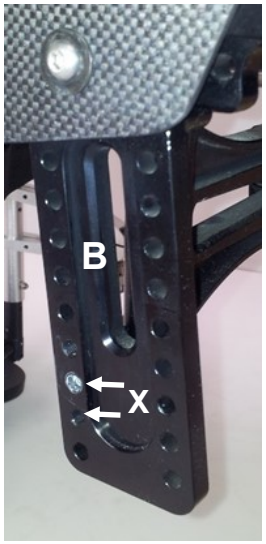
If you lower the rear height, it is necessary to remove the mudguard (not necessary if straight guard) (remove bolts **S1** and **S2**) before putting the wheel on because this last will come in touch with the mudguard.

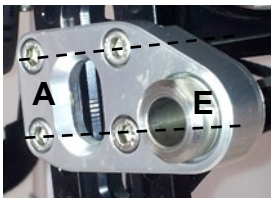
The adjustment in case the wheelchair is provided with the extended rear wheel plate **AA** is the same.
The hole **H2** corresponds to the hole of the standard plate, whereas the hole **H1** is 3 cm behind.

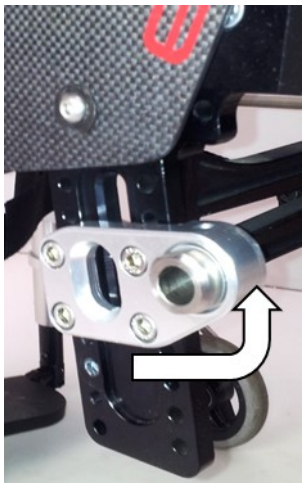
After adjustment, adjust the side guard and the brake, too.

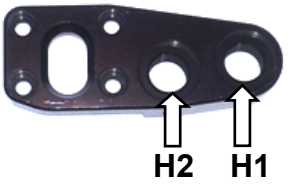












AA

SETTING (point of balance)

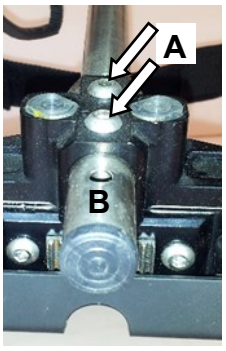
Three possible settings: PRUDENTIAL, 60mm; STANDARD, 80 mm; ACTIVE, 100 mm.

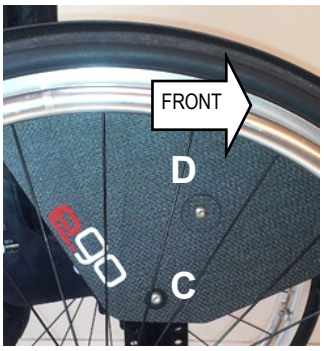
Fold the seat a little in order to make the operations easier.

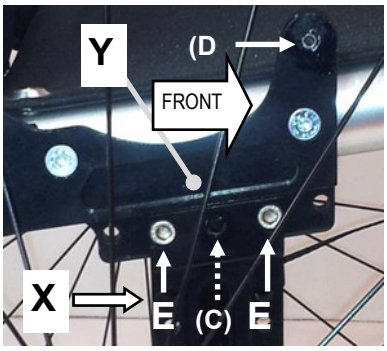
Remove the bolts **A** on the central unit of the rear axle (under the seat) that fix the tube **B** connecting front and rear axles.

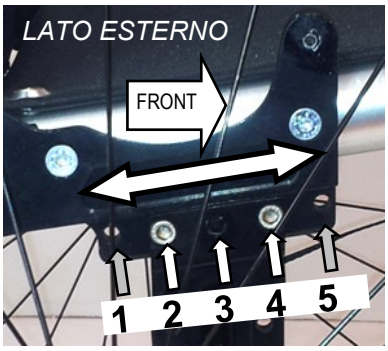
Remove the rear wheels.

Remove the side guard screwing off the bolt **C** first and then the bolt **D**.

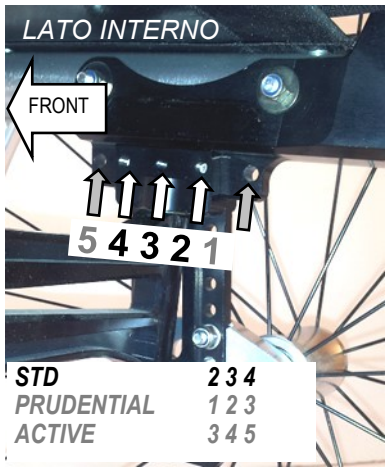


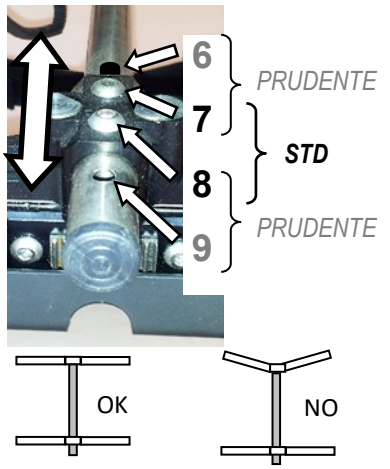






If you move the setting forward, move the brake forward, too, to avoid interference when you put the rear wheel on (you can do that later in case of sport brakes).
Fix the two posts **X** with the two bolts **E** leaving the hole in between free (**C**).
Align the holes of the tube **B** with those of the central unit according to the new setting.
STANDARD: holes 7 and 8; PRUDENTE: holes 8 and 9;
ATTIVO: holes 6 and 7 (if the hole 6 is 2,5 mm wide, enlarge it to 6 mm).
Fix the tube **B** with the bolts **A** and check, once you open the seat, that the front and rear axles are parallel. If they are not, you have fixed the tube **B** wrongly.
Put the rear wheel on and temporarily fix the side guard on the central hole **(C)** between the two bolts **E** and position it parallel to the tyre.
Mark the point on the side guard where to drill a 5 mm new hole (it will be 2 or 4 cm from the existing one). Remove the bolt **C**, remove the side guard and drill the hole.
Position the side guard and insert bolts and washers **C** and **D** through their corresponding holes.
Tighten the bolt **D** first and then the bolt **C**.
Adjust the brake.
Remember that the setting adjustment can affect the seat inclination, so it is necessary to check and adjust the fork angle.





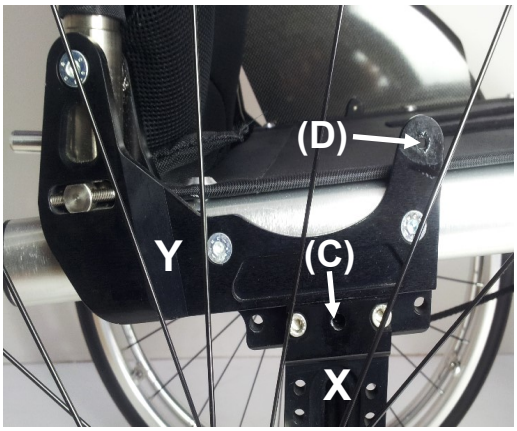
AA The extended rear wheel plate **PA**, with its hole **H1**, allows for 3 cm more prudential setting, whereas the hole **H2** correspond to the regular plate's.

The rear wheel plate **P** MUST NEVER BE assembled with the receiver towards the front of the wheelchair. In fact, the point of balance of the wheelchair will be too instable. Furthermore, it will cause an interference with the seat folding system and you may not able to adjust the brake.

It is advisable to pread a drop of mild lock thread glue on bolts **C D E**.

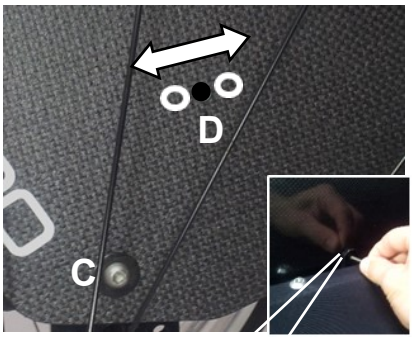
SIDE GUARD

After any adjustment of the rear wheel, you will have to adjust the position of the side guard.



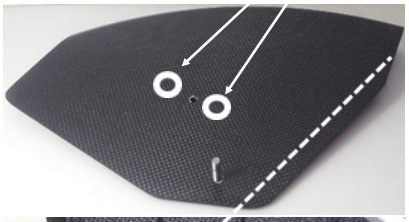
You should adjust the side guard at approximately 5 mm. The side guard is fixed to the adjustment post **X** with the bolt **C** and to the fin of the lateral **Y** with the bolt **D**.

Each side guard is shaped to measure according to the configuration of the wheelchair when originally assembled.
The shape of the side guard always allows for a reasonable good margin of adaptation.



A

When you change setting, (horizontal adjustment) you remove the side guard.
The height of the side guard remains the same.
The hole on the side guard for the bolt **C** remains the same, too. Because it is fixed to the post **X** that was moved to the new setting.
You will need to drill a new hole for the bolt **D** because the lateral **L** does not move.
The interval from one setting to the next is 2 cm.



1. Assemble the side guard with the bolt and washer **C** and position it approximately 5 mm from the tube and parallel to it.
2. Mark with a pointed tool or with a marker through the hole for the bolt **D** the point where you will have to drill a new hole. In the image of reference, the setting is standard and the hole for the bolt **is** between the two white circles that show where the new hole for the active and prudential setting should be.
3. Remove the bolt **C** and remove the side guard.
4. Drill a 5 mm hole where just marked.
5. Assembled the side guard starting with **C** first and then **D**. If the hole for the bolt **D** is not well centred with that on the fin of the lateral, you may find the bolt hard to screw. DO NOT FORCE it, but consider correcting the hole on the side guard.
6. Tighten **D** first and then **C**.
7. When moving the setting backward by one or two positions (2 or 4 cm), it is necessary, for a proper assembly, to cut off part of the rear diagonal side of the side guard. That will avoid forcing the side guard externally due to the thicker part of the lateral where the backrest support is.
8. On the other hand, when moving the setting frontward, the side guard will move away from the backrest support, therefore no cut is necessary.

It is advisable to spread a drop of mild lock thread glue on the bolts **C D**.

Follows next page

SIDE GUARD

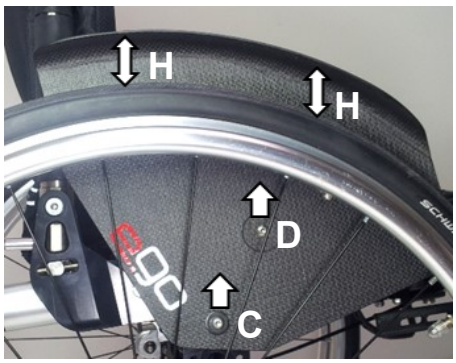
B

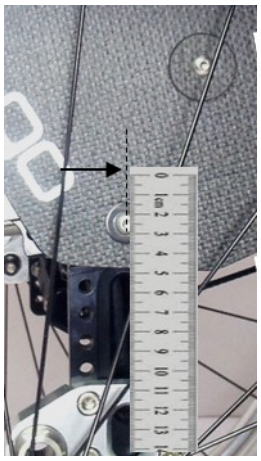
When you increase the rear height, you will have to move the side guard down to approximately 5 mm from the tyre and parallel to it.
If the side guard is straight, you can decide whether to modify it or not.
After adjustment, put the rear wheel on and measure the distance **H** from the mudguard to the tyre. From that measure, take off 5-6 mm. The result will be the measure you will refer to when marking the point where to drill the new hole for the bolt **C**.

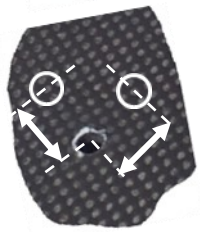
Example:
if **H** = 31 mm; 31 – 6 = 25; the new hole will be 25 mm above the existing one.

To mark the point, you can use a ruler. Position it parallel to the adjustment post and aligned with the axis of the bolt **C**.
The centre distance between the two holes must not be lower than 10 mm.
If the necessary adjustment is less than 10 mm, you should drill the new hole at top right or top left until the two holes will be 10 mm from one another.

