SERVICE MANUAL

ENGLISH

SERVICE MANUAL

EXELLE JUNIOR

Rev. 1 - 2021/05

progeo ACTIVE DESIGN

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.

EXELLE JUNIOR

SERVICE MANUAL

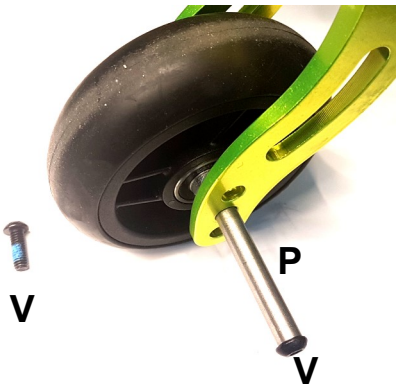
FRONT HEIGHT 1

(caster on fork)

Standard version

Holes interval – 12,7 mm

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



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 pread a drop of mild lock thread glue on the bolts **V**.

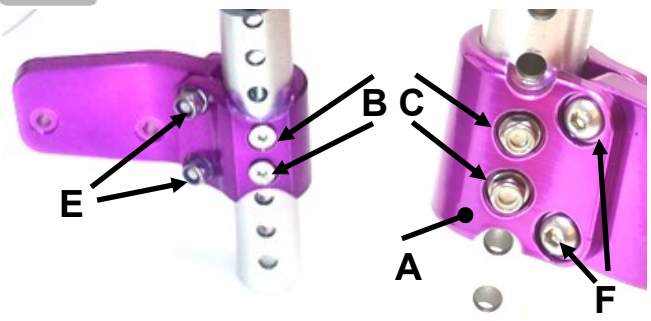
FRONT HEIGHT 2

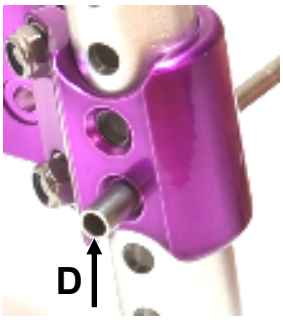
Fork support positioning

For the model Exelle Junior, you can adjust the front height by moving the clamp **A** of the fork support and fix it to the holes on the frame.
These same holes are designed to fix the footplate positioning lever, too. In some case, as you will see, the footplate support is involved in the front height adjustment.
Remember that the front height adjustment can affect the seat inclination, so it is necessary to check and adjust the fork angle.

Adjustment of the fork support independently from the footplate positioning lever.
Screw off the bolts/washer/nuts **B C**.
Remove the spacing buckle **D** present on each fixing point. To remove the spacing buckle **D** you may need to gently use a hammer and a pin punch.
Position the clamp **A** to the desired height following the holes on the frame.
If the clamp **A** results hard to move, loosen the nuts **E**.
Align the holes of the clamp to those on the frame and insert the spacing buckle **D**.
Once you have positioned the clamp, tighten the bolts **F** first, hold them and then tighten the nuts **E**.

The bots/washer/nuts **B C** should be tighten just enough to prevent a possible play of the clamp.
DO NOT TIGHTEN THEM TOO MUCH because the flat face of the clamp may crack.



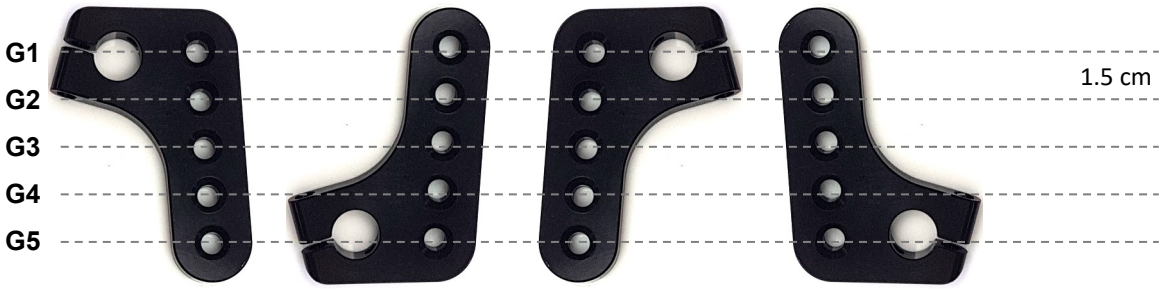


Adjustment envolving the footplate positioning lever

The adjustment envolves the footplate positioning lever when this lever is fixed to one or both holes on the frame where you need to fix the clamp of the fork support and you want to keep the same footplate distance.

<u>With “L-shape” footplate positioning lever (from 2018)</u>

This “L-shaped” ambidextrous lever always allows for 1.5 cm adjustment without using the holes through which the fork support clamp is fixed. In fact, you can orientate the lever in four directions and you can fix it using any to near holes.



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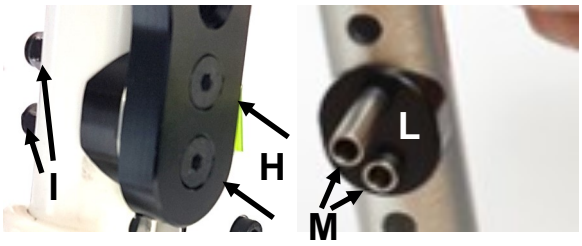
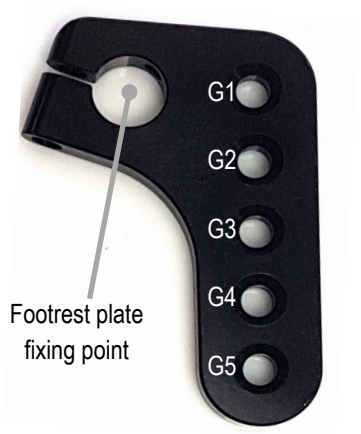
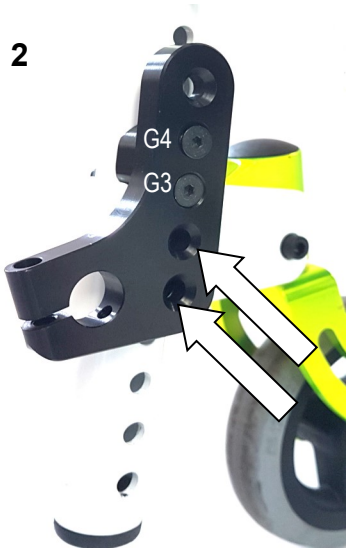
FRONT HEIGHT 2

Fork support positioning



Now, if you have to fix the clamp using one or two holes through which also the footplate positioning lever is fixed, you have to remove this lever.
Remove bolts/washer/nuts **H I** and remove the spacer **L**.
Also remove the spacing buckles **M** (note: the spacing buckle **M** are longer than the spacing buckle **D** of the fork support clamp)
Fix the clamp following the instructions mentioned above.
Now you have to fix the footplate positioning lever where it will keep the same footplate distance as before removing it.
Insert the spacing buckle **M**, position the spacer **L** and fix the bolts/washers/nuts **H I**.
In the pictures **1** and **2** , you can see that the fixing point of the footrest plate is at the same height even if the assembly is different.
The arrows show the fixing points of the clamp. Such points are independent from those fixing the lever.
Furthermore, while keeping the same fixing points on the frame, both in picture 1 and in picture 2, you can see that you can move the footplate positioning lever two positions higher and one lower.





<u>With curved three angles footplate positioning lever (until 2018)</u>

Differently from the “L-shaped” lever and even though you can orientate it in four directions and even have three inclinations (see also sheet “*footplate distance*”), this lever does not allow for 1.5 cm step adjustment independently from the position of the fork support.
In several cases, thus, the assembly of this lever occurs through one or both holes used to fix the fork support clamp. We can call such holes “common holes”.

one common hole

one common hole

two common holes

Follows next page

FRONT HEIGHT 2

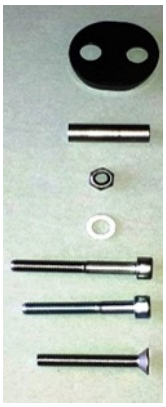
Fork support positioning

If the clamp of the fork support is to be fixed to one or both common holes, remove the lever likewise above mentioned for the “L-shaper” lever”.

Position the clamp of the fork support aligning its holed to those on the frame and insert the spacing buckles **D**.

- If the lever is to be fixed through two common holes, then the spacer **L** is not needed because the lever will lean on the flat face of the clamp.
- If the lever is to be fixed through one common hole, position the spacer **L** just above or just below the clamp (according to the necessary adjustment) and fix the parts.

Note: according to how the parts are assembled to one another, the bolts changes – see nere below.



L = 2 mm half-moon spacer for dm 25 tube (to be put between the frame and the lever when at least one fixing hole is not a “common hole”.

D = spacing buckle L 26 mm

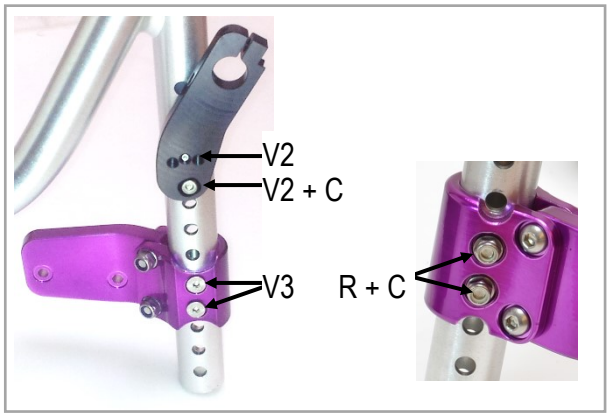
C = lock nut M5

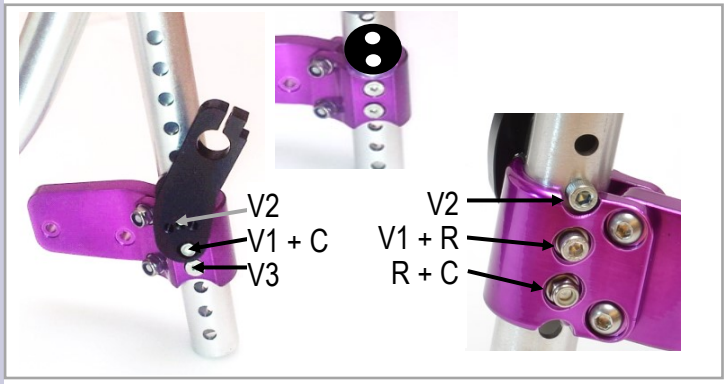
R = flat washer 5mm

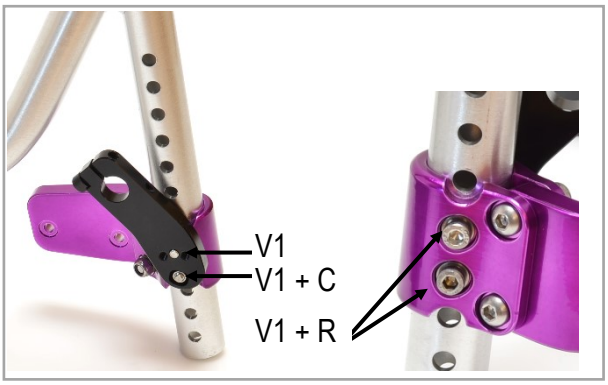
V1 = boltTCEI 5 x 40

V2 = bolt TCEI 5 x 35

V3 = bolt TSPEI 5 x 35







According to the necessary combination, the quantity of the cylindrical spacer **M** changes; therefore, you will have to add or remove one or two of them (they can be 2, 3 or 4 each side).

Each wheelchair is provided with a “kit of screws”, which includes all the remaining screws that are necessary to be able to assemble the parts in any possible combination.

FRONT HEIGHT 3

(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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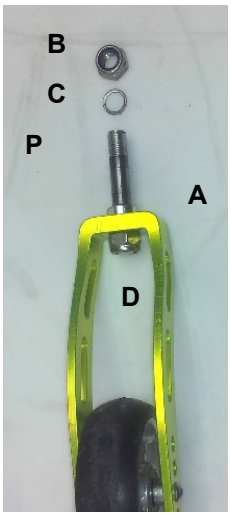
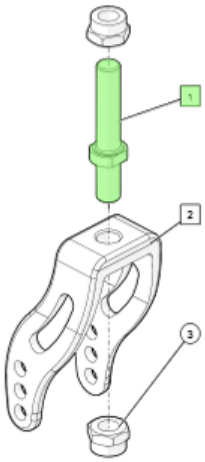
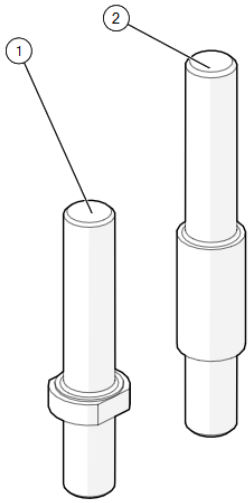






To get access to the nut **D**, it may be necessary to remove the wheel.

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

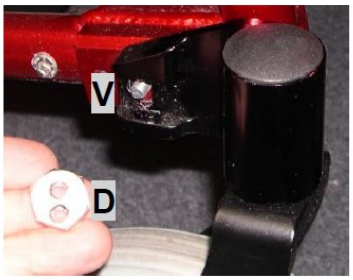
FORK ANGLE

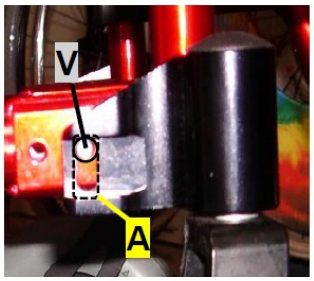
system with hexagon

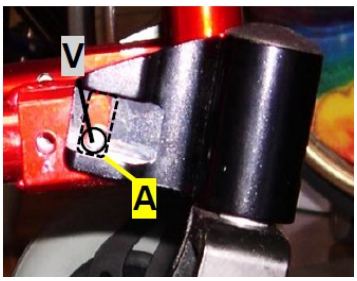
WORK ON A FLAT AND EVEN SURFACE.

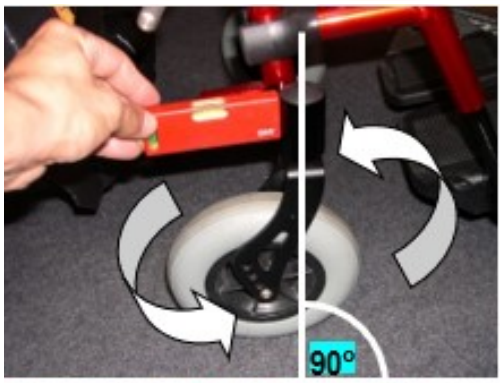
The adjustment is the same for both Exelle and Exelle Vario. The pictures show the assembly on the Exelle Vario. Note that, differently from the models Exelle/Exelle Vario, the support is assembled facing backward; however, in some cases in alcuni casi, it is possible to assemble it facing frontward.

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.

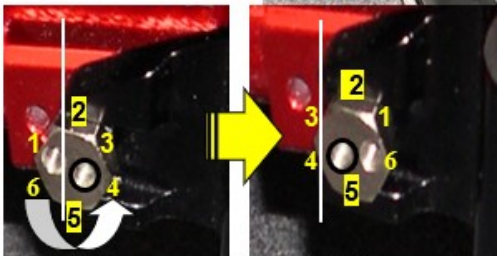
When you find the coinciding position, push the nut into the housing and tighten the bolt. Should no position allow for the perfect alignment, try the other hole of the nut and repeat the same operations.

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.

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

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	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 brakes	Fix or replace the side guard. Add spacer on the receiver. Adjust the brake.
	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	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.

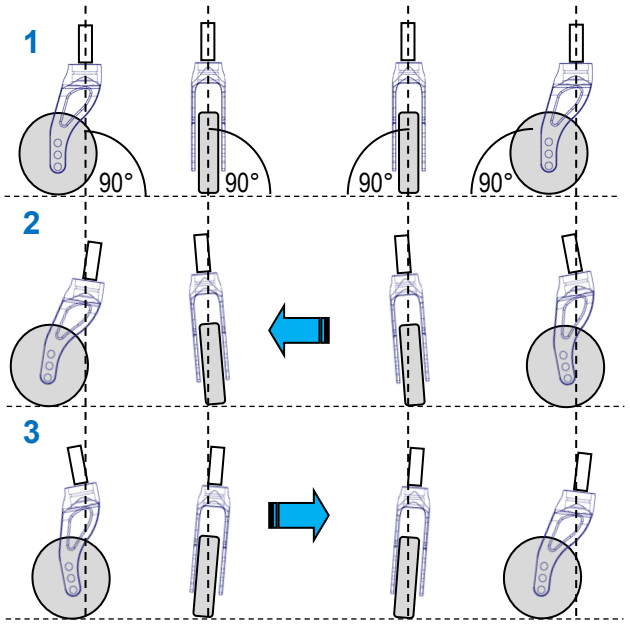
However, before working on the fork angle adjustment, check all the points above mentioned.

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.

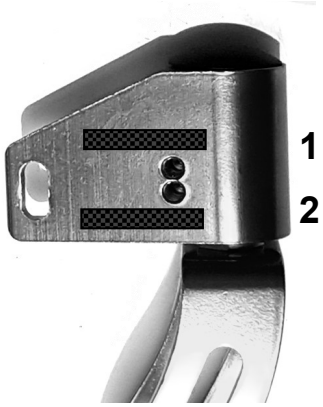
If both forks axis are correct but the wheelchair still turns right or left, it means that the latitudinal angle is not perfect.

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.

Since the “hexagon system” 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.



Plastic strapping

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

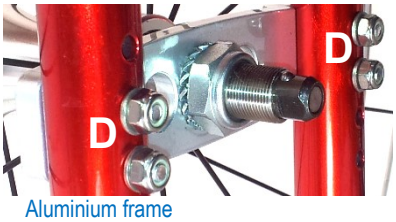
REAR HEIGHT ADJUSTMENT

Standard rear frame

Adjustment every 1.5 cm
You can adjust the rear height by moving the rear wheel plate **A** with respect to the frame **B**.
Remove the 4 bolts **C** and nuts **D** and remove the plate **A**.
Position the plate **A** at a different height and fix it using the pre-drilled holes on the frame.
If case of titanium frame, the assembly has an extra counter plate **E** on each side of the plate.
That is necessary to avoid squeezing the tubes (titanium tubes that are thinner then aluminium's).

1 If the wheelchair is equipped with supports for accessories, the adjustment is the same.
If, when possible and wished, you move the support along with the rear wheel plate, you can use the same bolts.
On the other hand, you may need different, in length and type, bolts.
It the picture, for instance, the bolt 1 fixes only the plate to the frame, the bolt 2 fixes the plate and the support, whereas the bolt 3 fixes only the support.
If you need to lower the rear height, it is necessary to remove the mudguard (if present) before putting the rear wheel on. In fact, the tyre will touch the mudguard.
After adjustment, adjust the mudguard and the brake, too.

2 In some cases, when the requested rear height is particularly high, the wheelchair is provided with a shaped rear wheel plate (right and left only black colour) that allows for higher heights than the regular plate.
The adjustment is the same.



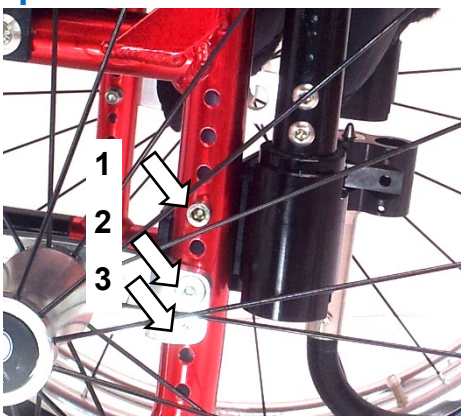
Aluminium frame

Titanium frame

3 Also with the extended rear wheel plate, the adjustment is the same.

Remember that the rear height affects the seat inclination, thus, it is necessary to check and adjust the front fork angle.

1



Rear wheel plate plus support for accessories

2

Shaped rear wheel plate for higher rear heights

3

Extended rear wheel plate for very prudential setting

REAR HEIGHT AND SETTING ADJUSTMENT

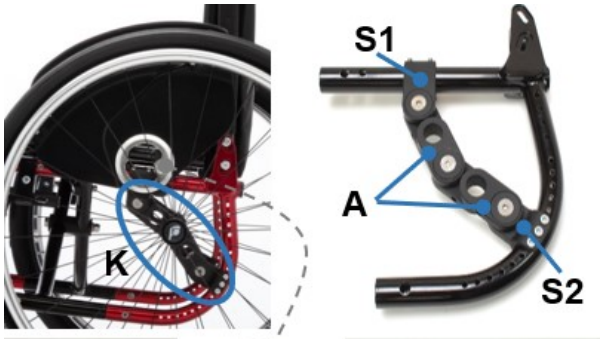
Dynamic rear frame (until september 2019)

The rear wheel plate **K** is made of two arms **A** fixed, with a joint system, to each other and to the supports **S1** and **S2** that, on their turn, are fixed to the frame.

Before starting the adjustment, it is very useful to consult the chart at the bottom of this instruction. In fact, that chart indicates where and how the parts according to the rear height, setting and rear wheels size.

Before proceeding, we suggest your removing the mudguard (if present).

To remove the mudguard, loosen the two headless bolts and screw off the two bolts. The two parts of the support are now detached and you can remove the mudguard with its support. (In the picture aside, with the only purpose to better show the parts, the mudguard is not present).



Adjustment by moving the receiver.

You can fix the receiver **B** both in one of the two "free hole", **F1** and **F2**, of the arms **A** and in one of the three joints, **J1**, **J2** and **J3** ("joint hole").

Through the "free holes", **F1** and **F2,** insert the receiver **B** and fix it with the nut **D1** and washer **R1**.

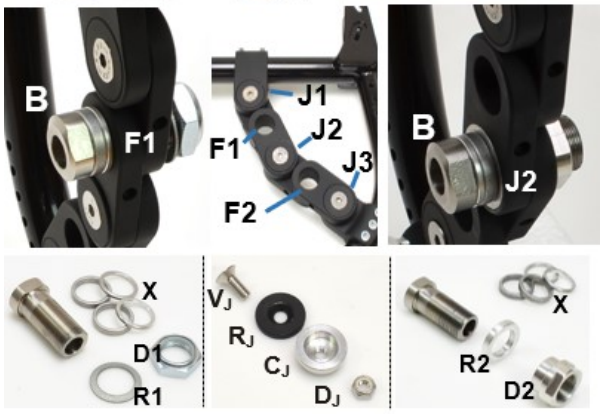
Through the "joint holes" **J1**, **J2** and **J3**, the assembly has the adaptation washer **R2** and the M20 threaded made-to-measure counter buckle **D2**.

Then you can insert the receiver **B**, screw it on **D2**, and fix it.

In case of cambered wheels, you have to adjust the convergence through the independent receivers.

You can use the spacers **X** if you need to have the rear wheel more external.

The assembly of the joints **J** has the bolt V_J, the made to measure washer R_J, the M8 threaded made-to-measure counter buckle C_J and the nut D_J.



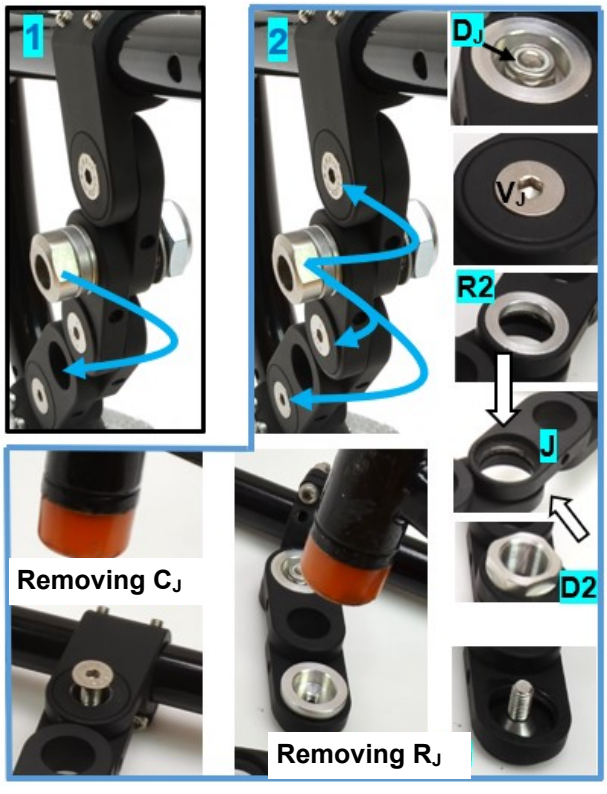
1 If you move the receiver **B** from one "free hole" to the other "free hole", you can use the same parts and the joints **J** are not involved.

2 If you move the receiver **B** from one of the "free holes" to one "joint hole", you first need to remove the nut D_J, then the bolt V_J and finally R_J, C_J off the joint **J**.

Now insert **R2** and **D2** into the joint, then insert the receiver and fix it.

In case the counter buckle C_J is hard to remove, slightly screw the bolt V_J and gently hit it with a hammer.

Should the washer R_J be hard to remove, separate the two arms **A**, insert C_J and hit it with a hammer a few times. When C_J reach the full stroke but R_J does not come out yet, lean the head of V_J on it and hit it with hammer.



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REAR HEIGHT AND SETTING ADJUSTMENT

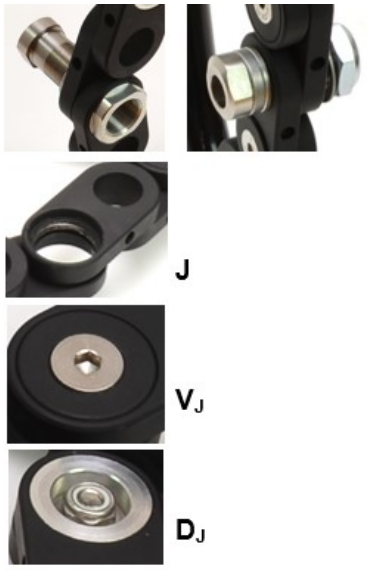
Dynamic rear frame (until september 2019)

3 If you move the receiver **B** from one of the three "joint holes" to a "free hole", remove the receiver and fix the joint **J** positioning R_J and C_J first, then screw the bolt V_J and finally screw the nut D_J while holding the bolt.

To fix the receiver, insert it through the "free hole" and fix it with **D1** and **R1**.

4 If you move the receiver **B** from a "joint hole" to another "joint hole", remove the receiver and all its parts. Then remove all parts that fix the joint **J** (see instructions of point 2) where you decide to assemble the receiver.

Use the same parts to fix the joint and the receiver to the new points (see instructions of points 2 and 3).



Adjustment by moving the plate

You can adjust the rear wheel position by moving the plate **K** by means of the joints **J** and the supports **S1** and **S2**.

First, loosen the nut D_J and then the bolt V_J of each joint. If the receiver **B** is fixed to a joint, loosen the receiver.

Loosen the two headless bolts G_{S1}, the two bolts V_{S1} and nuts D_{S1} of the support **S1**.

It now already possible to slide the support **S1** along the frame. This way the arms **A** will turn and determine new positions for the rear wheel.