1. Remove the bolts **C** and **D** and remove the side guard.
2. Drill a 6 mm hole where just marked.
3. Assemble the side guard with the bolt **C** and position it parallel at approximately 5 mm from the tyre.
4. Follow points 2 to 6 of the adjustment **A** (when you change setting).

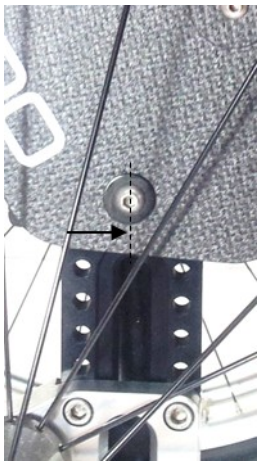


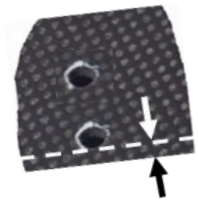




C

When you decrease the rear height, you will have to move the side guard up.
The adjustment is limited to the lower edge of the side guard.
Usually, the margin is approximately 15-20 mm. If the side guard is straight, you can decide whether to modify it or not.
To mark the point where to drill the new hole, use a ruler likewise described above and taking into consideration the entity of the adjustment.
Therefore, if the adjustment is 15 mm, the new hole will be 15 mm below the existing one.
If the adjustment is less, remember that the centre distance between the two holes has to be at least 10 mm.
Between the new hole and the edge of the side guard there must be at least 3 mm.
Continue the adaptation following the points 2 to 6 of the "adjustment **A** (when you change setting).

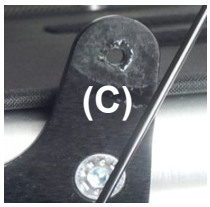


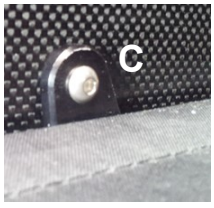


D

When you change both the rear height and the setting, follow the instructions related to the rear height. Finally, consider the need or not of cutting off part of the rear diagonal side of the side guard.

Note: If you happen to damage the thread of the hole for the bolt **C**, you can repass the hole with a 5 mm drill pin. Then use longer bolt, insert it from the inner side and fix the side guard wit ha washer and nut on the outer side.

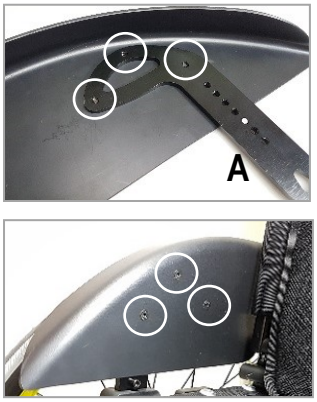


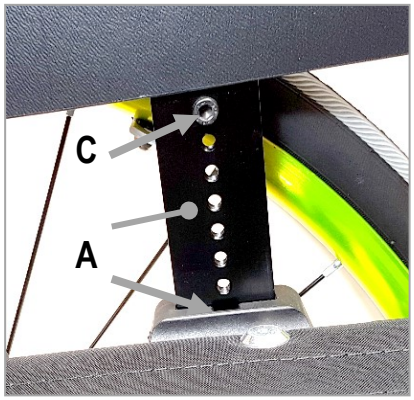


SIDE GUARD

Removable with blade system

After every adjustment of the rear wheel, you have to adjust the position of the side guard. You have to adjust the side guard at approximately 5 mm from the tyre. The side guard is fixed to three points on the blade **A** that slides in the support **B** fixed to the frame.

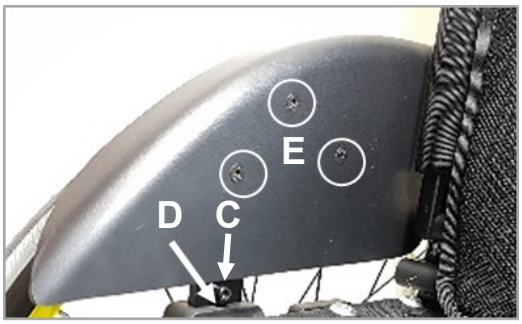


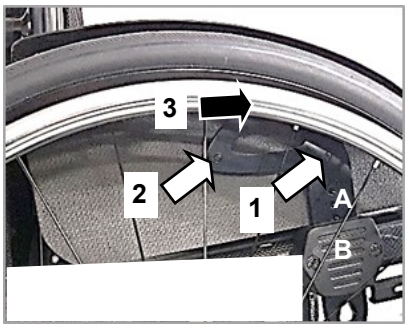


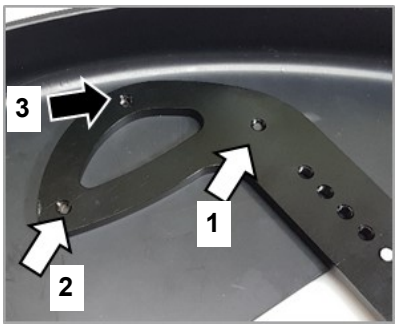
Height adjustment: the blade **A** shows, in its vertical side, a series of holes to fix the bolt **C** that inserts in the hollow **D** of the support **B**. Therefore, to change the height, just remove the bolt **C** and screw it in another hole.
WARNING: do not tighten the bolt **C** excessively: it may damage the threaded hole until making it unusable.

Side guard modification: If one, the other or the combination of both adjustment above mentioned are not satisfactory, you can modify the side guard.
Every side guard is shaped to measure according to the configuration of the wheelchair when originally assembled.
The shape of the side guard always allow for a reasonable good range of adaptation.
Note: if the side guard is straight, you can decide to modify it or not.

A WHEN YOU DECREASE THE REAR HEIGHT, you have to move the side guard up.







1. Remove the three bolts **H** to take the side guard off the blade.
2. Position the side guard at approximately 5 mm from the tyre, always leant on the blade **A**. The bolt **C** on the blade must be inserted in the hollow **D** of the support.
3. While holding this position, mark the point where it is necessary to drill the first new hole (1 or 2; 3 is usually not accessible with the rear wheel on).
4. To do so, use a point and let it through the accessible hole. If the rear height adjustment is remarkable, you may need a new sideguard.
5. Drill a 5 mm on the sideguard where you have marked it.
6. Countersink the hole.
7. Insert and screw the bolt **H**.
8. To drill the second hole on the side guard, follow instruction from 3 to 7.
9. To drill the third hole, remove the side guard, mark the point where to drill and follow instruction from 5 to 7.

It is advisable to spread a drop of mild lock thread glue on the bolts **E** and **C**.

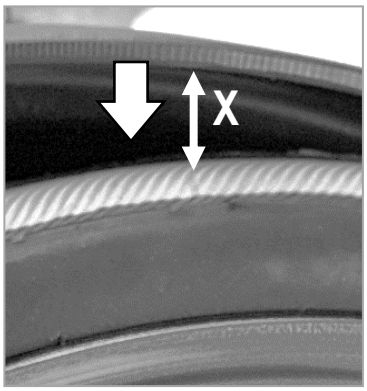
Follows next page

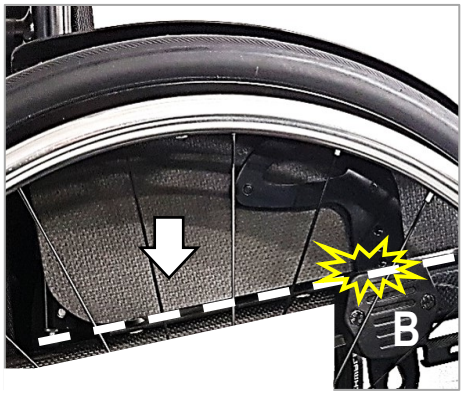
SIDE GUARD

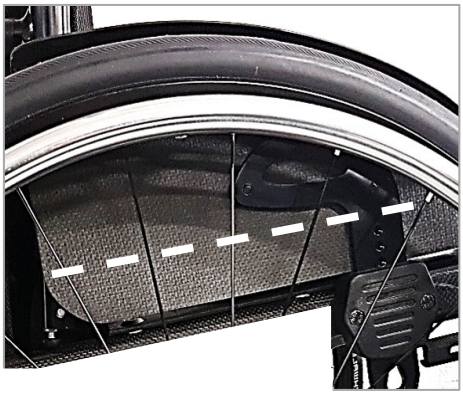
Removable with blade system

Advice for drilling. While drilling a hole, such hole may result slightly moved with respect to the precise point you marked. For the first hole, that move does not cause any trouble. On the other hand, for the second and third hole, it may cause a non-alignment between hole on the side guard and hole on the blade. A good method to be more precise, once you reach point 5, is to use a 4 mm drill pin (in order to avoid damaging the thread of the hole on the blade) and drill the side guard. Then, use and let a M5 tap through the threaded hole of the blade and out of the side guard.

B **WHEN YOU INCREASE THE REAR HEIGHT**, you have to move the side guard down.







If the lower side of the side guard is in contact with the support, it is necessary to cut it.

1. Measure the distance **X** from side guard and tyre and subtract 5 mm (es: 18-5 = 13 mm to cut).
2. Remove the three bolts **H** to take the side guard off the blade.
3. Draw the cut line according to the result you got.
4. Saw the side guard along the drawn line and round off the edges with a scissors blade or thin sand paper.
5. Continue with instruction **A**.

C **WHEN YOU CHANGE THE SETTING**, you have to move the side guard frontward or backward according to the new position of the rear wheel, but the height of the side guard remains the same.

Proceed with instruction **A**.

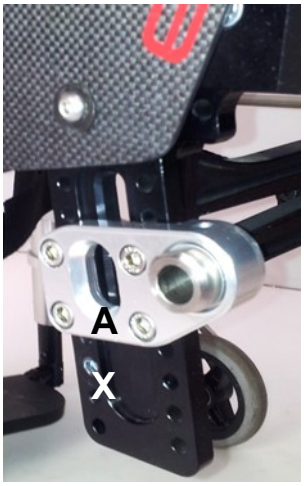
D **WHEN YOU CHANGE BOTH THE REAR HEIGHT AND THE SETTING**, you have to move the side guard up or down **and** forward or backward.

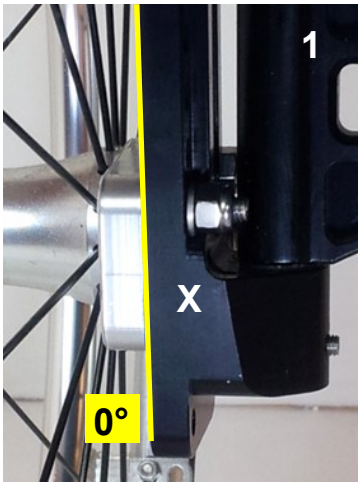
Continue with instruction **A** and, if necessary, instruction **B**, too.

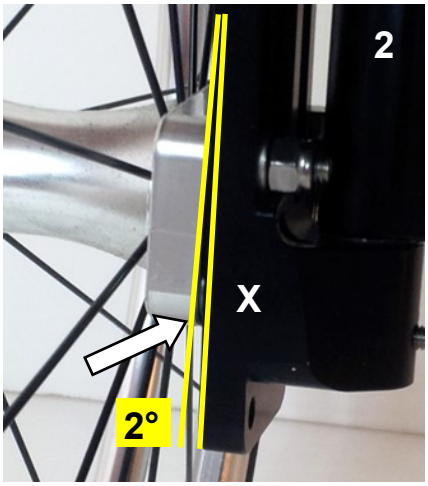
CAMBER AND CONVERGENCY

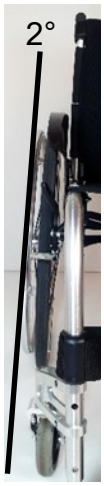
EGO and EGO CARBON

The camber on the model Ego and Ego Carbon is given by the inclination of the rear wheel plate **A** with respect to the post **X.**









The inclination of the plate **A** depends on the presence or not of 0.5 mm washers properly positioned under the same plate.

Picture 1 shows that the plate **A** is perfectly aligned with the post **X**, thus, there is no camber (0°).

No washer is present.