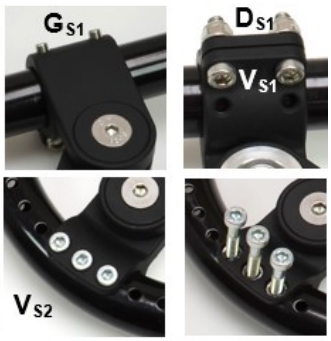
After removing the three bolts V_{S2}, you can move the support **S2** and fix it in any of the predetermined positions given by the 5 mm pre-drilled holes **H** on the curved part of the frame.

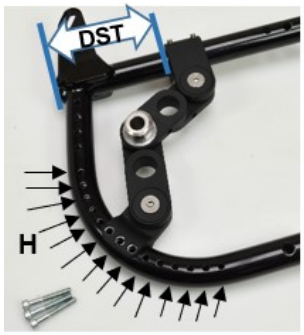
Now, all the system is free to move and you can adjust it, by moving both supports and both arms.

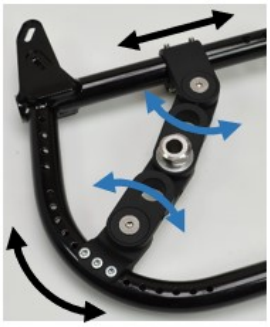
Once you reach the desired position, fix first the support **S2** and then **S1**. Finally the joints **J.**

To adjust the other side in the same position, fix **S2** using the same holes and **S1** at the same distance **DST** from the rear side of the frame.

The last three pictures show three examples. Note that the supports **S1** and **S2** of the picture in the middle and at right are in the same positions, but the arms are differently orientated.







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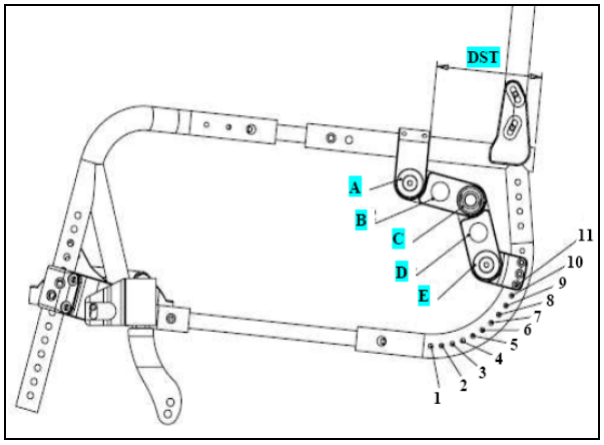
REAR HEIGHT AND SETTING ADJUSTMENT

Dynamic rear frame (first version)



A,B,C,D,E :..... the 5 possible positions for the rear wheel receiver on the rear wheel plate

1.....11 :..... the holes where to fix the lower support on the frame

SETT :..... the settings PRUDENTIAL, STANDARD and ACTIVE are determined with a distance "**L**" between rear wheel axle and backrest axle of approx. 45, 70 e 95 mm respectively.

DST :..... The distance (in mm) between the rear side of the frame and the upper support

OR : ..... the orientation of the rear wheel plate, that is the position on the central joint (that is also the possible receiver position C):

>I = middle joint towards the back;

<I = middle joint towards the front;

<> = indifferent

PSI : ..... Position of the lower support – the number in the chart is to be aligned with the lower hole of the three of the support, the other two come consequently.

BOC :..... the letter in the chart indicates what position the receiver has to be fixed in the rear wheel plate.

Dynamic rear frame – rear height adjustment chart

WHEEL 24"	PRUDENTIAL L= 45mm				STANDARD L= 70mm				ACTIVE L= 95mm				WHEEL 22"
	OR	DST	PSI	BOC	OR	DST	PSI	BOC	OR	DST	PSI	BOC	
38	---	---	---	---	<>	77	5	A	<>	100	4	A	35.5
38.5	<>	52	2	A		75	5			100	5		36
39		55	2			110	11	B	>I	132	11	B	36.5
39.5	>I	116	11	C		109	9			132	10		37
40		118	11			106	8			126	7		37.5
40.5		114	10			136	11	C		124	6		38
41		114	9			99	4	B		118	1		38.5
41.5		109	8			135	10	C		118	1		39
42		106	7		>I	132	9		<I	96	6		39.5
42.5		101	6			125	7			143	11	C	40
43		99	5			127	7		---	---	---	---	40.5
43.5		93	4			120	5			135	9	C	41
44		89	3			112	2		<I	60	1		41.5
44.5		78	2			106	1			124	7		42
45		119	8	D		108	1			82	7		42.5
45.5		115	8			70	10	D		95	9		43
46		111	7		<I	100	11			91	10		43.5
46.5	>I	90	5			70	8		---	---	---	---	44
47		88	5			100	8		---	---	---	---	44.5
47.5		70	4		>I	115	3		<I	132	1	D	45
48		60	3			106	2			115	1		45.5
48.5		55	3		<I	78	1			110	2		46
49		100	7	E	---	---	---	---	---	---	---	---	46.5
49.5	<>	70	6		---	---	---	---	---	---	---	---	47
50		105	6		---	---	---	---	---	---	---	---	47.5
50.5		105	5		<>	105	3	E	---	---	---	---	48
51	---	---	---	---		110	3		<>	117	1	E	48.5
51.5	---	---	---	---	---	---	---	---		115	1		49

Notes: all combinations are worked out considering a seat inclination equal to 4 cm on a seat depth 40 cm (which is like 3 on 30 and 3.5 on 35) and with standard high pressure tyres. **The rear height may result quite different if** the inclination of the seat is very different from that used as reference (*especially with active setting*). In fact, the rear height reported in the chart is proportionally affected by the seat inclination difference, more inclination = lower rear height

For 1 cm of inclination, such change is approximately: 1 mm with PRUDENTIAL setting; 2 mm with STANDARD setting; 2,5 mm with ACTIVE setting.

Example: rear height 43 cm with active setting and seat inclination 8 cm on seat depth 40cm (4 cm more than reference), result 43 - (4 x 0,25) = 42 cm;
but with flat seat (4cm less than reference), result 43 + (4 x 0,25) = 44cm.

The configuration of the rear wheel plate to follow will therefore be that on the row with height 44 (44 -1=43) in the first case, while, in the second case it will be that with height 42 (42 + 1 = 43).

You can obtain quite a few combinations *height / setting / rear wheel* with different rear wheel plate positioning; this chart, for simplicity, reports only one.

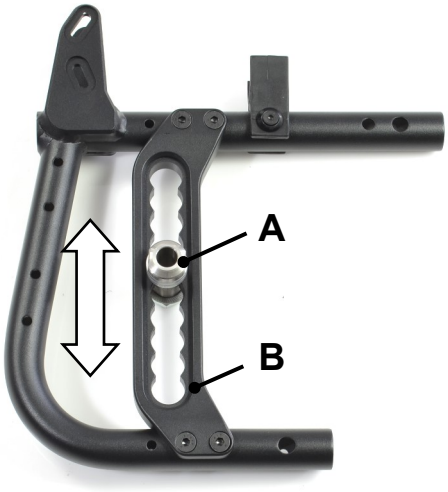
On the other hand, many more configurations with other settings are possible; this chart reports the three most common settings.

If necessary, contact Rehateam s.r.l. for technical help.

REAR HEIGHT ADJUSTMENT

Dynamic 2.0 rear frame

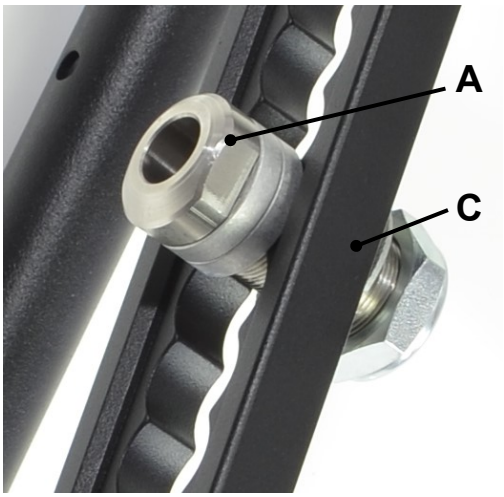
Adjustment every 1,5 cm



You can adjust the rear height by changing the position of the receiver **A** on the plate **B**.

Screw off the nut **C** ,remove the receiver and insert it in another hole.

Pay attention to the position of the toothed washer **D** and to the spacers **E** (if any).



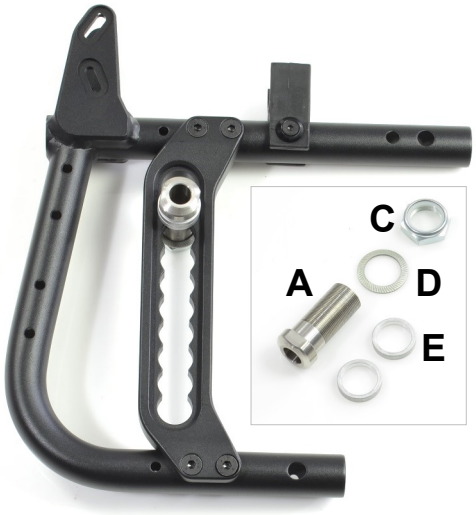
Securely fix the receiver.

If you lower the rear height, then you have to remove the mudguard (if present) before inserting the rear wheel; in fact, the wheel will touch the mudguard.

After adjustment, adjust the mudguard and the brake, too.

Remember that the rear height affects the seat inclination, thus, it is necessary to check and adjust the front fork angle.

Should the receiver be with camber, make sue to adjust the convergency — see chapter “camber”.



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

SETTING ADJUSTMENT (point of balance)

Standard rear frame

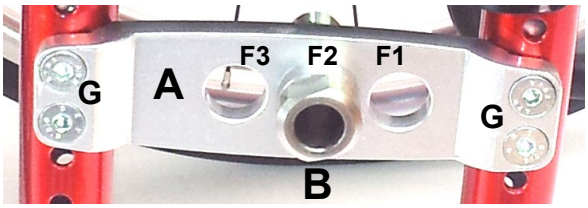
You can adjust the setting by changing the position of the receiver **B** with respect to the plate **A**, but also by turning the plate.

To carry out the adjustment, simply remove the receiver **B** and its parts (nut **D**, washer **C** and, if present, spacers **E**) and fix it to the new position.

You can use the spacers **E** in case you need to have the rear wheel more external.

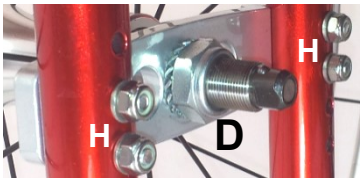
In the picture 1, the settings are:

F1 = Prudential (35 mm) ; **F2** = Standard (60 mm) ; **F3** = Active (85 mm) .



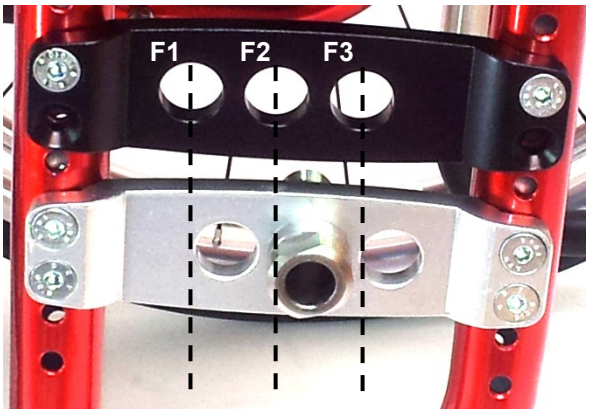
Even if the holes **F** of the plate are 3, the possible settings are 6. In fact, the 3 holes are not centred with respect to the plate, thus, if you turn the plate by 180°, the position of the holes with respect to the frame, change.

To turn the plate, remove the 4 bolts **G** and nuts and washers **H** and fix it to the reverse position.



In the picture showing and comparing the two plates, you can see the black one “180° turned”. Consequently, the 3 holes are now approximately 1 cm ahead.

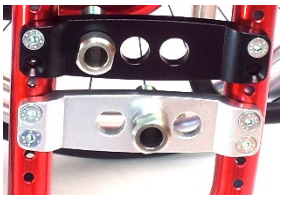
Therefore, the settings change and, in fact, **F1** = Extreme (100 mm) (in picture 1, F1 was Prudential).



In both small pictures, the receiver is fixed through **F1** of the black plate, but the plate is differently fixed to the frame. At left, the setting is Prudential, at right it is Extreme.

In case of cambered wheels, you will see washers between the plate and the frame, such washers are necessary to tilt the plate and, thus, to give the camber. In that case, to keep the camber, you have to assemble the washers in the same way.

If case of titanium frame, the assembly has an extra counter plate on each side of the plate. That is necessary to avoid squeezing the tubes (titanium tubes that are thinner than aluminium’s).



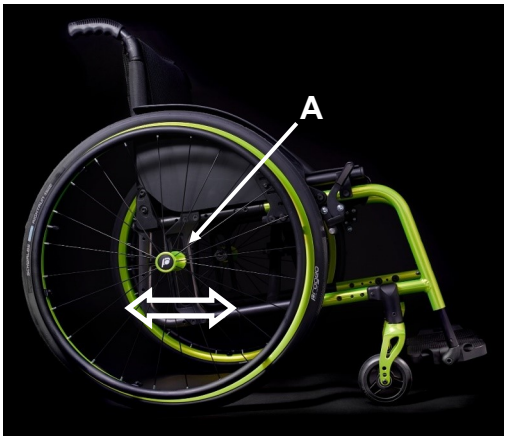
After changing the setting, adjust the mudguard and brake. Also, check and adjust the front fork angle.