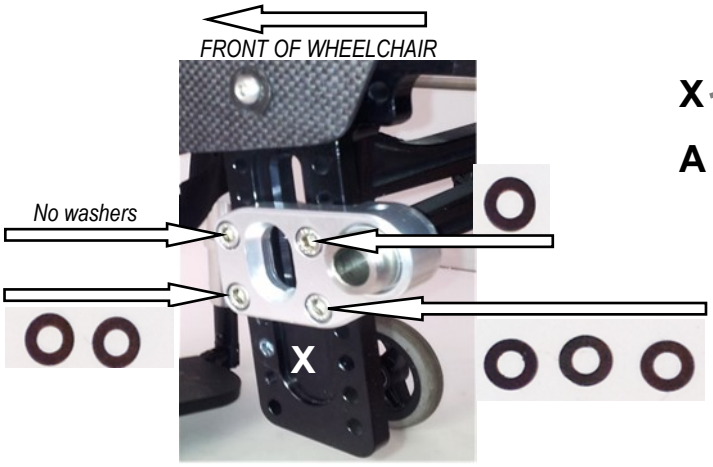
On the other hand, picture 2 shows that the plate **A** is tilted with respect to the post **X** and the arrow indicates the washers, thus, there is camber.

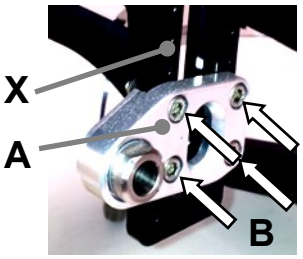
To have a 2° camber, adjusting the convergence, too, you need, for each side of the wheelchair, 6 pieces of 0.5 mm washers between the plate **A** and the post **X**, positioned as shown here below.

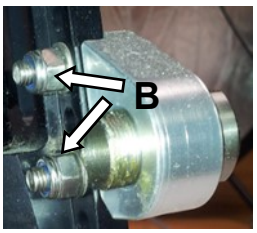
Should you need to eliminate the camber, you will simply need to remove the plate **A** (bolts, washers and nuts **B**) and then all washers between the same plate **A** and the post **X**.

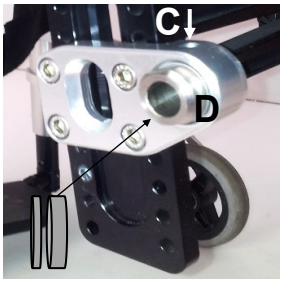
On the other hand, remove the plate **A** and add all washers under it as shown.

The maximum camber allowed is 2°; therefore, it is not advisable to add more washers than what mentioned.









If you change the camber from 0 to 2°, the rear wheel may get too close to the side guard or even interfere with it: in such case. It is necessary to add a spacer on the rear wheel receiver.

To do so, loosen the headless bolt **C** and then screw off the receiver **D**. then, insert the spacer/s, screw and tight the receiver and, finally, screw the headless bolt **C**.

If the quick release axle does not get through, or hardly does it, the receiver, follow the instruction of the sheet “quick release axle”.

Advice: before removing the receiver, it is useful, as a try, put the spacer on the axle of the wheel and put it on. This way, you will immediately see what spacer you need.

At each adjustment, spread some strong lock thread glue on the receiver **D** and mild lock thread glue on the headless bolt **C**.

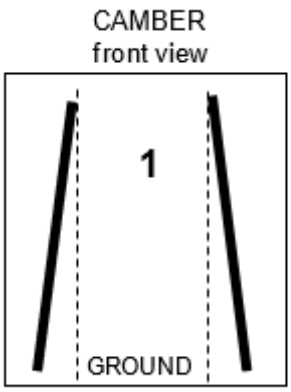
With the extended rear wheel plate, the adjustment is the same.

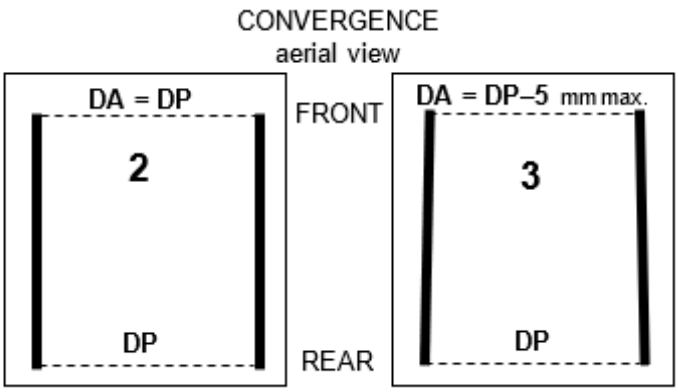
CAMBER AND CONVERGENCY

Ego Custom

WORK ON A FLAT AND EVEN SURFACE

With cambered wheels, it is necessary to adjust the convergence in order to make the wheelchair very fluent.

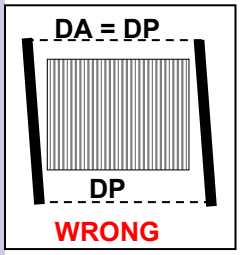




The wheel receiver gives the rear wheel camber (cambered receiver).
The receiver is fixed to the rear wheel plate and, to adjust the convergence, it is necessary to turn the same receiver.
The two receivers are independent; therefore, their adjustment is independent, too.
The drawing **1** shows same inclination (camber) of both rear wheels.
With cambered wheels, it is necessary to check/adjust the convergence, the distance between the two wheels in front and at rear.
The drawing **2** shows the aerial view of the wheels and the front distance **DA** is equal to the rear distance **DP**, while the drawing **3**, **DA** is narrower than **DP** by maximum 5 mm.
We can say that a good convergence has the front distance **DA** equal to or slightly narrower than the rear distance **DP.**
DA must not be wider than **DP**. In such case, the fluency of wheelchair will not be good.

CHECKING THE CONVERGENCY

The hole of the cambered receiver, since it is inclined, is not centred.
Therefore, check the wheel receiver its narrow edge looking upward and its wider edge down. If opposite, the convergence is opposite, too (the wheels are opening apart at top!).
At 30 cm from the floor, take the measure centre-to-centre between the two tyres in front and at rear.
If the two measures are equal or the front one is slightly narrower (max. 5 mm), the convergence could be good as in drawings 2 or 3.
In fact, even if these measures are respected, there may be a wrong adjustment, that is, the wheels could be parallel between themselves but not with the frame.

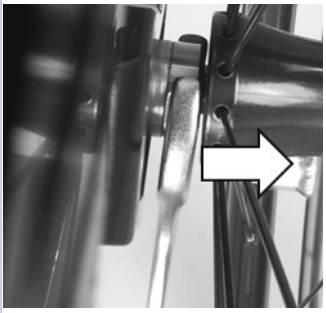


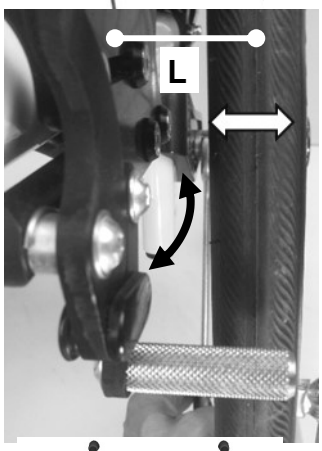
Therefore, it is necessary to take the measurement **L**, on both sides of the wheelchair, from a fixed point of the frame (or of a support fixed to it) to the centre of the tyre.
If the measurements **L** are different, it is necessary to adjust this aspect, too.

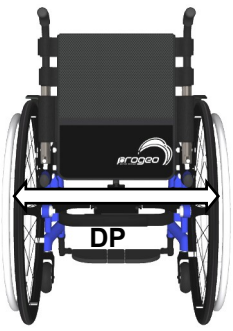
Follows next page

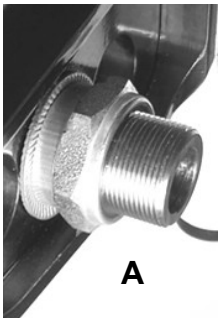
CAMBER

Dynamic rear frame (first version) and Dinamic 2.0









Slightly move away the rear wheel to get access to the receiver **B** and get hold of it with the spanner.
Check the receiver **B** is correctly orientated as above mentioned, otherwise, adjust it now.
Loosen the nut **A** (that fixes the receiver **B**) just enough to be able to turn the receiver with the spanner, but without creating play.

To understand to what direction and to what extent the wheel moves sideward, try to observe its movement while turning the receiver clock and anticlockwise. You can measure it with the difference of the distance **L** (always with the wheel fully inserted into the receiver) before and after turning the receiver.
If the distances **L** at right and at left are different, move one wheel closer or move the other away in order to make them the same.
Now, measure the front distance **DA** and the rear distance **DP.**

If the front distance **DA** is wider than the rear distance **DP**, you have to turn the receiver to draw the wheel near the front frame.

If the front distance **DA** is narrower than the rear distance **DP**, you have to turn the receiver to move the wheel away from the front frame.

Every time you turn the receiver, it is advisable to insert the wheel and measure the change of the distance **L** and the distances **DA DP**.

Example 1: **DA** 8 mm wider than **DP** (the wheelchair will not be very fluent), we have to decrease the **DA** by 4 mm, in fact, by doing so, we will also increase the **DP** by 4 mm; one deduces that the adjustment for each wheel is 2 mm.
At this stage, **DA** and **DP** will be the same.

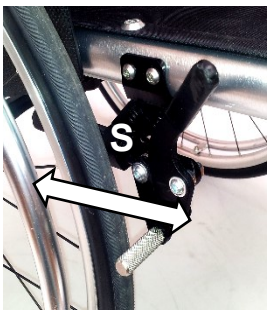
Example 2: **DA** 6 mm narrower than **DP** and distance **L** right 2 mm wider than **L** left.
We have to increase **DA** by 3 mm but we also have to equal the distances **L**.
We thus increase the distance **L** left by 2 mm.
By doing so, we have also increased **DA** by 4 mm, therefore, the difference **DA - DP** is now 6 – 4 = 2 mm. It can already be good, or we can make it better if we adjust each wheel by 0.5 mm: **DA** increases by 1 mm and **DP** decreases by 1 mm, therefore a total of 2 mm; finally, **DA = DP** mm (6 - 4 – 2 = 0).

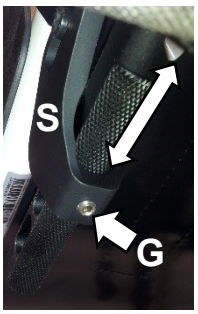
After adjustment, tighten the nut **D** hard while holding the receiver **B**. It is not necessary to remove the wheel, but move it away just enough to make the receiver accessible.

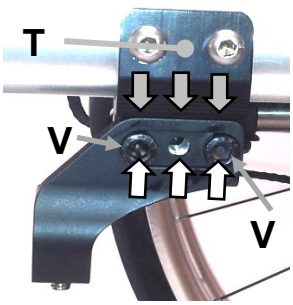
BRAKE

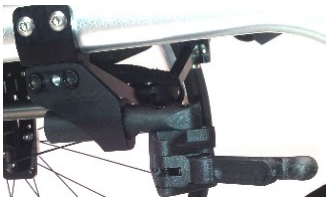
WHEN ADJUSTING THE BRAKES, THE TURES MUST BE INFLATED TO THE CORRECT PRESSURE (except solid tyre)

The position of the brake depends on the position of the rear wheel.









Freno sport

To adjust the brake.

Loosen the headless bolt **G** that you can see on the lower side of the support **S**.
Position the brake-knurled rod **P** at a distance **D** of a few millimetres and parallel to the ground.
Temporarily tighten the bolt **A** and try the brake out to check if the adjustment is good.
If necessary, repeat the same operation until reaching the good adjustment.

A good adjustment has the brake not too hard to engage but braking, so you will have to find the suitable compromise.
Once reached the correct position, tighten the bolt **A**.
Carry out the same operation on the other side.

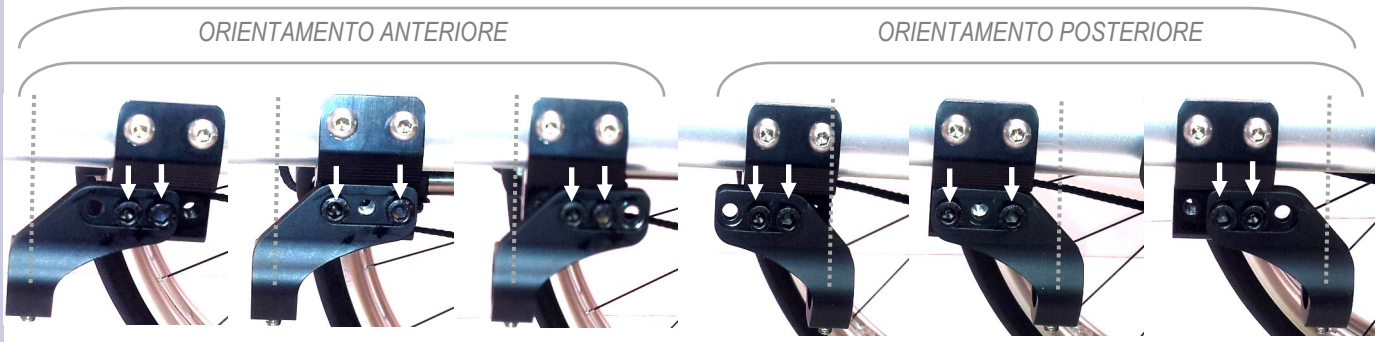
The adjustment for the sport brake is the same except for the distance **D**, in fact, the brake, in its resting position is far away from the tyre. Just make a few tries.

There are two different supports **S**: one for standard lever brakes and another for the sport brakes. In both cases, there is right and left side.
Usually, this simple procedure allows for the correct adjustment.

However, the range of adjustment of the brake may not be enough. According to the entity of the rear wheel adjustment, you can move or change orientation of the support **S** with respect to the support **T** by means of their respective holes **1 2 3.**

Remove the two bolts **V.** Position the support **S** more forward or backward or change its orientation (in this case it is advisable to change right support **S** with left side and vice versa) with respect to the support **T**. This way, the range of brake adjustment should allow, following the instruction above mentioned, for the correct adjustment of the braking rod **P**.

*Posizioni possibili del supporto **S** rispetto al supporto **T***



Once you reach the correct position of the support **S** that allows for the brake adjustment, tighten the bolts **V** (put some mild thread lock glue on these bolts).
The support **S** must always be fixed with two bolts **V**.

It is advisable to spread a drop of mild lock thread glue on the bolts **V** and the grab screws **G**.

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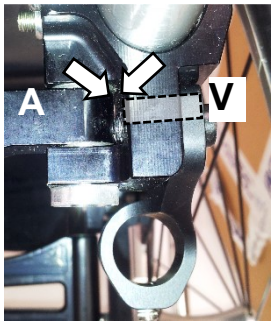
BRAKE

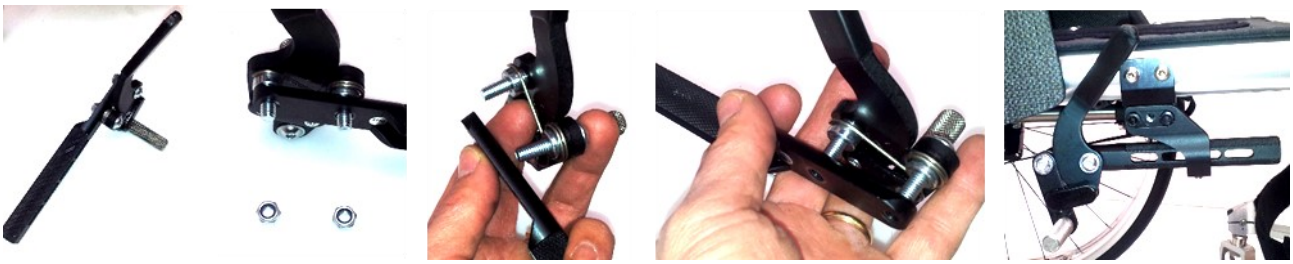


WARNING: if you fix the bolt **V** through the hole in the middle of the support **T**, it may touch the front semi axis **A** of the seat folding system. Should that happen, the bolt **V** may not hold the support **S** tight, it may damage the semi axis **A** and, the folding of the seat may result harder.

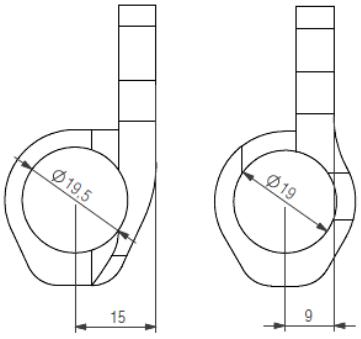
To avoid such inconvenience, you can file down the point of the bolt **V**.

In less probable cases, it may be necessary to reverse the brake orientation, “reverse” assembly.

For **standard brakes**, remove the two nuts, the two bolts and then the brake from its adjustment rod, but holding the bolts in the brake taking care not to drop or move the spring. If you drop or move the spring, you can observe its correct assembly on the other brake. Turn the adjustment rod by 180° and screw the bolts making sure not to get the spring stuck between the spacer and the adjustment rod. Finally, tighten the nuts and proceed with the adjustment.



For **sport brake**, remove the two bolts, turn the adjustment rod by 180° and fix the bolts.



SPORT *STANDARD*

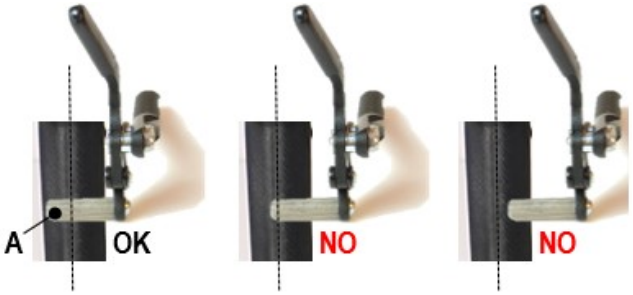
Note: the support for the standard brake and the sport brake is not the same.

In fact, both the diameter on the hole and the offset is different.

Therefore, if you have to change the brake from STD to SPORT (or the other way round), you have to change the supports, too.

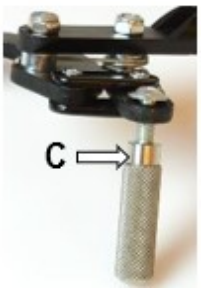
BRAKE SPACING

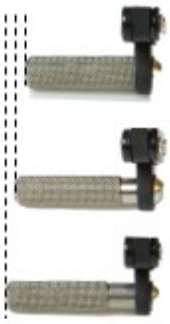
In several cases, the distance between the tyre and the frame can be such as to make need moving the knurled rod **P** more external.
When originally assembling the wheelchair, such possible modification is already taken into account.
In case of a post-sale modification that results in the rear wheels being more external (from 0° to 2° or 4° camber; seat width enlargement; a different wheel), the brake may not work efficiently anymore, therefore, you will have to move the knurled rod. The brake is efficient if the knurled rod **P** is at least 5 mm beyond the tyre's mid-line.



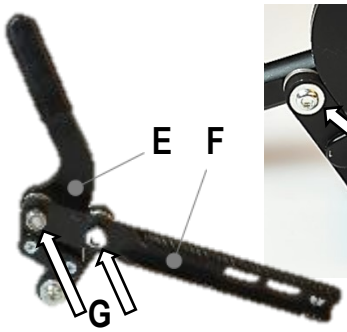
In all cases, check the brake efficiency.

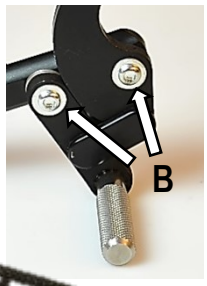
Remove the bolt **B**. In order to remove it, put the knurled rod in a vice and heat it with a hot air blower because the bolt is locked with strong lock thread glue. DO NOT FORCE WHEN UNSCREWING IT, you may damage the bolt's head irremediably.
Once you have removed the bolt, the knurled rod comes off, too. Replace the bolt **B** according to the spacer **C** (7 or 11 mm) you will add.
Put some strong lock thread glue on the bolt **B** and assemble the spacer **C** and the knurled rod **A**.
Put the knurled rod in a vice and tighten the bolt **B** hard.





Spread some strong thread lock glue on the bolt **B**.

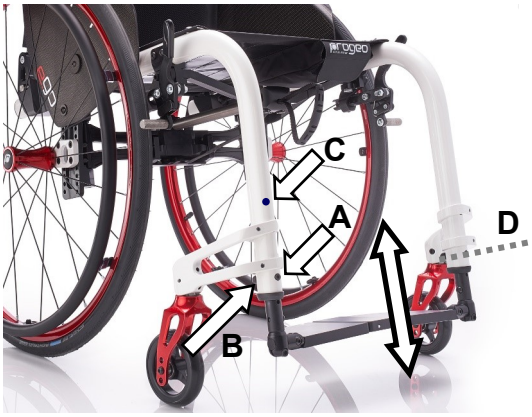




It is also possible to move the brake structure **E** from the adjustment rod **F**.
Remove the two nuts **G** and then the two bolts **B**.
Remove the spacers **H** around which the spring is assembles.
Observe how the spring is assembled because you will have to assemble it back later in the same way (you can always have a look at the other brake that is symmetric).
Insert the spacers **H** (H_1 = original; H_2 = 7 mm longer).
Position the spring and assemble the structure to the adjustment rod.
Start screwing the two bolts **B** all the way down and then the two nuts **G**.
Should the brake movement be hard, slightly loosen the bolts **B**.

FOOTPLATE DISTANCE

EGO and EGO CUSTOM



HEIGHT ADJUSTMENT EVERY 1.5cm

Remove the bolts **A** and their corresponding nuts and washers **B**.
Slide the footplate tube up or down until the necessary height.
Insert the bolts through the nearest holes and tighten.
Where present, it is possible to use the second hole **C**, too.

If necessary, you can adjust the height of the two independent footplates differently.
With one piece footplate, the two tube have, of course, to be adjusted at the same height.
The footplate tube can be either short (1) or long (2).
The short tube has two positionings for the adjustment support (RH and LH) in order to reach short footplate distances.
The long tube has only one positioning for the adjustment support and it is design for longer footplate distances.
The tubes for double footplates and one piece footplates are the same, but the adjustment support is different.

To reach the shortest footplate distance, one can, both at original assembly or afterwards, cut off the footplate. The dotted lines **D** in the pictures above show up to where you can cut off the frame: just below the fork support (regardless its positioning).
It should be clear that the possible adjustment may then be limited.

The adjustment support is fixed to the tube with the bolt **E** on which a drop of strong lock thread glued is spread. Should you need to change the position of the support (only short tube), in order to unscrew the bolt, you may need to heat it first. When you assemble the support, spread a drop of strong lock thread glue on it.

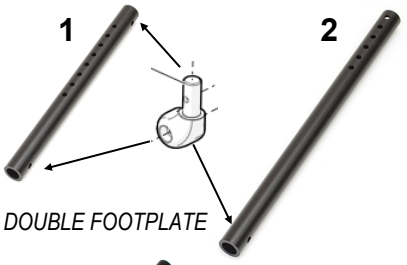
After adjustment, check that between the lower side of the footplate and the ground there is at least 2 cm and that there is no interference between footplate and casters.

<u>Rubber adaptor for round footplate tube on elliptical tube (from 2019).</u>

The round footplate tube needs the adaptor **F** to fit the elliptical frame tube. The adaptor's hole is not centred, therefore, you have to pay attention to mounting right and let adaptors in the same way.