In some cases, when the requested rear height is particularly high, the wheelchair is provided with a shaped rear wheel plate (right and left only black colour) that allows for higher heights than the regular plate. The adjustment is the same.

The extended rear wheel plate (only black colour), allows for 4 settings between prudential and Extreme and 2 Extremely Prudential (behind the backrest axis).

SETTING ADJUSTMENT (point of balance)

Dynamic 2.0 rear frame



You can adjust the setting (point of balance) by moving the rear wheel plate **A** along the frame.

There are three pre-drilled holes (1 2 3) on the frame , therefore, two positions.

The rear wheel plate can be assembled facing either frontward or rearward.

The possible setting, thus, are 4: **prudential, standard, aactive, extreme**.

Interval 20 mm.

PRUDENTIAL (35 mm)

STANDARD (55 mm)

ACTIVE (75 mm)

EXTREME (95 mm)

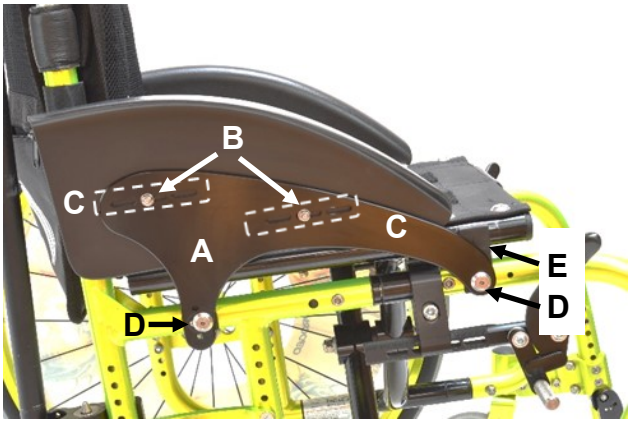
After changing the setting, adjust the mudguard and brake.

Also, check and adjust the front fork angle.

SIDE GUARD

Standard rear frame

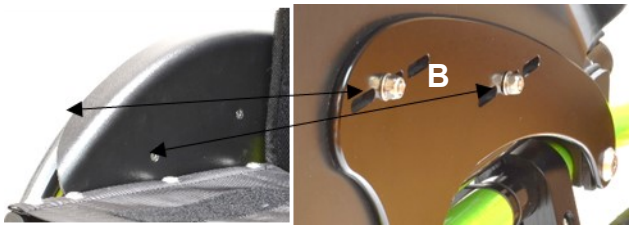
After each adjustment of the rear wheel, you have to adjust the position of the side guard accordingly.
You should adjust the side guard at approximately 5 mm from the tyre.
It is fixed with the bolts **B** to the aluminium support **A** that has two series of slots **C**.
The support **A** is fixed to the frame in two points with the bolts **D** that also fix the crossbar tube supports **E**.
Every 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 range of adaptation.
Note: if the side guard is straight, you can decide to modify it or not.

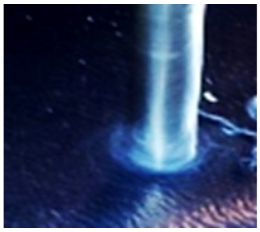


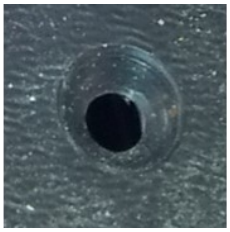
A

When you decrease the rear height, you have to move the side guard up.

1. After adjusting the rear height, remove bolt/washer/nut **B** and remove the side guard.
2. Insert the rear wheel. Position the side guard at approximately 5 mm from the tyre and parallel to it.
3. Holding the side guard at 5 mm from the tyre, mark the points where you will have to drill the two new holes.
4. To do so, use a pointed tool and let it through the slot **C** of the plate. It is advisable to mark it in the middle of the slot. If the rear height adjustment is remarkable, you may need a new side guard.
5. Drill a 5 mm hole on the mud guard where just marked.
6. Countersink the hole
7. Insert bolts/washers/nuts **B** and screw without tightening.
8. Insert the rear wheel and d position the side guard.
9. Tighten the bolts/washers/nuts **B .**







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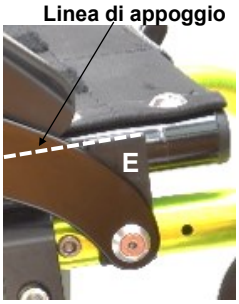
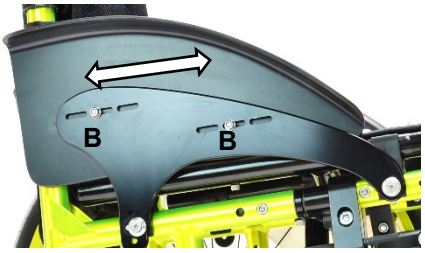
SIDE GUARD

Standard and Dynamic 2.0 rear frame

B – When you increase the rear height, you have to move the side guard down.

1. After adjusting the rear height, remove bolts/washers/nuts **B** and remove the side guard.
2. Insert the rear wheel and position the side guard until leaning it on the support **E**.
3. The line of the mudguard has to be parallel to the tyre.
4. Measure the distance **X** between the tyre and the lower side of the mudguard's edge as showed in the picture.
5. Mark a line parallel to the bottom side of the side guard at a distance equal to the measure you have just taken minus 5 mm (example: if the measure **X** is 30 mm, 30 – 5 = 25 mm).
6. Cut the side guard along that line, round the corners and round off the edges with a scissors or with fine sand paper.
7. Position the side guard to approximately 5 mm from the tyre and parallel to it.
8. Continue following the instruction from points 5 to 10 of adjustment **A**.



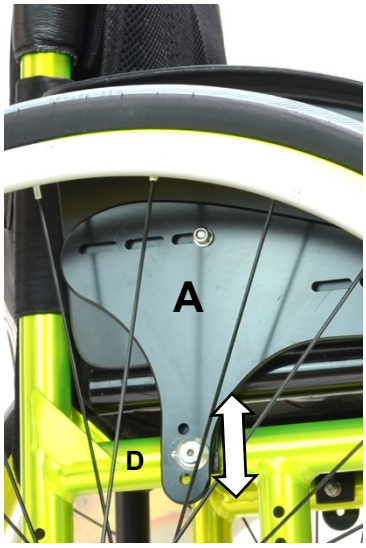


C – When you change the setting, you have to move the side guard frontward or backward according to the new position of the rear wheel, but the height of the side guard remains the same.

1. After adjusting the setting, loosen bolts/washers/nuts **B4** (possible even with the wheel on)
2. Slide the side guard along the slots **C** until the correct position.
3. If the adjustment is not enough, remove bolts/washers/nuts **D** and fix the side guard using another series of slots.
4. Adjust the brake.

D – When you change both the rear height and the setting, you have to move the side guard up/down **and** forward/backward. Proceed as explained for adjustment **A.**

The aluminium support **A** has 3 positions for its rear-fixing (bolt **D**).
In order to height adjust the side guard; you can also work on this point.
When you remove the bolt/washer/nut **D**, you will see that the hole is actually a slot; therefore, if you change the position, you will have to make the slot out of the new hole.



SIDE GUARD

Rotative system

After any adjustment of the rear wheel, you will have to adjust the position of the side guard accordingly.
You should adjust the side guard at approximately 5 mm from the tyre.
You can adjust the side guard in height and depth.
The side guard is fixed through an eccentric ring that, in its turn, is fixed through the bolt **A** through the support **S**.
To carry out the adjustment, proceed as follows.

Insert the rear wheel and, if there is no interference with sideguard, you keep it on. On the other hand, remove the wheel and proceed.

The system consists of the rotation of two components.
A rotation of the whole system (side guard and ring fixed together);
B rotation of the side guard on the ring.
The combination of these two rotations allows for the adjustment.

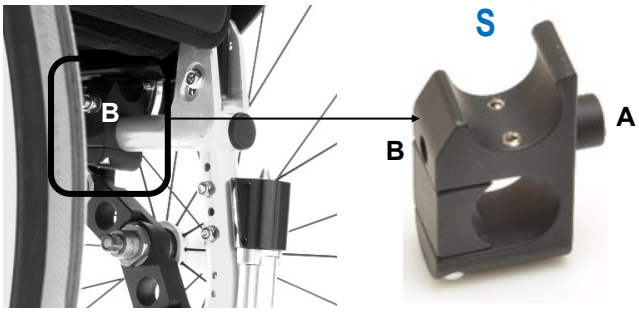
A

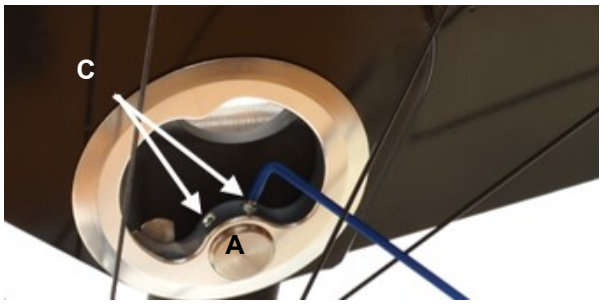
ROTATION OF THE WHOLE SYSTEM

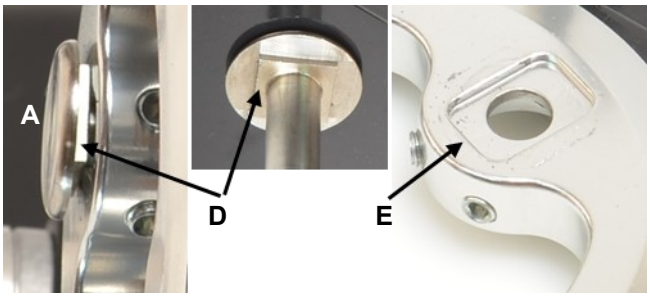
Loosen the nut **B** that is located in the inner side of the frame and the headless bolts **C**. That will allow for the rotation of the whole system pivoting it on the bolt **A** (in this phase, the ring and the side guard are still fixed to one another).

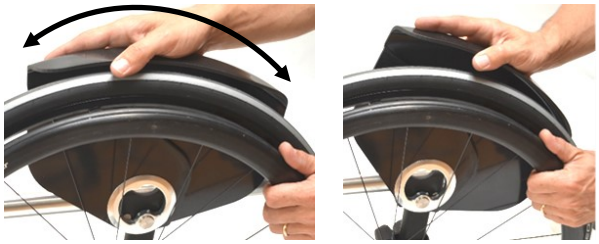
To rotate the whole system, just take hold of the side guard with one hand and rotate it clock/anticlockwise.

Note: if you loosen the nut **B** too much, it may happen that the bolt **A** moves as far as to have its square neck **D** off its corresponding bed **E** on the ring. Therefore, when you screw the bolt **A**, pay attention this bolt is correctly inserted in the ring, otherwise it will not be possible to tighten the nut **B** and, consequently, the whole system.









It is advisable to pread a drop of mild lock thread glue on the grab screws **C** and **G** and on the bolt **F**.

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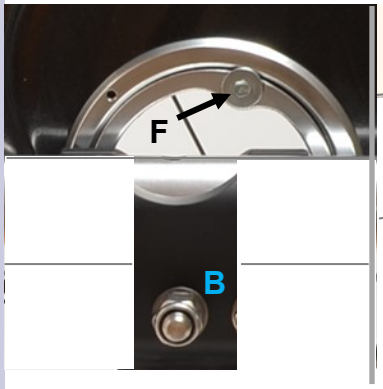
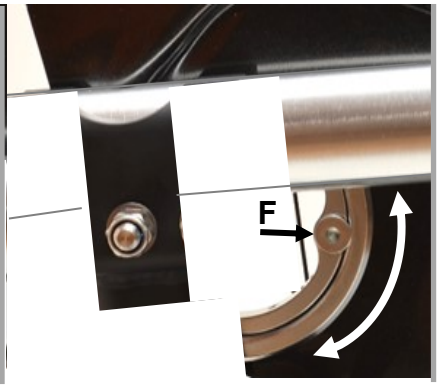
SIDE GUARD

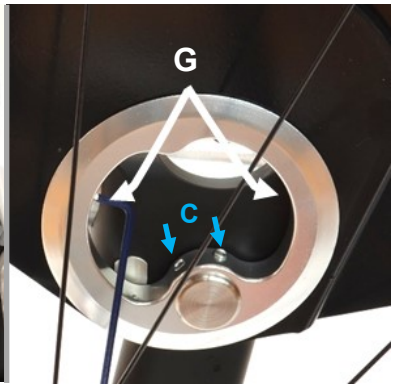
Rotative system

B

ROTATION OF THE SIDE GUARD ON THE RING







Loosen the nut **B**, the bolt **F** and the grab screws **G**. That will allow rotating the side guard pivoting it on the ring. To rotate the side guard, hold the ring with one hand and turn the side guard with the other hand.

If the bolt **F** is not accessible, loosen the two grab screws **C** and turn the whole system (as explained in the paragraph **A**) until this bolt becomes accessible. To do so, slide the wheel off be 3 cm approximately to avoid the interference, or remove it.

C

POSITIONING THE SIDE GUARD

Remove the rear wheel and, working on two rotations above mentioned, take it to its maximum height and put the wheel back on.

Now, working again on the two rotations, position the side guard at approximately 5 mm from the tyre.

It is advisable to pread a drop of mild lock thread glue on the grab screws **C** and **G** and on the bolt **F**.

SIDE GUARD

Rotative system

D

FIXING THE WHOLE SYSTEM

Tighten the bolt **F** and the two grab screws **G** - see also **B** *(ROTATION OF THE SIDE GUARD ON THE RING)*

If the bolt **F** is not accessible after you positioned side guard, tighten the two headless bolts **G**, then, taking care of not letting the side guard turn on the ring, rotate the whole system clock/anticlock wise until you will be able to get access to the bolt and tighten it.