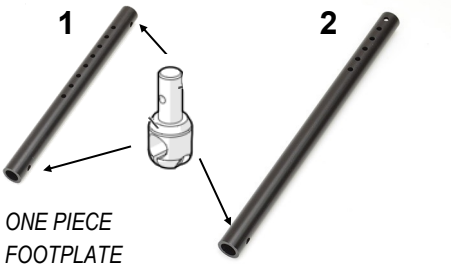
- If the centre of the fixing hole **A** is at 20 mm from the lower extremity of the frame tube, the adaptor **F** is usually mounted with its narrower side facing frontward. In order to avoid squeezing the adaptor too much, do not tighten the bolt very hard.
- If the centre of the fixing hole **A** is further than 20 mm, thus even the hole **C**, the adaptor **F** is glued to the frame and assembled with its narrower side backward. This is due to the fact that when you tighten the bolt, the tube will lean against the inner side (which is very close) of the frame tube and that guarantees the stability of the system. The bolt for this fixing includes a spacer **G** under the bolt's head. This way, the bolt will run in beyond the frame tube wall; if so, it would impede the correct fixing of the footplate tube. (This fixing is of course also possible if the point **A** is at 20 mm).
- To turn the adaptor, (if it is not glued), remove the footplate tube, slide the adaptor off and mount it reversed.

With elliptical footplate tubes, the adaptor is not present.

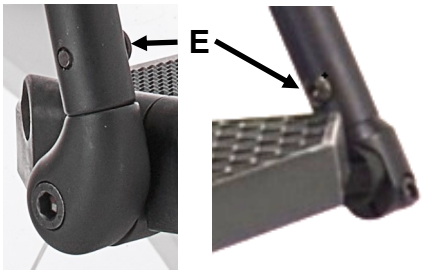


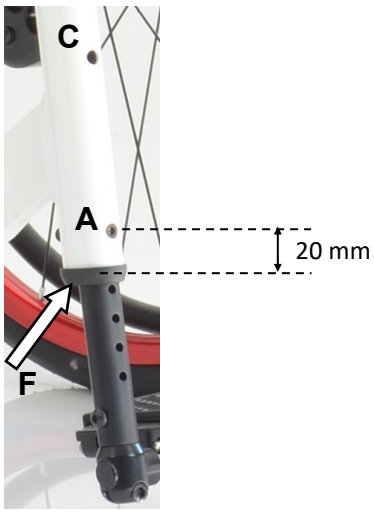
DOUBLE FOOTPLATE

In the former version, the footplate tube (RH and LH), one size only, has an integrated plastic support.

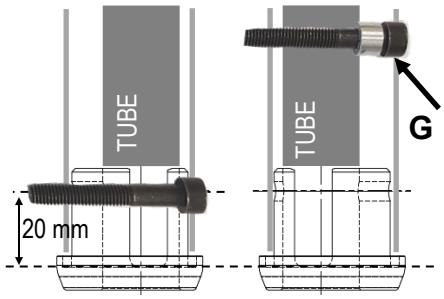


ONE PIECE FOOTPLATE





fixing A *fixing C*



FOOTPLATE DISTANCE

EGO CARBON

HEIGHT ADJUSTMENT EVERY 1.5 cm

Screw off the bolt **A** of both side of the frame.

Slide the tubes to the necessary height.

Make sure the height of the two sides is the same.

Insert the bolt **A** paying attention to fitting it with no effort into the threaded hole **B** on the rear side of the support **C**.

The footplate tube's holes and the hole of the support **B** must be aligned.

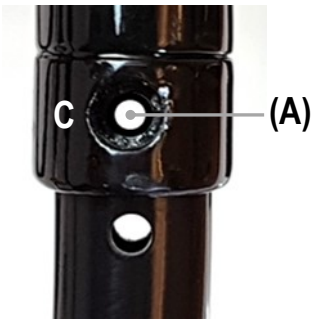
Finally, tighten the bolt **A** on both sides of the frame.

Do not force screwing the bolt, you may damage the thread of the hole **B**. Should that occur, you can remedy by pass the threaded hole with a M5 tap starting from the rear side of the support.

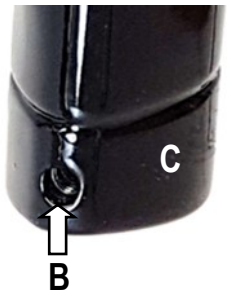
If the thread is too damaged to be repaired, you can pass the hole with a 5 mm drill bit and fix the tube with a longer bolt, washer and nut.

You can not change the support **C**.

After adjustment, check that between the lower side of the footplate and the ground there is at least 2 cm and that there is no interference between footplate and casters.



FRONT



REAR

ONE PIECE ALUMINIUM FOOTPLATE WITH AUTOMATIC CLOSURE (COMPACT)

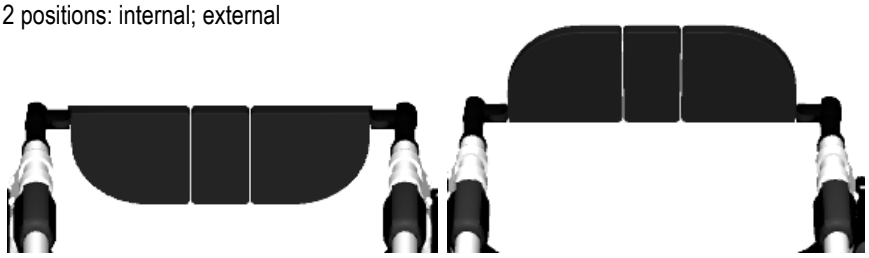
With elliptical tubes

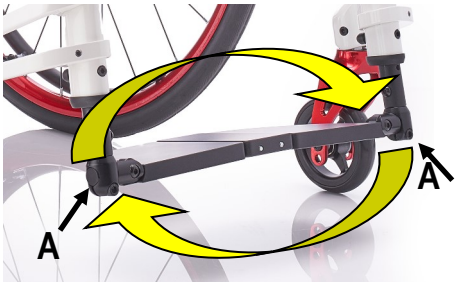
ANGLE ADJUSTMENT

With round tube: loosen the bolt **A** of both adjustment supports.
With elliptical tube: loosen the grab screw **A1** and the bolt **A** of both adjustment supports.
Turn the plate frontward or backward.
Once reached the correct inclination, tighten the bolt **A** on one of the two sides.
Check the footplate folds and unfolds automatically when opening or closing the seat (you may need to make a minor adjustment working on the plate) and then fix the bolt **A** of the other side.
With elliptical tube: tighten the grab screw **A1** of both supports.

POSITIONING

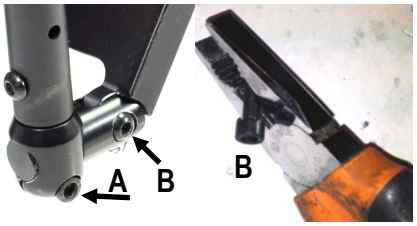
2 positions: internal; external





REVERSING THE FOOTPLATE

1) Loosen the angle adjustment bolts **A** and slide off the lock and rotation sides supports from the tube and assemble them reversing their position.
2) Or, remove the tubes, follow instructions of chapter *footplate distance* and assemble them reversing their side.
Finally, adjust the inclination and tighten the bolts **A**— see also *"angle adjustment"*.



IF THE FOOTPLATE DOES NOT FOLD AUTOMATICALLY

The angle adjustment of the two supports is different: adjust one of the two supports (see "*angle adjustment*").
The friction of rotation of one or both supports is excessive: loosen the bolt **B**.
The parts involved in the rotation are dirty: screw off the bolt **B** to remove the footrest plate from the support; clean the parts, re-assemble the plate on the support and tighten the bolt **B** making sure the rotation is free, but with a minimum play.

Clean the parts

To prevent the bolt **B** from loosening accidentally, it is advisable to squeeze a little part of its thread with a wrench, spread a drop of strong thread lock glue, insert it and screw it.

FRONT FRAME JOINING SYSTEM

When the wheelchair is equipped with double footplate or one piece flip-up footplate, ta joining system with stretched band is necessary in order to avoid the two front frames from widening apart while driving the wheelchair and/or when making transfer.

If the footplate mounted on this model is the double footplate, the wheelchair.

MUST NEVER BE USED WITHOUT JOINING SYSTEM.

The system includes a black steel plate on each side to which a stretched band is fixed.

You can change the position of the plate.

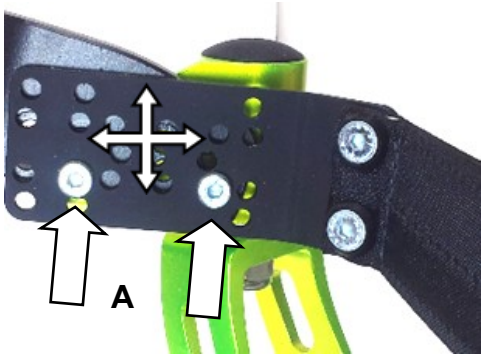
Screw off the two bolts **A**.

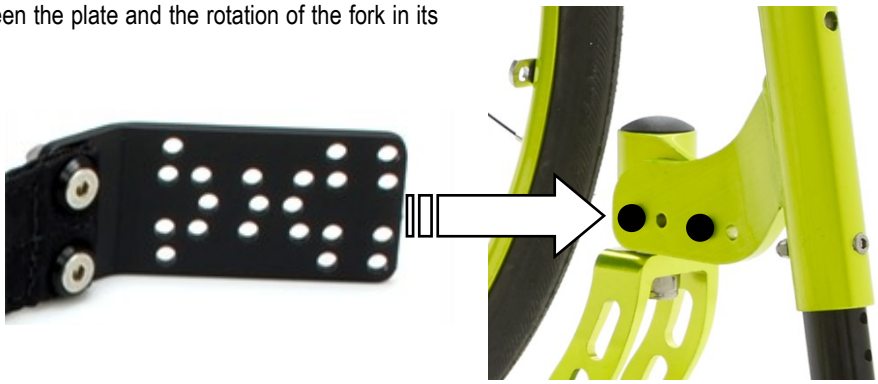
This way you can remove the plate, but also the unit “fork support/fork” comes off.

Position the plate higher, lower, more forward or more rearward aligning two of its holes to the two fixing points of the unit “fork support/fork”.

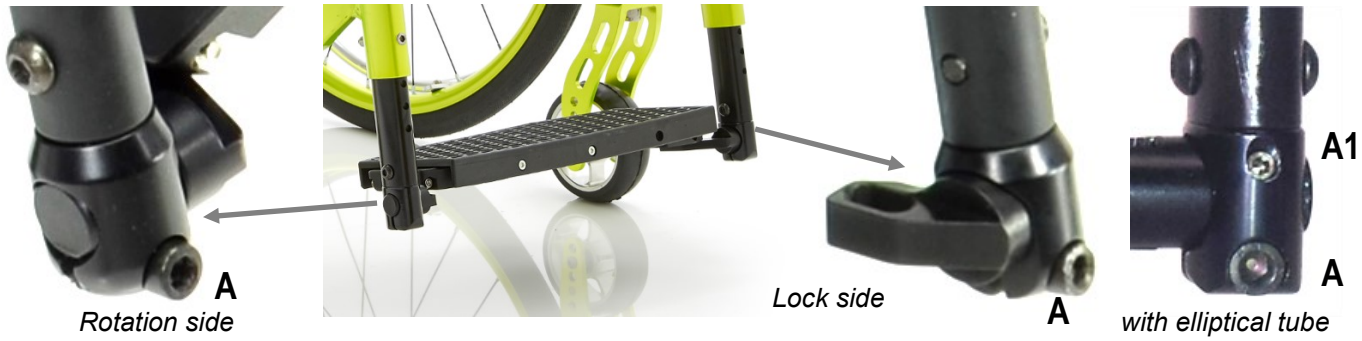
Now, adjust the fork angle, see sheet “*fork angle*” with the plate in the new position.

Make sure there is no interference between the plate and the rotation of the fork in its upper side.





ONE PIECE FLIP-UP PLASTIC FOOTPLATE



ANGLE ADJUSTMENT

Leave the footplate engaged in the using position.

With round tube: loosen the bolt **A** of both adjustment supports.

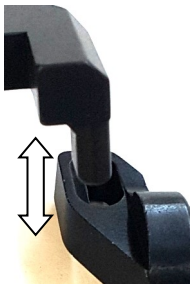
With elliptical tube: loosen the grab screw **A1** and the bolt **A** of both adjustment supports.

Turn the plate frontward or backward.

Once reached the correct inclination, tighten the bolt **A** on the lock side.

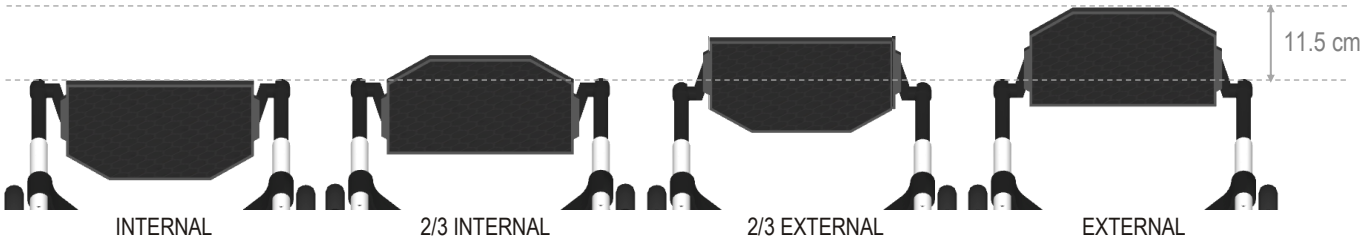
Check the footplate engages and disengages easily (you may need to make a minor angle adjustment working on the plate) and then tighten the bolt **A** of the rotation side

With elliptical tube: tighten the grab screw **A1**.



POSITIONING

4 positions: internal; 2/3 internal; 2/3 externa (not present in the order form); external



It is possible to change the footplate position in different ways

1) Loosen the angle adjustment bolts **A** and remove the lock side support and the rotation side support from the tubes and assemble them exchanging their position.

2) Remove the tubes following the instructions of the chapter footplate *distance* and assemble them again exchanging their position.

Finally, adjust the angle adjustment.
Using either of these two methods, you can turn the footplate position from internal to external (or vice versa) or from 2/3 internal to 2/3 external (or vice versa).
When reversing the footplate in either these two methods, you change the lock side, too.

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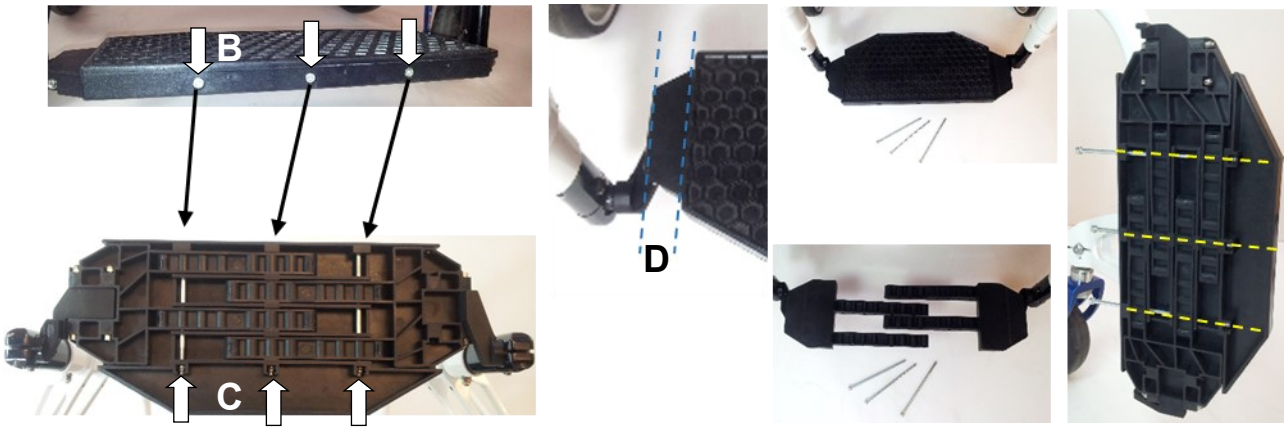
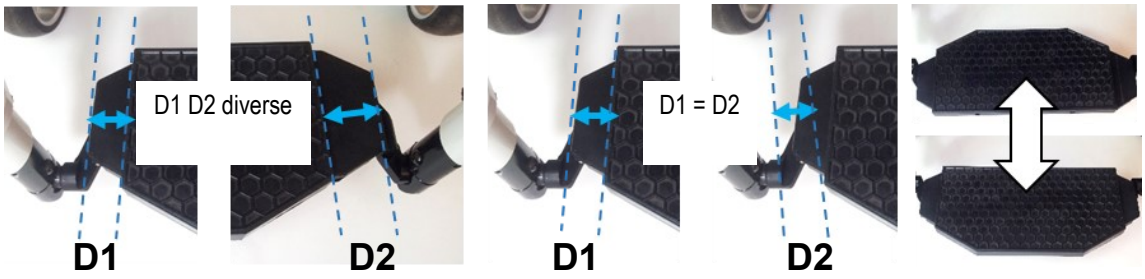
ONE PIECE FLIP-UP PLASTIC FOOTPLATE

You can also change the position of the sole plate with respect to the structure under it that is fixed to.

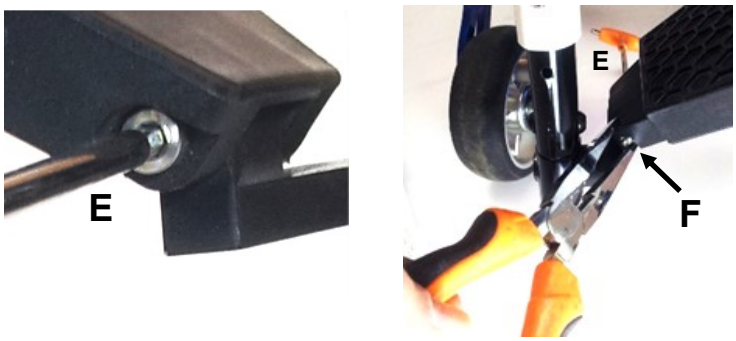


Remove the three bolts **B**. To hold the nuts **C** no spanner is needed.
Observe the distance **D** that you will have to keep after changing position. It is useful to mark it or measure it in order to have a reference.
Remove the plate. You will see the two parts of the lower structure free.
Position the plate in the opposite side on the lower structure and align the holes of all components.
Make sure to keep the same distance **D** at right and left and equal to the reference you took earlier.
Insert the bolts **B** and the nuts **C** and tighten until compacting the parts (tightening hard is not necessary).

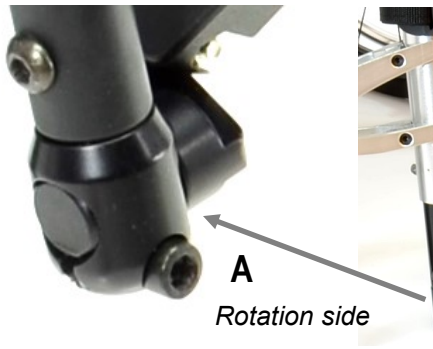


When reversing the sole plate, you can turn the footplate position from internal to 2/3 internal (or vice versa) or from external to 2/3 external (or vice versa).
The lock side remains the same.

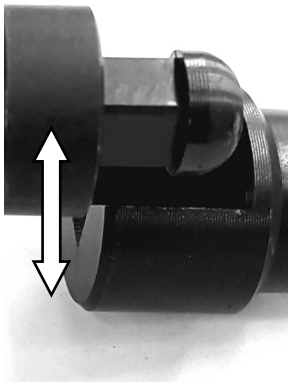
To adjust the friction of the footplate rotation movement, tighten or loosen the bolt **E**.
It may be necessary to hold the nut **F** with a wrench.
Usually, when the footplate is lifted up the adjustment holds its position.



ONE PIECE FLIP-UP ALUMINUM FOOTPLATE



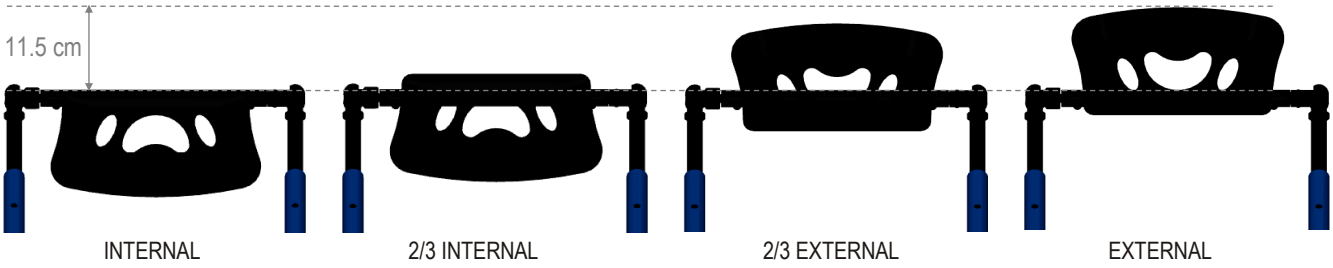
ANGLE ADJUSTMENT



Leave the footplate engaged in the using position.
With round tube: loosen the bolt **A** of both adjustment supports.
With elliptical tube: loosen the grab screw **A1** and the bolt **A** of both adjustment supports.
Turn the plate frontward or backward.
Once reached the correct inclination, tighten the bolt **A** on the lock side.
Check the footplate engages and disengages easily (you may need to make a minor angle adjustment working on the plate) and then tighten the bolt **A** of the rotation side.
With elliptical tube: tighten the grab screw **A1**.

POSITIONING

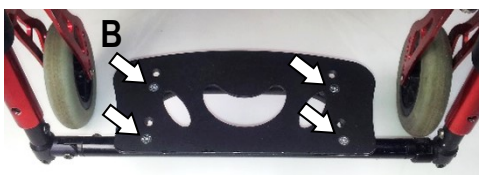
4 positions: internal; 2/3 internal; 2/3 externa; external

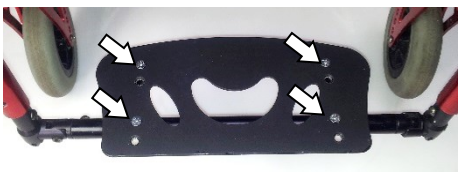


CHANGING THE PLATE POSITION

Remove the 4 bolts **B** and fix the plate using the other set of holes.

The plate can be orientated with its curved side facing either back or front.





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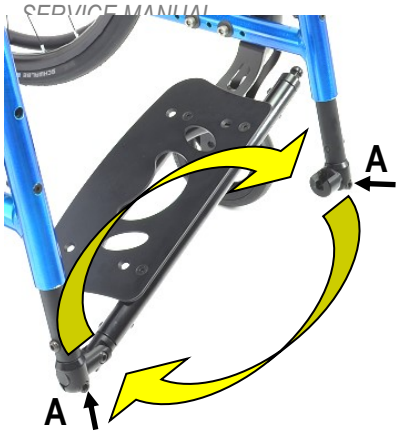
ONE PIECE FLIP-UP ALUMINUM FOOTPLATE



REVERSING THE FOOTPLATE

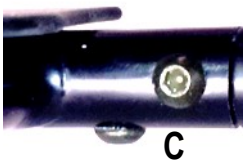
1) Loosen the angle adjustment bolts **A** and slide off the lock and rotation sides supports from the tube and assemble them reversing their position.

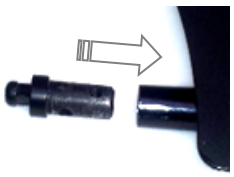
2) Or, remove the tubes, follow instructions of chapter *footplate distance* and assemble them reversing their side.

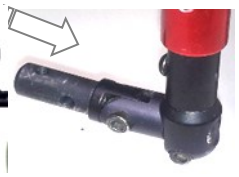
Finally, adjust the inclinantion and tighten the bolts **A**— see also *"angle adjustment"*.
Using either of these two methods, you can turn the footplate position from internal to external (or vice versa) or from 2/3 internal to 2/3 external (or vice versa).
When reversing the footplate in either these two methods, you change the lock side, too.