If necessary, slide the wheel off by 3 cm to allow the side guard passing.

Note: the bolt **F** may be "hidden" just by the seat tube of the crossbar, in such case, fold the crossbar as much as necessary.

Turn the whole system back to the correct position.

Tighten the nut **B** hard while holding, checking and, if necessary, correcting the position of the side guard that may move. Finally, tighten the headless bolts **C**.

See also **A** *(ROTATION OF THE WHOLE SYSTEM)*

Before tightening the nut, open the seat and let it lock to the four supports. Two of such supports are integrated to the side guard support. Make sure to position/hold the support, thus the side guard, perpendicular to the ground.

NOTES

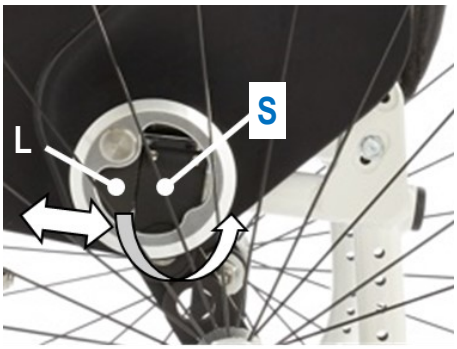
These kind of side guards (plastic or carbon fibre) allows for 5-6 cm range of adjustment. Therefore, it may be necessary to change the side guards with smaller or larger ones.

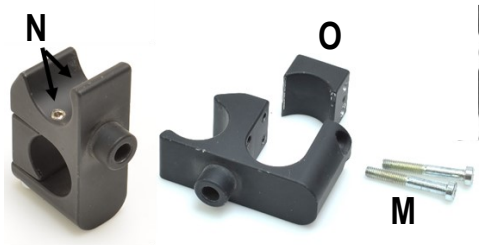
The height **H.** can be: 21 cm (mini);
25 cm (small);
28 cm (large).

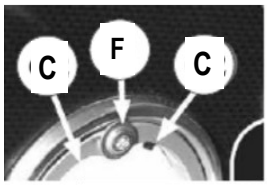
If the position of the side guard is not satisfactory, you can also work on the sliding support **S** that you can assemble in front or behind the rear wheel plate upper support **L**.

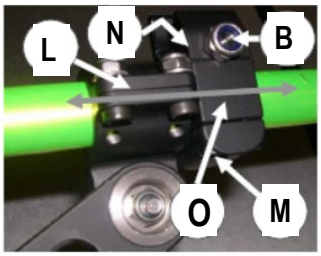
To slide the support **S** just loosen the two bolts **M** and the two grab screws **N** present on the upper side of the support (you have to fold the crossbar to get access to them). To move it in front or behind the support , remove the two bolts **M** (by doing so, you can remove the block **O**), remove the support **S** and fix it to the new position.

Once you find a suitable position, insert the block **O**, tighten the bolts **M** and the two grab screws **N**.









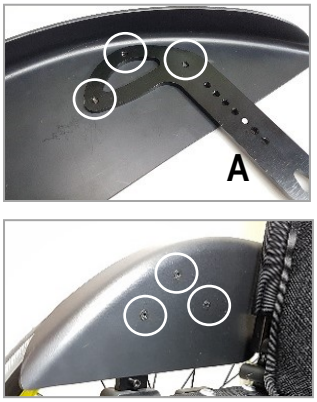
It is advisable to pread a drop of mild lock thread glue on the grab screws **C** and **G** and on the bolt **F**.

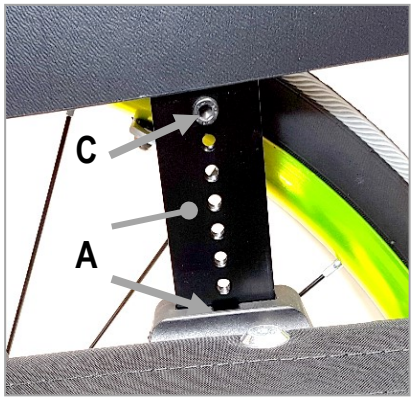
Follows next page

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.

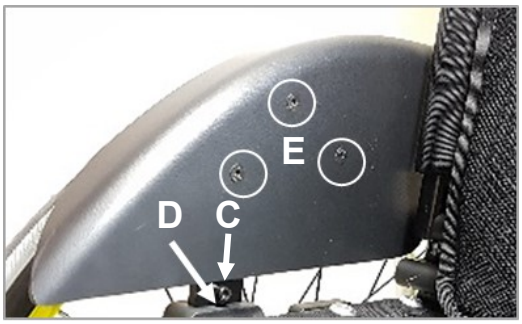


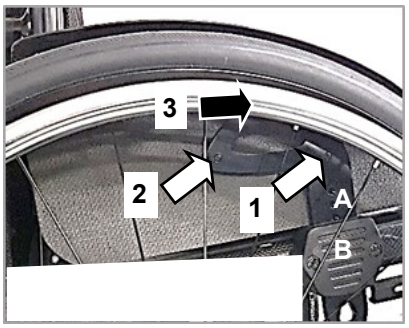


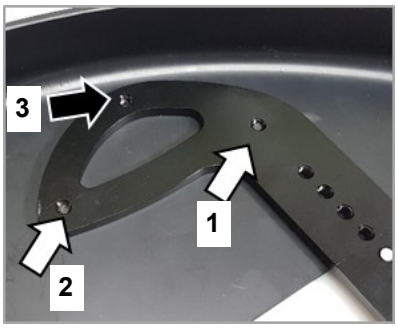
Height adjustment: the blade **A** shows, in its vertical side, a series of holes to fix the bolt **C** that inserts in the hollow **D** of the support **B**. Therefore, to change the height, just remove the bolt **C** and screw it in another hole.
WARNING: do not tighten the bolt **C** excessively: 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 pread a drop of mild lock thread glue on the bolts **E** and **C**.

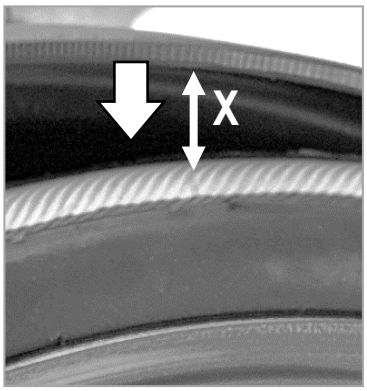
Follows next page

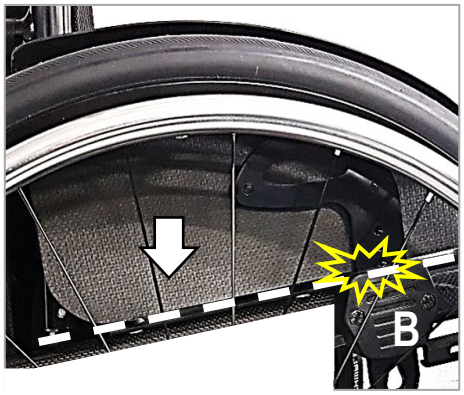
SIDE GUARD

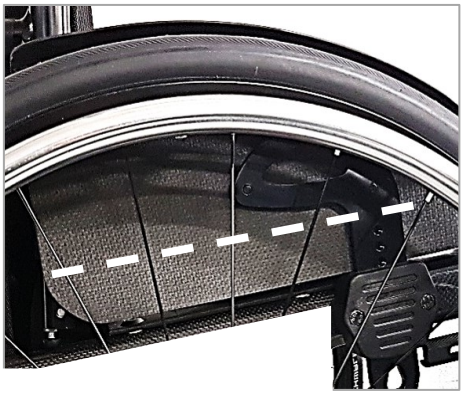
Removable with blade system

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

Standard rear frame

The camber on the model Exelle/Exelle Vario standard frame is given by the inclination of the rear wheel plate **b** with respect to the frame **A**.

3° 1.5° 0°

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

Picture 1 shows that the plate **B** is perfectly aligned with the frame tube, thus, there is no camber (0°).

No washer is present.

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

If case of **titanium frame**, the assembly has an extra counter plate **E** on each side of the plate. That is necessary to avoid squeezing the tubes (titanium tubes that are thinner then aluminium's).

To have a 1.5° camber, you need, for each side of the wheelchair, 2 pieces of 0.5 mm washers between the plate **B** and the frame **A**, positioned as shown here aside. With such camber, the convergence is within tolerance. However, should the seat inclination be remarkable, you may add one 0.5 mm washer on the rear fixing points of the plate.

To have a 3° camber, adjusting the convergence, too, you need, for each side of the wheelchair, 6 pieces of 0.5 mm washers between the plate **B** and the frame **A**, positioned as shown here aside.

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

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

The maximum camber allowed is 3°; therefore, it is not permitted to add more washers than what above mentioned.

In presence of supports for accessories, the adjustment is the same.

With the extended rear wheel plate and with the shaped rear wheel plate, the adjustment is the same but you have to use 1.5 mm washer due to the distance between the fixing bolts is 3 cm instead of 1.5 cm.

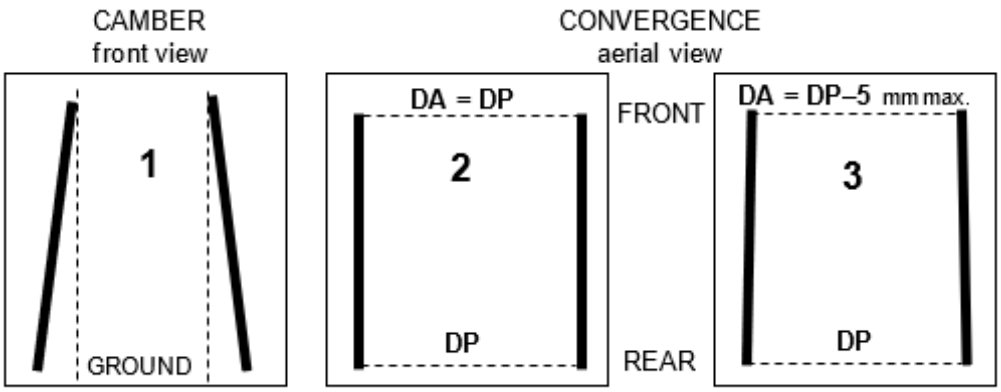
If you increase the camber, the rear wheel may get too close to the side guard or even interfere with it: in such case. It is necessary to add a spacer on the rear wheel receiver.

CAMBER

Dynamic rear frame (first version) and Dynamic 2.0

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.

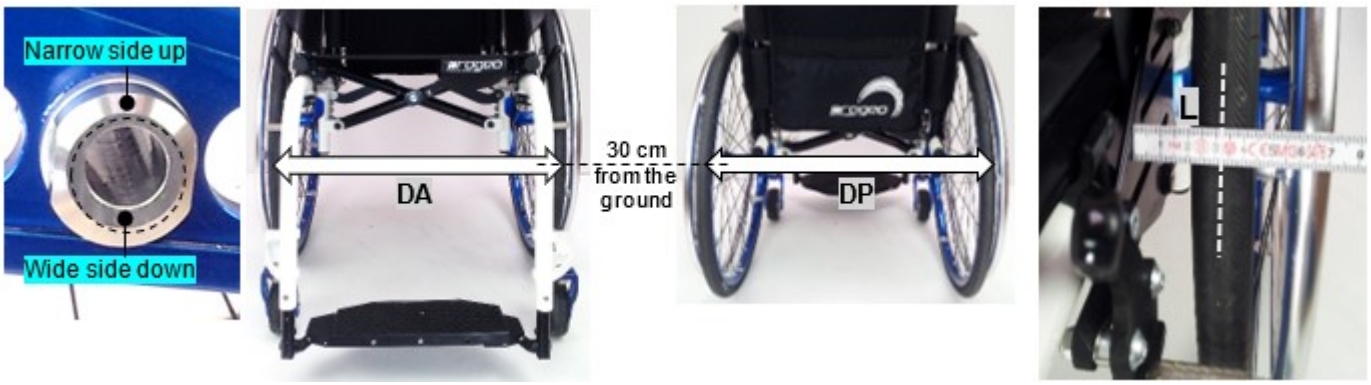
With cambered wheels, it is necessary to check/adjust the convergence, the distance between the two wheels in front and at rear.

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

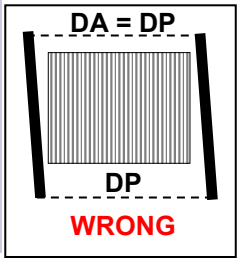


The hole of the cambered receiver, since it is inclined, is not centred.

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 27.5 cm from the floor with 22” wheels or 30 cm with 24” wheels, 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.

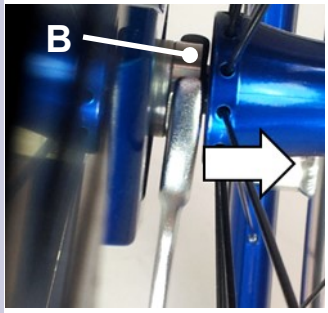
Therefore, it is necessary to take the measurement **L**, on both sides of the wheelchair, from a fixed point of the frame (or of a support fixed to it) to the centre of the tyre.