CHANGING THE LOCK SIDE WHILE KEEPING THE SAME PLATE POSITION

Reverse the footplate position as above indicated on point 1 of the chapter "*reversing the footplate*".
The footplate tubular is fixed to the rotation support and to the lock support with two bolts **C** each.
Lift the footplate.
Remove the two bolts **C** of the lock support and slide it off the footplate tubular.
Remove the two bolts **C** of the rotation support and slide the footplate out of it
Should the bolts be too hard to unscrew, you will have to heat them up in order to make the thread lock glue lose its efficiency.
Spread some mild or strong thread lock glue on the bolts **C**.
IInsert the lock and rotation supports on the footplate tubular opposite and fix them with the bolts **C**.
Pay attention when fixing the rotation support, in fact, it can rotate on one direction only (if it is mounted opposite, the footplate can only rotate downward).
Adjust the inclination and tighten the bolts **A**— see also *"angle adjustment"*.



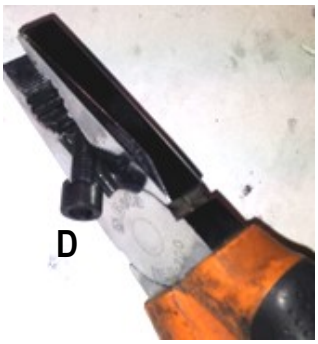




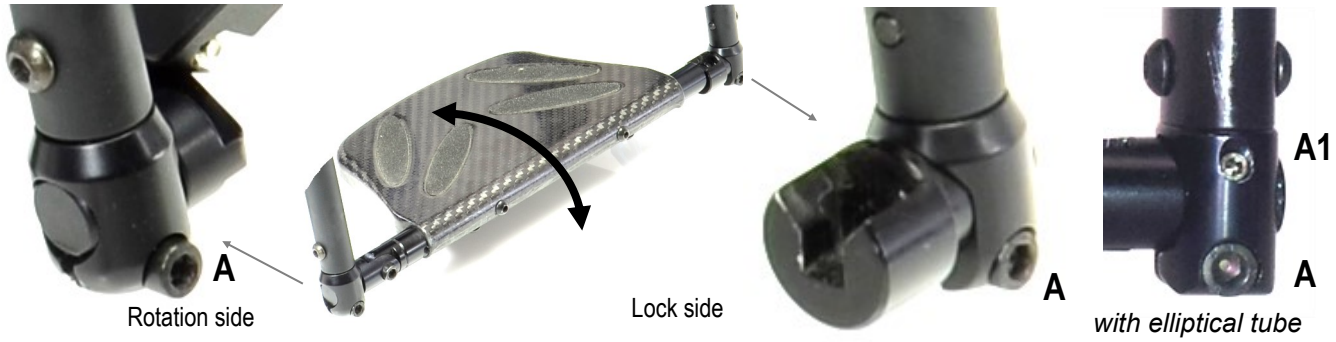
FRICTIONING THE ROTATION

To adjust the friction of the footplate rotation movement, tighten or loosen the bolt **D**.

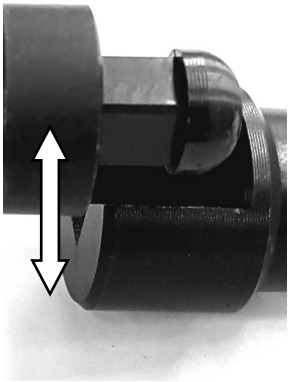
It is advisable to remove the bolt, squeeze a little part of its thread with a long nose pliers, spread a drop of strong thread lock glue, insert it and screw it. In fact, the movement of the footplate can lead that bolt to unscrew itself. Usually, when the footplate is lifted up the adjustment holds it in place.



ONE PIECE FLIP-UP CARBON FOOTPLATE



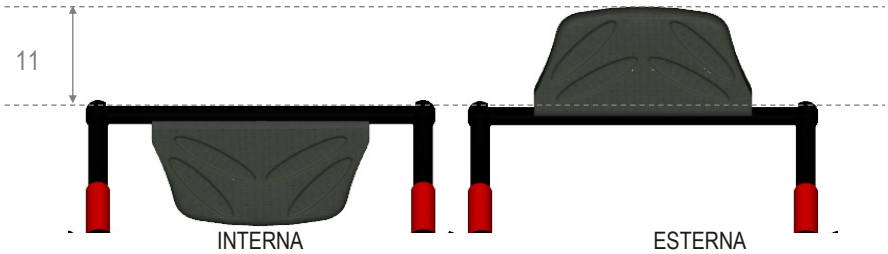
ANGLE ADJUSTMENT

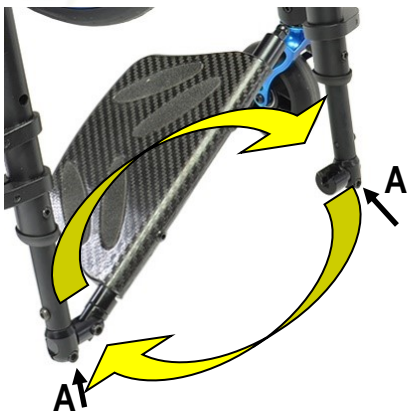


Leave the footplate engaged in the using position.
With round tube: loosen the bolt **A** of both adjustment supports.
With elliptical tube: loosen the grab screw **A1** and the bolt **A** of both adjustment supports.
Turn the plate frontward or backward.
Once reached the correct inclination, tighten the bolt **A** on the lock side.
Check the footplate engages and disengages easily (you may need to make a minor angle adjustment working on the plate) and then tighten the bolt **A** of the rotation side.
With elliptical tube: tighten the grab screw **A1** of both supports.
Note: this kind of footplate allows for the plate to be turned 180°, therefore, before proceeding with the adjustment, raise the plate from the lock side and turn it until its rotation stops.
This rotation allows for a temporary opposite position of the plate, but it also helps to reduce the encumbrance if the plate, in its normal use, is positioned "external".
To carry out such operation, just raise the plate from the lock support and turn it tp the opposite position; then engage it to the lock support normally.

POSITIONING

2 positions: internal; external





REVERSING THE FOOTPLATE

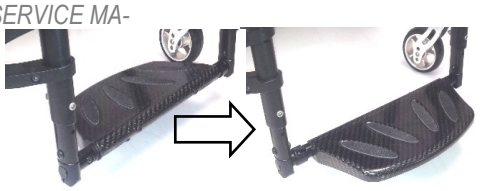
1) Loosen the angle adjustment bolts **A** and slide off the lock and rotation sides supports from the tube and assemble them reversing their position.
2) Or, remove the tubes, follow instructions of chapter *footplate distance* and assemble them reversing their side.

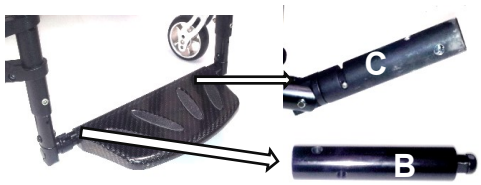
Finally, adjust the inclinantion and tighten the bolts **A**— see also *"angle adjustment"*.

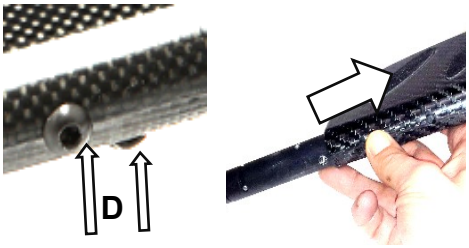
When reversing the footplate in either these two methods, you change the lock side, too.

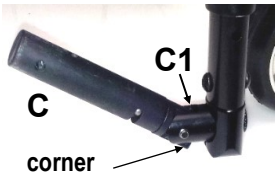
Follows next page

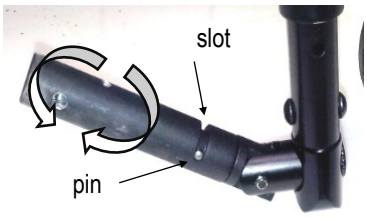
ONE PIECE FLIP-UP CARBON FOOTPLATE

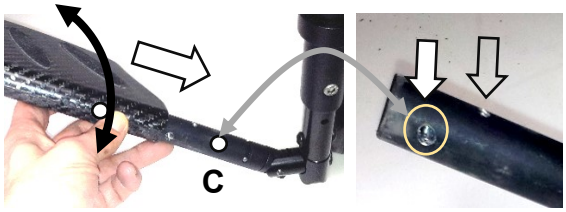


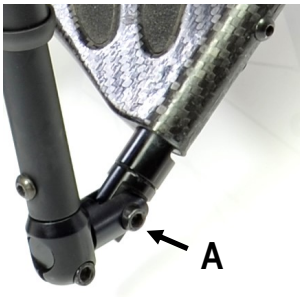












CHANGING THE LOCK SIDE WHILE KEEPING THE SAME PLATE POSITION

Reverse the footplate position as above indicated on point 1 of the chapter "*reversing the footplate*".
The footplate is fixed with the rotation tube **B** and the lock tube **C** with two bolts **D** each.
Lift the footplate.
Remove the 2 bolts **D** on the lock side **B** and slide the support off the footplate.
Remove the 2 bolts **D** on the rotation side **C** and slide the footplate off.
Should the bolts be too hard to unscrew, you will have to heat them up in order to make the thread lock glue lose its efficiency.
Spread some strong thread lock glue on the bolts **D**.
Insert the lock tube **C** into the other side of the footplate and fix the bolts **D**.
Assemble the rotation tube to the support **C1** so that the rotation of is upward (the corner of the extremity of the tube must be assembled at the bottom).

The tube **C** is made in two parts fixed together by means of a cylindrical pin that also works as full stroke of the 180° rotation along the slot.
The correct fixing of the footplate to the tube **C** has to allow the footplate, after lifting it up, to rotate front and backward moving upward.
Partly insert the footplate onto the tube **C** and align the front hole of the footplate and the external hole of the tube **C**.
Holding the two parts, check that the rotation is upward. If the rotation is downward, hold the footplate and turn only the tube **C** by 180°. Check the rotation again.

Spread some mild or strong thread lock glue on the bolts **D**.
Likewise, insert the footplate along the tube **B** making the hole coincide. Then fix the two bolts **D**.

Adjust the footplate inclination following the instruction of the chapter "*angle adjustment*".

FRICTIONING THE ROTATION

To adjust the friction of the footplate rotation movement, tighten or loosen the bolt **A**.

It is advisable to remove the bolt, squeeze a little part of its thread with a wrench, spread a drop of strong thread lock glue, insert it and screw it. In fact, the movement of the footplate can lead that bolt to unscrew itself. Usually, when the footplate is lifted up the adjustment holds it in place.

DOUBLE FOOTPLATE

ANGLE ADJUSTMENT

Loosen the bolt **A**.

Turn the plate clock or anti clock wise.

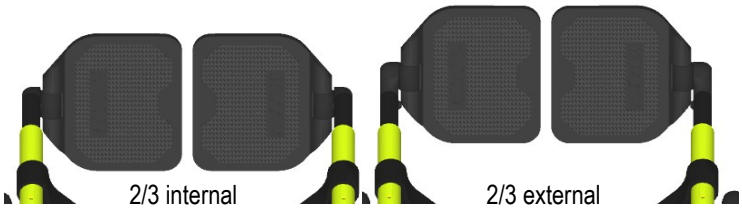
Once you find the correct inclination, tighten the bolt.

If necessary, you can adjust the inclination of the two independent footplates differently.

POSITIONING

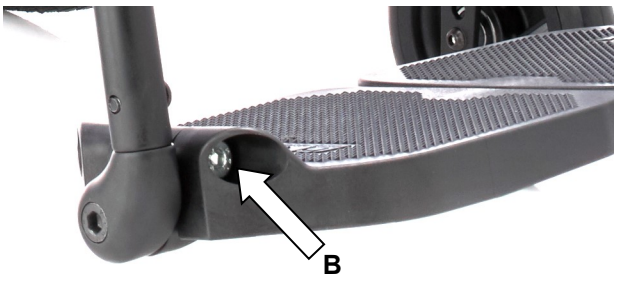
2 positions: 2/3 internal or 2/3 external.

To reverse the position, remove the footplates complete with tubes and assemble right side to left and the other way round—see also chapter "*height adjustment*". It may be necessary to adjust the angle.



FRICTIONING THE ROTATION

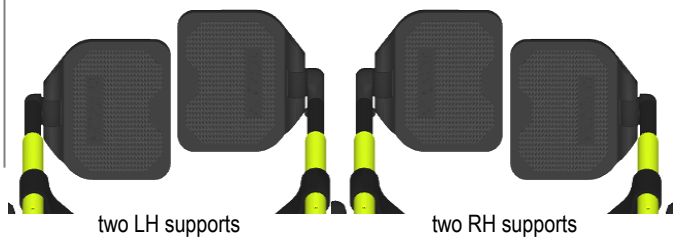
To adjust the friction of the footplate rotation movement, tighten or loosen the bolt **B** (the corresponding nut is held within it housing). Usually, when the footplate is lifted up the adjustment holds it in place.



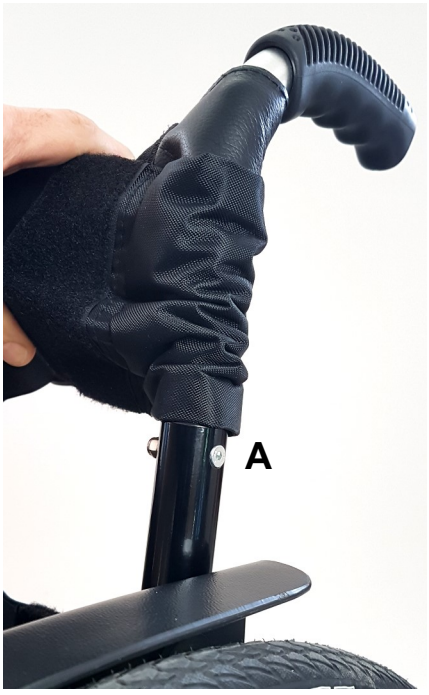
Particularity

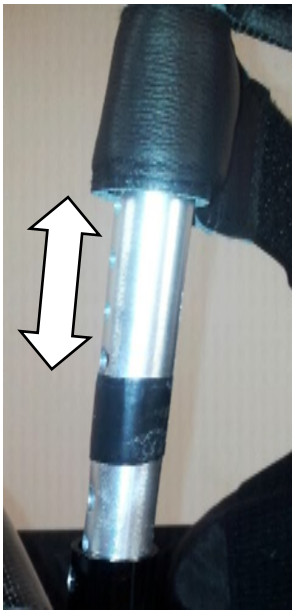
Should you need a plate positioned 2/3 internal and the other 2/3 external, it is necessary to have two adjustment supports of the same side (two right or two left).

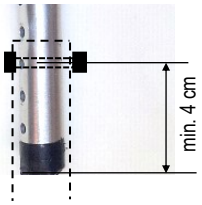
Note: for right hand side we intend right facing back, thus, if assembled on the left, it will be left facing front;
for left hand side we intend left facing back, thus, if assembled on the right, it will be right facing front;



BACKREST HEIGHT







Remove the backrest upholstery and slide up the protecting sleeves of the backrest bands along the tube until the fixing bolt/washer/nut **A** is accessible.

If the bolt is not accessible, remove the mudguard - see sheet "*mudguard*"

Screw off the bolt/washer/nut **A .**

Raise or lower the backrest tubes to the desired height and fix the tube with bolt/washer/nut **A**.

If the minimum height you can reach is not enough, you will need to cut off the lower side of tube.

If the maximum height you can reach is not enough, you will need to replace the tube with a longer one.

Warning: to guarantee a good stability, between the fixing hole and the lower side of the tube, there should be at least 4 cm. If the tube is cut, the lower hole will be only a few millimetres front the end of the tube; therefore, you should not use that hole, the next and, sometimes even the third to fix the backrest height.

To reduce possible play and possible noise, you can put some sticky tape around the inner tube at its bottom and at its fixing point.

BACKREST ANGLE

Adjustment from 94° (4° tilted backward) to 78° (12° tilted frontward) with respect to 90° to the seat.

Loosen the nut **A**.

Screw or unscrew the adjustment bolt **B** to open or close the angle of the backrest. While turning the bolt, observe how the inclination changes.

If the bolt **B** is too hard to turn, unlock the backrest and try again.

Should it still be too hard, remove the nut **A** and push the lock axle **D** out of the support until the bolt **B** is accessible from the outside.

This way, there will be no pressure on the bolt **B**.

After adjustment, tighten the nut **A** step by step trying to lock and unlock the backrest a few times.

Warning: DO NOT OVER TIGHTEN the nut **A**, you may damage the housing for the lock axle **D**.

If the hook **E** does not go down completely, slightly loosen the nut **A**.

If it does not go down completely yet, slightly loosen the bolt **C**.

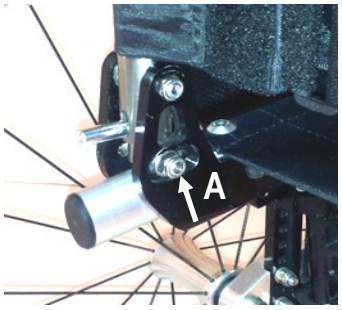
You must not loosen the nut **A** too much; otherwise, the lock axle **D** becomes instable.

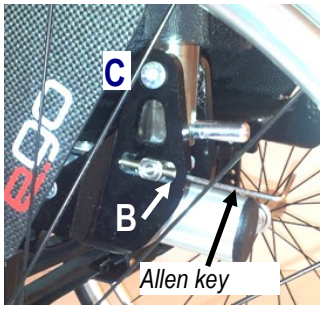
Check and, if necessary, clean and/or lubricate all parts subjected to friction.

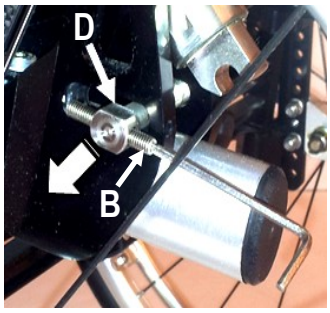
Repeat the same operation on the other side making sure both tubes are adjusted with the same inclination (if needed, you can adjust the two tubes differently).

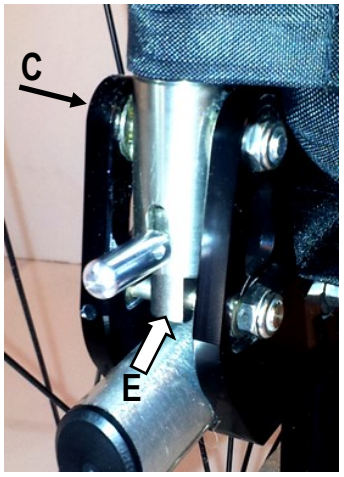
The model Ego Custom do not use the same backrest support of the Ego and Ego Carbon, however the adjustment is the same

Remember that the backrest angle can affect the point of balance of the wheelchair. In fact, with tilted backward backrest (open angle), the wheelchair becomes less stable.





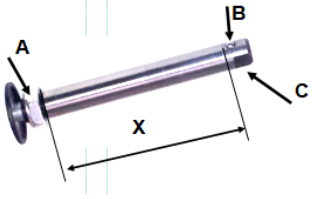




Support on the Ego Custom

QUICK RELEASE AXLE

(rear wheel)



Adjust the quick release axle so that the rear wheel is safely fixed with no risk that it comes off accidentally.

At the same time, there should be no or very little play.

To check if the rear wheel is safely fixed, take hold of the hub without pressing the release button, and try to pull the wheel in and out.

As regular maintenance, it is advisable to clean the quick release axle and spread a little of grease on it.

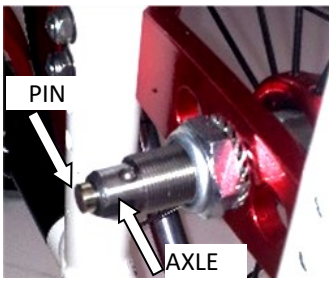
If the wheel comes off, the distance **X** between the nut **A** and the balls **B** is too short, therefore, it is necessary to unscrew the nut **A** while holding the point **C** of the axle. **If there is play,** the distance **X** between the nut **A** and the balls **B** is too long, therefore, it is necessary to screw the nut **A** while holding the point **C** of the axle

In both cases, make a few tries until the correct adjustment. There is no need to remove the axle from the wheel.

It may happen that you adjust the axle so that the wheel only seems properly fixed, but it is not safe.
In fact, to check the adjustment, you have also to try to press the button just a little bit (as guidance, ¼ of its run) and pull the wheel. If it comes off, it means that it may come off while driving! Therefore, this is a very important **safety check**.
If the wheels comes off, unscrew the nut a little bit until you have the proper adjustment.

If the wheel (the axle) gets stuck in the receiver, you can proceed in two ways:

- press the quick release button, pull the rear wheel and, at the same time, with a mallet, gently hit (a little harder if necessary) the hub or spokes of the wheel.
- press the quick release button so that the axle's pin is out, then position a spanner on the axle's shaft and around the pin. Now, while pushing the axle's button, pull the rear wheel and gently hit the spanner. To do that, you need the help of another person.



The reasons why the wheel can get stuck can be two.

- the receiver is slightly damaged; in this case, with a ½ reamer, re-pass the receiver's hole.
- when pushing the axle's button, the balls do not fall inside the axle's shaft; first, clean the axle, then try to push the button a few times a see if you have solved the problem; if not, press the button, hold the axle's pin with a wrench and unscrew the button half of a turn. Check and if necessary do the same with another half turn. Do not unscrew the button too much: the pin will come off and, consequently, the balls will fall to the ground.

SEAT WIDTH ENLARGEMENT

It is possible to make the seat width larger by maximum 5-6 mm each side, by modifying the side guard fixing.

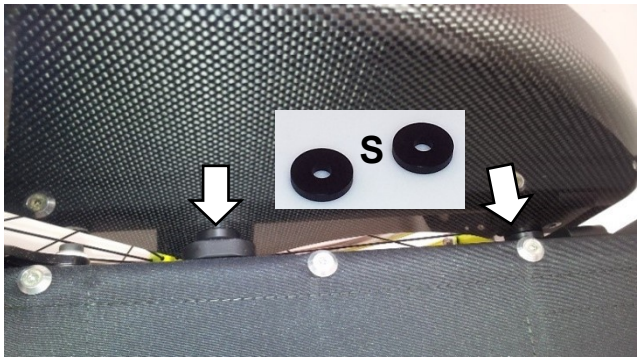
EGO

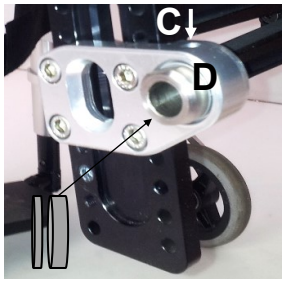
EGO

CARBON

EGO

CUSTOM





Remove the bolts **A** and **B** (in the version Custom, also the corresponding washers and nuts)

You have to replace the bolts **A** and **B** with 5 mm longer ones.

Insert the longer bolt **A** and **B** through the holes of side guard; put a 5-6 mm spacer **S** on each bolt.

Screw the bolt **A** without fixing it and then insert and tighten the bolt **B**.

Finally, tighten the bolt **V1**.

It is not advisable to put spacers thicker than 6 mm; in fact, the rear wheel will get too close to the side guard.

If you happen to damage the thread of the hole for the bolt **B**, you can repass the hole with a 5 mm drill pin. Then use longer bolt, insert it from the inner side and fix the side guard wit ha washer and nut on the outer side.

If you enlarge the seat, the rear wheel may get too close to the side guard or even interfere with it: in such case. It is necessary to add a spacer on the rear wheel receiver.

To do so, loosen the headless bolt **C** and then screw off the receiver **D**. Then, insert the 3 or 6 mm spacer/s, screw and tight the receiver and, finally, screw the headless bolt **C**.

If the quick release axle does not get through, or hardly does it, the receiver, follow the instruction of the sheet “quick release axle”.

Advice: before removing the receiver, it is useful, as a try, put the spacer on the axle of the wheel and put it on. This way, you will immediately see what spacer you need.

At each adjustment, it is advisable to spread a drop of mild lock thread glue on the bolts **A B** and also on the receiver **D** and the screw **C**.