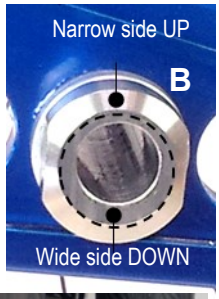
Follows next page

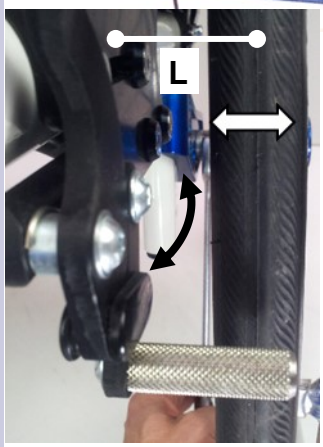
CAMBER

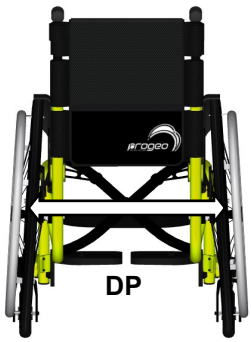
Dynamic rear frame (first version) and Dinamic 2.0

DYNAMIC (first version)

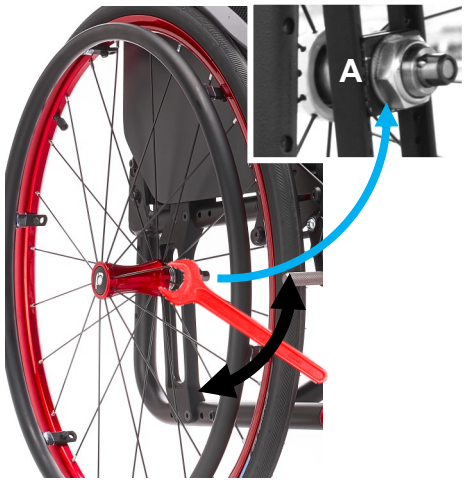








DYNAMIC 2.0



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**.

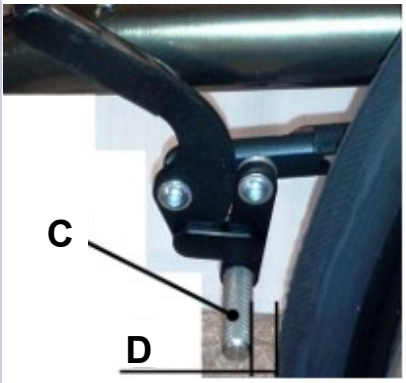
Example 1: **DA** 8 mm wider than **DP** (the wheelchair will not be very fluent), we have to decrease the **DA** by 4 mm, in fact, by doing so, we will also increase the **DP** by 4 mm; one deduces that the adjustment for each wheel is 2 mm.
At this stage, **DA** and **DP** will be the same.

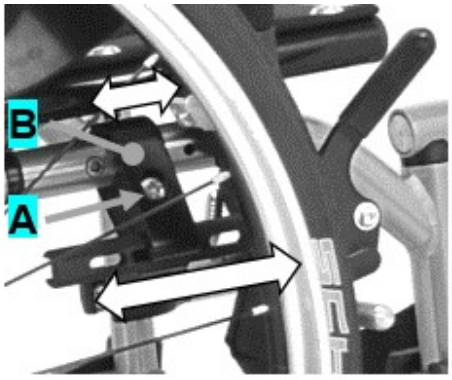
Example 2: **DA** 6 mm narrower than **DP** and distance **L** right 2 mm wider than **L** left.
We have to increase **DA** by 3 mm but we also have to equal the distances **L**.
We thus increase the distance **L** left by 2 mm.
By doing so, we have also increased **DA** by 4 mm, therefore, the difference **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).

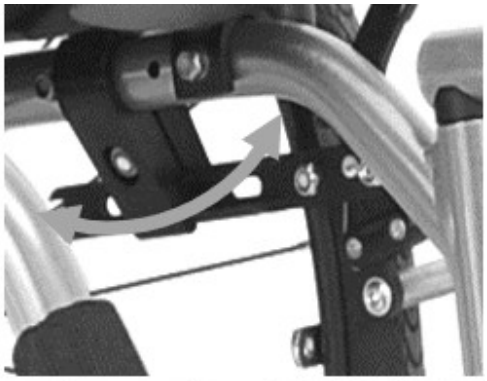
After adjustment, tighten the nut **D** hard while holding the receiver **B**. It is not necessary to remove the wheel, but move it away just enough to make the receiver accessible.

BRAKE WITH CLAMP

YOU HAVE TO ADJUST THE BRAKE WHEN THE WHEELS ARE PROPERLY INFLATED (except solid tyre)







Loosen the bolt **A** of the clamp **B**.

If the bolt **A** is too hard to unscrew, it is advisable to spread some lubricant oil on it or heat it with a hot air blower.

Now you can slide the brake frontward/backward through the clamp and/or the clamp along the frame. At the same time, you can turn the clamp on the frame and the brake on the clamp.

Position the brake-knurled rod **C** 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.

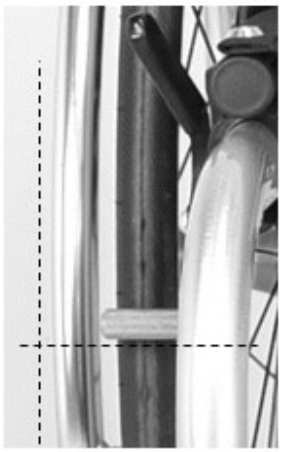
If necessary, repeat the same operation to reach the good adjustment.

A good adjustment has the brake not too hard to engage but braking, so you will have to find the suitable compromise.

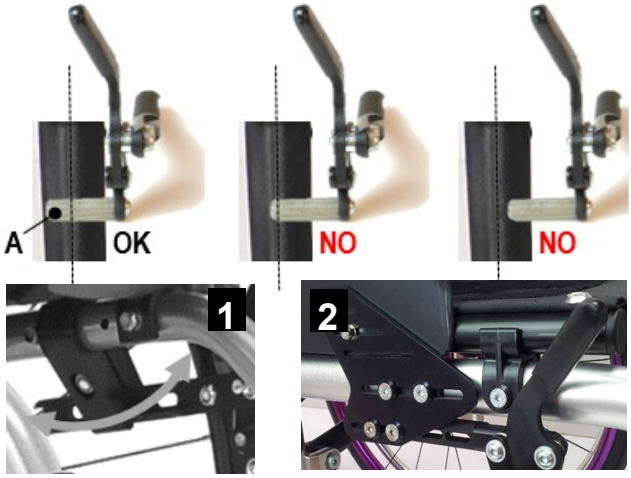
Once reached the correct position, tighten the bolt **A**.

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.



BRAKE SPACING

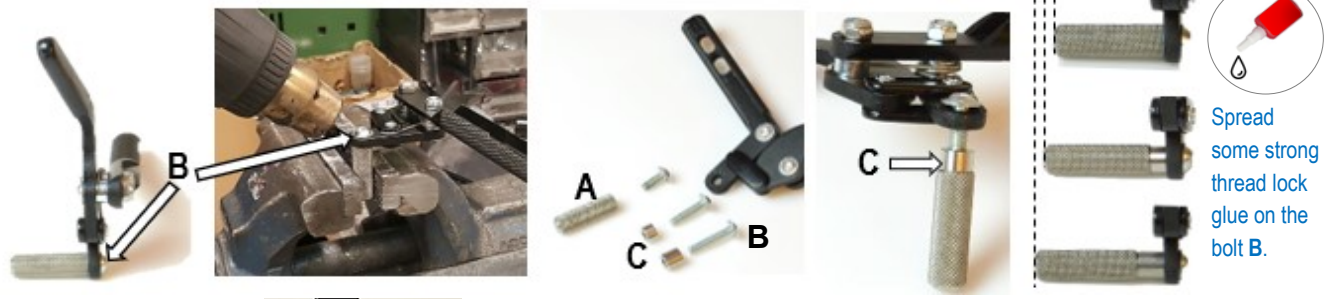


In several cases, the distance between the tyre and the frame can be such as to make need moving the knurled rod **P** more external.
When originally assembling the wheelchair, such possible modification is already taken into account.
In case of a post-sale modification that results in the rear wheels 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.

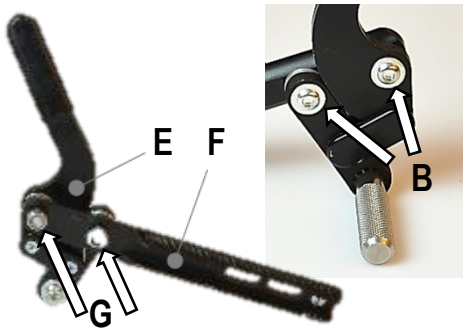
In all cases, check the brake efficiency.

1) If the brake is fixed with a clamp, you just have to turn the clamp to the new position;

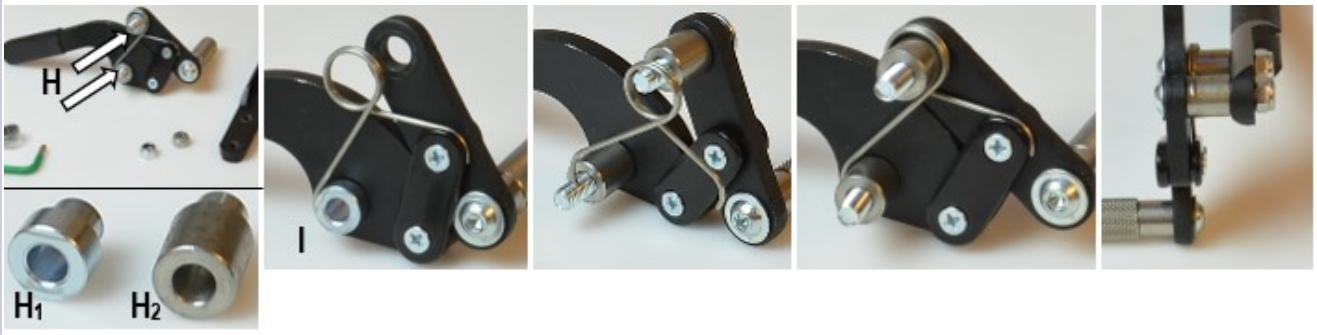
2) If the brake is fixed to the plate of support, you have to make the knurled rod longer by means of spacers.
Remove the bolt **B**. In order to remove it, put the knurled rod in a vice and heat it with a hot air blower because the bolt is locked with strong lock thread glue. DO NOT FORCE WHEN UNSCREWING 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 POSITIONING LEVER

For the model Exelle Junior, you can adjust the footplate distance by moving the footplate positioning lever **A** and fix it to the holes on the frame.
These same holes are designed to fix the clamp **B** of the fork support, too.
In some case, as you will see, the clamp is involved in the front height adjustment.

The positioning lever can be: “L-shaped” (from 2018) or “curved with three angles” (until 2018).

These levers allow for the assembly of both the split footplates and the one-piece flip-up aluminium footpalte.

“L-shaped” lever

Curve with three angles lever

Follows next page

FOOTPLATE POSITIONING LEVER

With "L-shape" footplate positioning lever (from 2018)

The lever **A** can be assembled in four orientations: high-front; high-rear; low-front; low.rear.

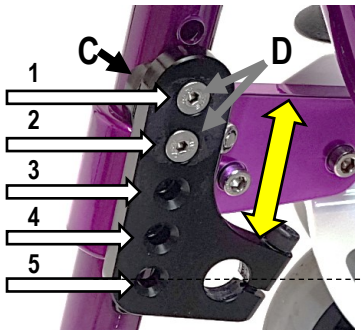
These positions are possible with the same support because it is ambidextrous.

However, when you change orientation, from front to rear and vice-versa, you may decide to remove the footrest plate or reverse the two supports.

The lever **A** is fixed wit the two bolts **D** and there is also a spacer **C**.

The possible heights without changing the fixing points on the frame are 4, regardless the lever's orientation.

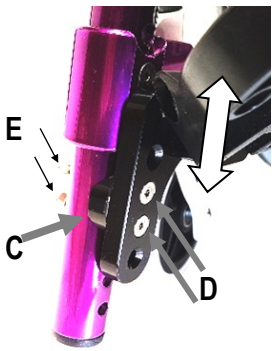
In the first picture aside, the lever is fixed low-rear with the bolts in position 1-2; in the other picture, it is fixed high-front with holes 4-5. the footplate fixing point is at the same height.

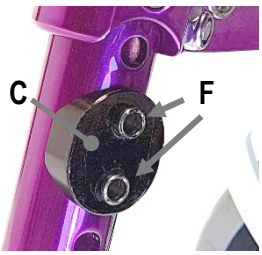


In both cases, you can move the lever three positions higher without changing the fixing points on the frame. Therefore, there is no skipped positions and the height adjustment with 1.5 cm intervals is always possible.

- Adjustment keeping the same fixing points on the frame

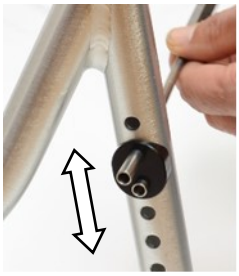
To change height and/or orientation, remove the two bolts/washers/nuts **D E** and remove the lever.
Leave the spacer **C** and the two spacing buckles **F** where they are.
Move the lever in a new height and/or orientation and fix it back with the two bolts/washers/nuts **D E**
If you change orientation, it is necessary to either reverse the levers (right to left and vice-versa) or remove the footplate. See also "angle adjustment" of either footplate.

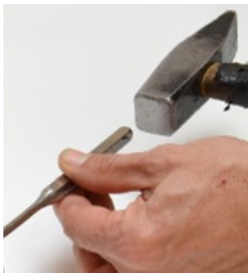




- Adjustment changing the fixing points on the frame

Remove the two bolts/washers/nuts **D E** and remove the unit lever/footplate
Remove the spacer **C** and the two spacing buckles **F**.
To remove the spacing buckle **F** you may need to gently use a hammer and a pin punch.
Choose the new position on the frame and insert the spacing buckle **F** through each fixing point.
Position the spacer **C**, mount the lever and fix it with the bolts/washers/nuts **D E**.





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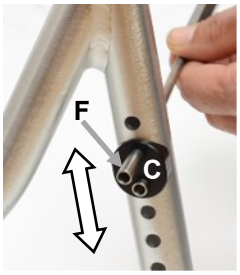
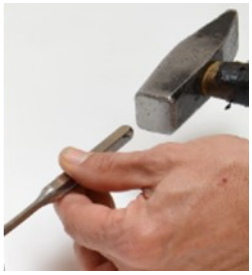
FOOTPLATE POSITIONING LEVER

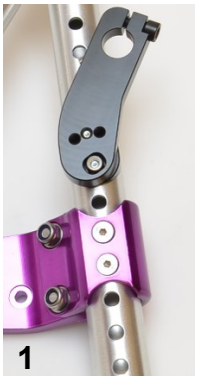
With curved three angles footplate positioning lever (unitl 2018)

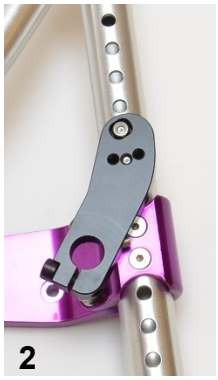
- Height adjustment along the frame

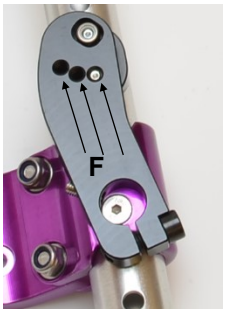
Remove the bolts/washers/nuts of the fixing points **D** and **E** and remove the unit lever/footplate.
Remove the spacer **C** and the two spacing buckles **F**.
To remove the spacing buckle **F** you may need to gently use a hammer and a pin punch.
Choose the new position on the frame and insert the spacing buckle **F** through each fixing point.
Position the spacer **C**, mount the lever and fix it with the bolts/washers/nuts **D E**.











- Orientation

The lever **A** can be assembled in four orientations: high-front; low-rear; low-front; high-rear.
In order to perform such operation, remove the two fixing points (you do not need to remove the spacing buckle **F** and the spacer **C** if you keep the same fixing points on the frame) and mount the lever opposite vertically.
However, by doing that, (as from 1 to 2 in the pictures), you also change the horizontal orientation.
To keep the horizontal orientation, (as from 1 to 3 or from 2 to 4), you need to exchange the two supports. The levers, in fact, are not ambidextrous.

- Inclination

Besides that possibility, you can fix the lever using any of the three holes **F**. This way you actually change the angle and you can get three different depths. To perform such adjustment, remove the bolt fixed through the hole **F** and loosen the other. Then, turn the support until aligning one of the two other holes **F.** Insert and fix the bolt you removed. Finally tighten the other bolt.

- Fixing through "common holes"

Differently from the "L-shaped" lever, this lever does not allow for 1.5 cm step adjustment independently from the position of the fork support.
In several cases, thus, the assembly of this lever occurs through one or both holes used to fix the fork support clamp. We can call such holes "common holes".


one common hole


one common hole


two common holes

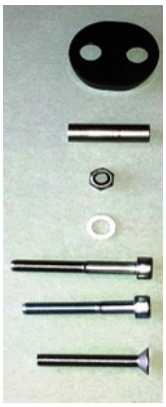
Follows next page

FOOTPLATE POSITIONING LEVER

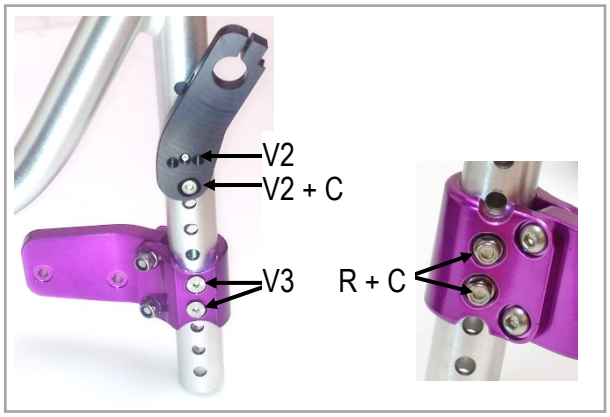
If the positioning lever is to be fixed to one or both common holes with the fork support clamp, remove the lever likewise above mentioned.
In the common holes, remove the bolt **V3,** then:

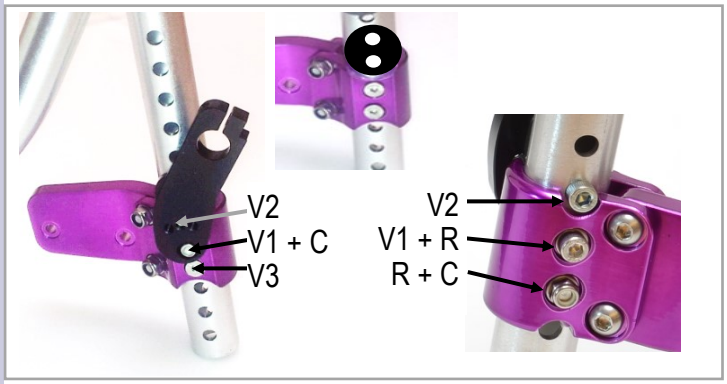
- if the lever is to be fixed through two common holes, then the spacer **L** is not needed because the lever will lean on the flat face of the clamp.
- if the lever is to be fixed through one common hole, position the spacer **L** just above or just below the clamp (according to the necessary adjustment) and fix the parts.

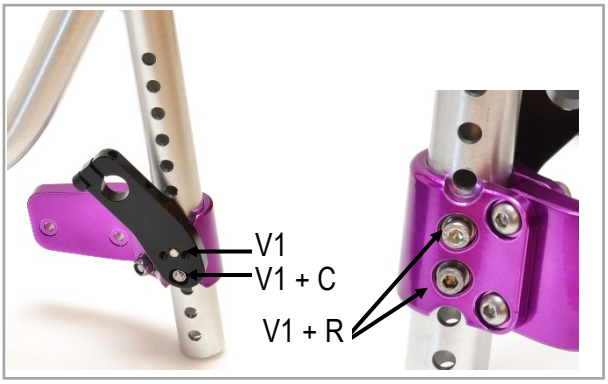
Note: according to how the parts are assembled to one another, the bolts changes – see nere below.



L = 2 mm half-moon spacer for dm 25 tube (to be put between the frame and the lever when at least one fixing hole is not a "common hole".
D = spacing buckle L 26 mm
C = lock nut M5
R = flat washer 5mm
V1 = boltTCEI 5 x 40
V2 = bolt TCEI 5 x 35
V3 = bolt TSPEI 5 x 35



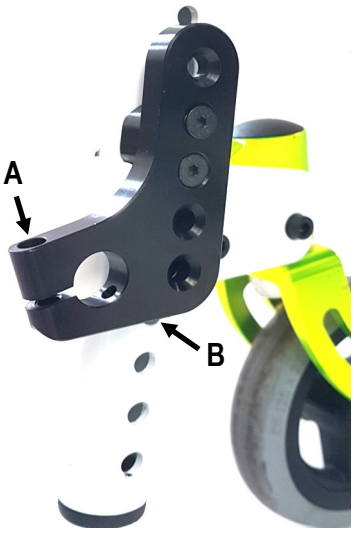


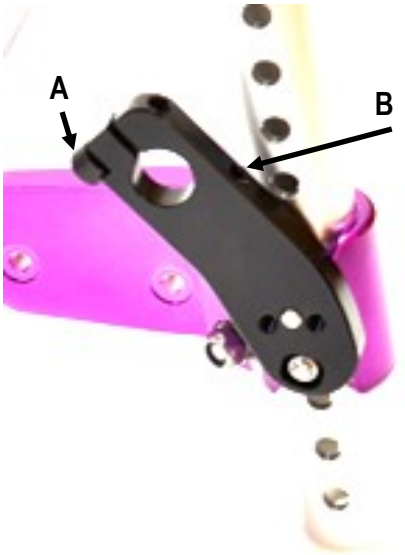


According to the necessary combination, the quantity of the cylindrical spacer **M** changes; therefore, you will have to add or remove one or two of them (they can be 2, 3 or 4 each side).

Each wheelchair is provided with a "kit of screws", which includes all the remaining screws that are necessary to be able to assemble the parts in any possible combination.

DOUBLE FOOTPLATE





ANGLE ADJUSTMENT

Loosen the bolt **A** and the grab screw **B**.

Turn the plate frontward or backward.

Once reached the correct inclination, tighten the bolt **A** and then tighten (not too strong) the grab screw **B**.

The inclination of the two independent plate can be different.

The "L-shaped" and the "curved three inclination" have the same system.

POSITIONING

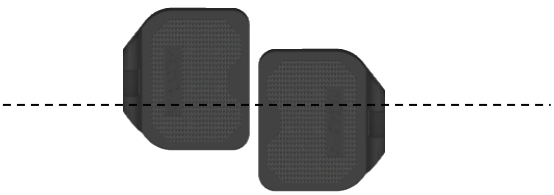
Internal or external according to the positioning lever, see also "footplate—*positioning lever*".

FRICTIONING THE ROTATION

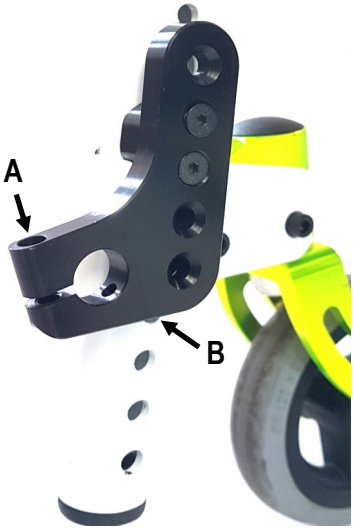
To adjust the friction of the footplate rotation movement, tighten or loosen the bolt **B** (the corresponding nut is held within it housing). Usually, when the footplate is lifted up the adjustment holds it in place.

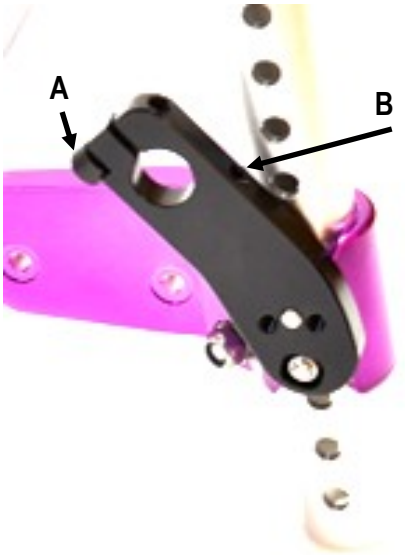
Particularity

Should you need the two plate differently positioned, you can orientate the two levers differently.



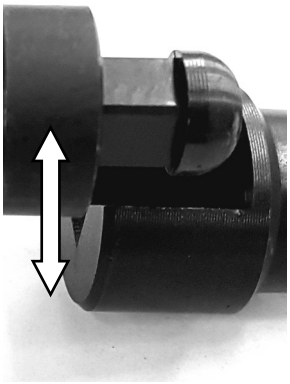
ONE PIECE FLIP-UP ALUMINIUM FOOTPLATE





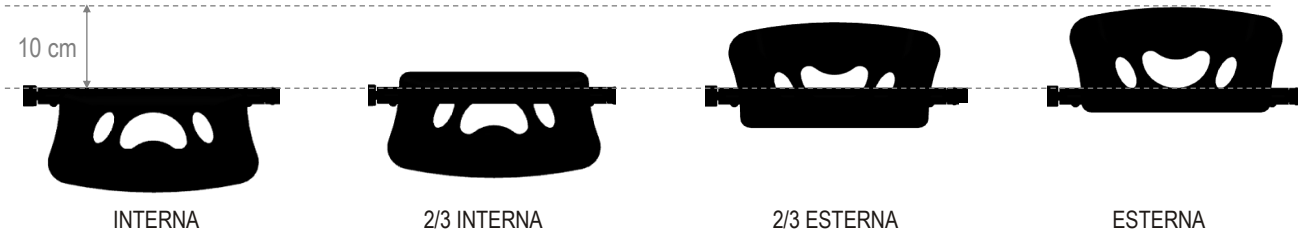
ANGLE ADJUSTMENT

Leave the footplate engaged in the using position.
Loosen 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.



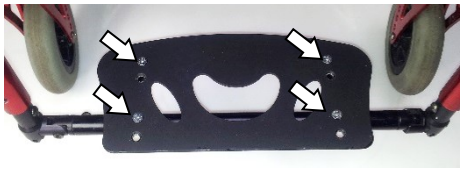
POSITIONING WITH RESPECT TO THE POSITIONING LEVERS

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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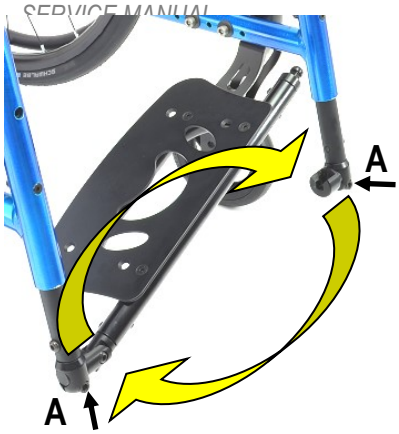
ONE PIECE FLIP-UP ALUMINUM FOOTPLATE



REVERSING THE FOOTPLATE

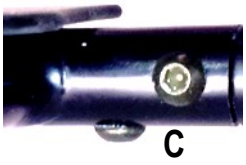
1) Loosen the angle adjustment bolts **A** and slide off the lock and rotation sides supports from the tube and assemble them reversing their position.

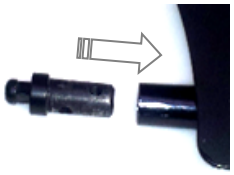
2) Or, remove the tubes, follow instructions of chapter *footplate distance* and assemble them reversing their side.

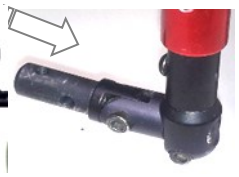
Finally, adjust the inclinantion and tighten the bolts **A**— see also *"angle adjustment"*.
Using either of these two methods, you can turn the footplate position from internal to external (or vice versa) or from 2/3 internal to 2/3 external (or vice versa).
When reversing the footplate in either these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

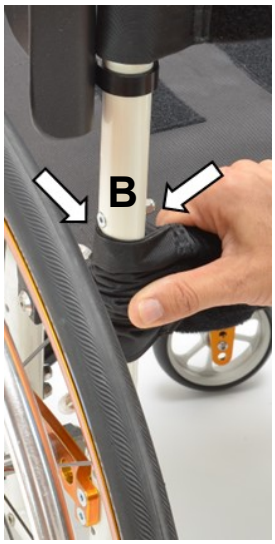
To adjust the friction of the footplate rotation movement, tighten or loosen the bolt **D**.

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.

***NOTE**: the pictures show the footplate mounted on the model Exelle, the procedure is the same.*

BACKREST HEIGHT

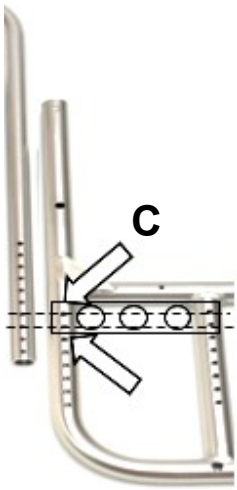
Standard rear frame



Remove the backrest upholstery.
If side guards are present, partly fold the crossbar and remove the bolt/washer/nut **A**. Move the rear wheel off by 2-3 cm without removing it.

Turn the side guard up backward. Slide the backrest band along the frame until you get access to the bolt/washer/nut **B**.
Remove bolt/washer/nut **B.**
Raise or lower the backrest height to the wished position.
Fix the bolt/washer/nut **B.**

When both rear height and backrest height are very low, one or two bolts/washers/nuts **C** that fix the rear wheel plate, can also fix the backrest tube.



If the backrest tube is already fixed with one or two bolts/washers/nuts **C**, remove such bolts, position the backrest to the wished height and fix it with the bolt/washer/nut **B.** Finally, fix the rear wheel plate.

If the backrest tube, when lowering it, stops against the bolt/washer/nut **V** before reaching the wished height, remove the bolts **C**, position the backrest tube at the wished height and fix it with the bolt/washer/nut **B**. Then, through the holes of the rear wheel plate and, consequently, through the tube's holes, pass a 6 mm drill pin. Finally, fix the rear wheel plate.

For this rear frame, the tubes are available in two sizes that allow for different height.
Usually, the backrest tube is fixed through the hole **F1** that allows for backrest height from 28.5 to 42 cm (short tube) or from 40.5 to 54 cm (long tube).

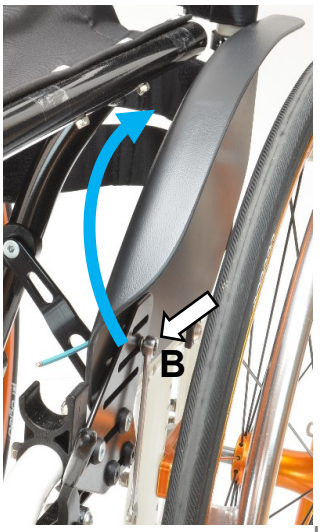
If you lower the tube over the last hole, you can fix it with the bolts **C** (that may fix the rear wheel plate, too). In such case, you have to widen the hole to 6 mm. The minimum height you can reach is 25 cm (with long tube, you have to cut it off 10 cm approx.).

To have higher heights, you can fix the tubes through the hole **F2** as long as you leave at least 8 cm of tube below the fixing point.

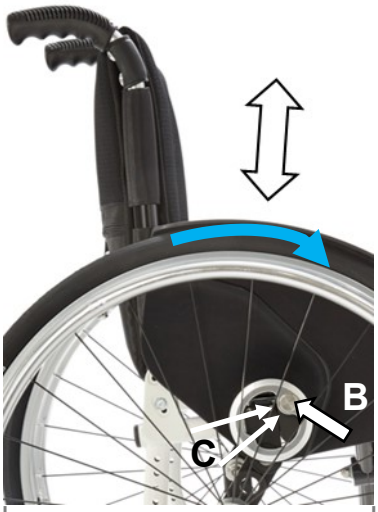
To reduce possible play and possible noise, you can put some sticky tape around the backrest tube at its bottom and at just above the last hole.

BACKREST HEIGHT

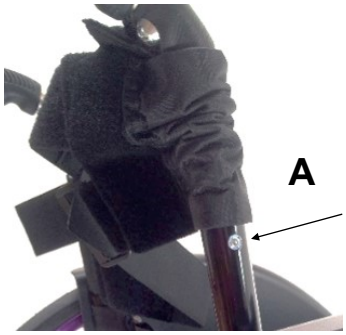
Dynamic (first version) and Dynamic 2.0 rear frame



Dynamic 2.0



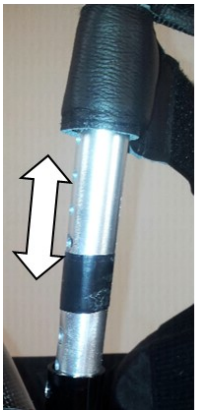
Dynamic



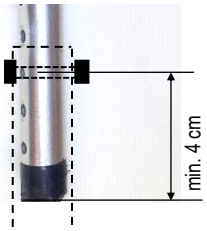
Remove the backrest upholstery and slide up the protecting sleeves of the backrest bands along the tube until the fixing screw A is accessible.
If it was not accessible:

- Dynamic 2.0 rear frame, partly fold the crossbar, remove the bolt/washer/nut **B** and turn the side guard backward;
- Dynamic rear frame, loosen the two headless bolts **C** and the nut tha fixes the axle **P** (see also "*side guard adjustment with rotative system*") and turn the side guard frontward as much as necessary.

Remove bolt/washer/nut **A.**
Raise or lower the backrest tubes to the desired height.
If the minimum height you can reach is not enough, it is necessary to cut the lower side of the tube.
If the maximum height you can reach is not enough, it is necessary to change the tube.



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.

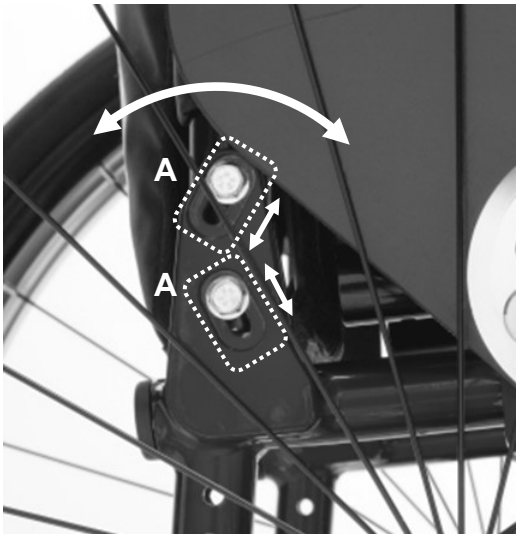


Replace the screws and tighten.
Finally:
- Dynamic 2.0 rear frame, fix the side guard with the bolt/washer/nut **B**;
- Dynamic rear frame, turn the side guard to the correct position and then tighten the nut that fixes the axle **P** and the two headless bolts **C**.

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 (or just under it).

BACKREST ANGLE

Dynamic (first version) and Dynamic 2.0 rear frame



Adjustment from 9° open (tilted backward) to 9° close (tilted frontward) with respect to 90° to the seat.

The backrest tube is fixed with 4 bolts **A**, two on the outer side and two on the inner side of the wheelchair.
To adjust the angle, loosen the 4 bolts and swing the tube frontward or backward to the desired inclination.
Finally, tighten the 4 bolts **A**.

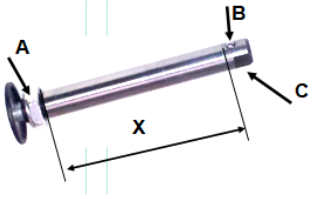
In some case, the closest backrest angle may create interference between the backrest tubes and the seat tubes when folding the wheelchair.
Should that happen, open the backrest angle the strictly necessary.

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

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

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.

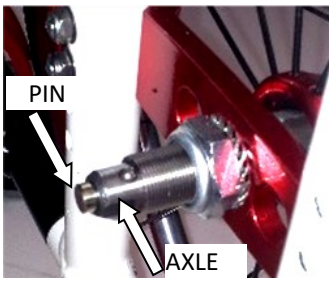
If the wheel comes off, the distance **X** between the nut **A** and the balls **B** is too short, therefore, it is necessary to unscrew the nut **A** while holding the point **C** of the axle. **If there is play,** the distance **X** between the nut **A** and the balls **B** is too long, therefore,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

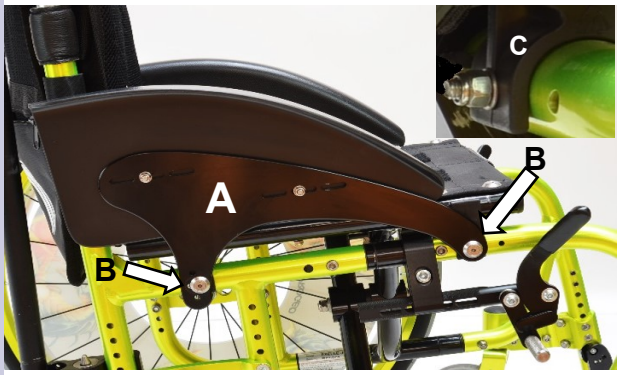


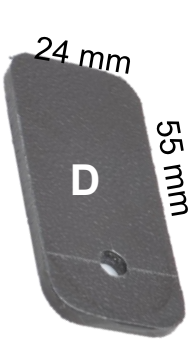
The reasons why the wheel can get stuck can be two.

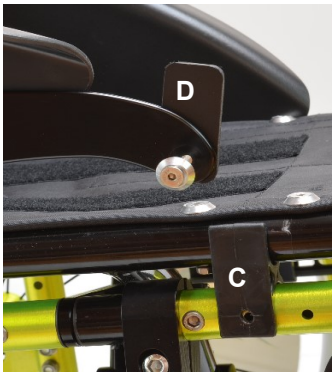
- the receiver is slightly damaged; in this case, with a ½ reamer, re-pass the receiver's hole.
- when pushing the axle's button, the balls do not fall inside the axle's shaft; first, clean the axle, then try to push the button a few times a see if you have solved the problem; if not, press the button, 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.

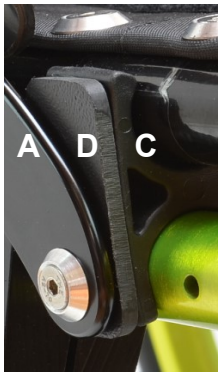
SEAT WIDTH ENLARGEMENT

Standard and Dynamic 2.0 rear frame

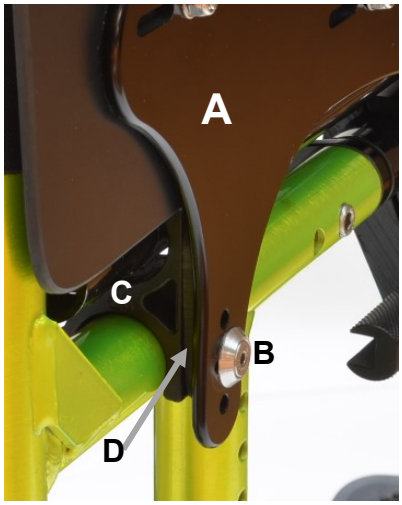






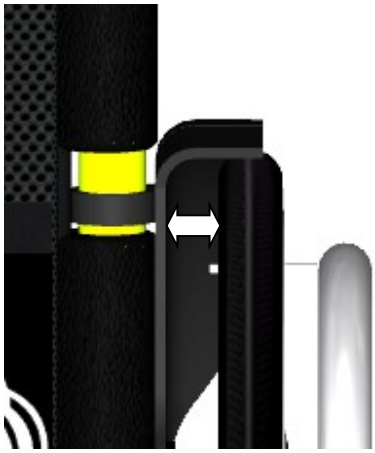


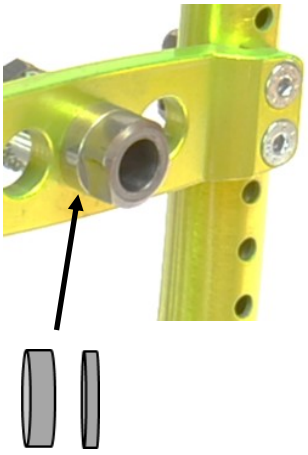
Remove the bolts/washers/nuts **B** that fixe the side guard aluminium support **A** to the frame.
It is not necessary to remove the side guard from the aluminium support.
You have to replace the bolts **B** with a 5 or 10 mm longer one according to the wished enlargement.
Insert the longer bolts **B** through the hole of the support **A**, add one or two 5 mm spacers **D** between the support **A** and the crossbar tube support **C** and tighten



Note: while fixing the bolts **B**, you have to hold the spacer **D** aligned with the support **C**. In case you add two spacers, they can move between one another. You may even glue the spacers, but this is normally not necessary.

Now, it is necessary to check the gap between side guard and rear wheel and decide whether or not, to add spacer on the wheel receiver.
In such case, remove the wheel receiver and add 2.5 and/or 6 mm spacers.





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.

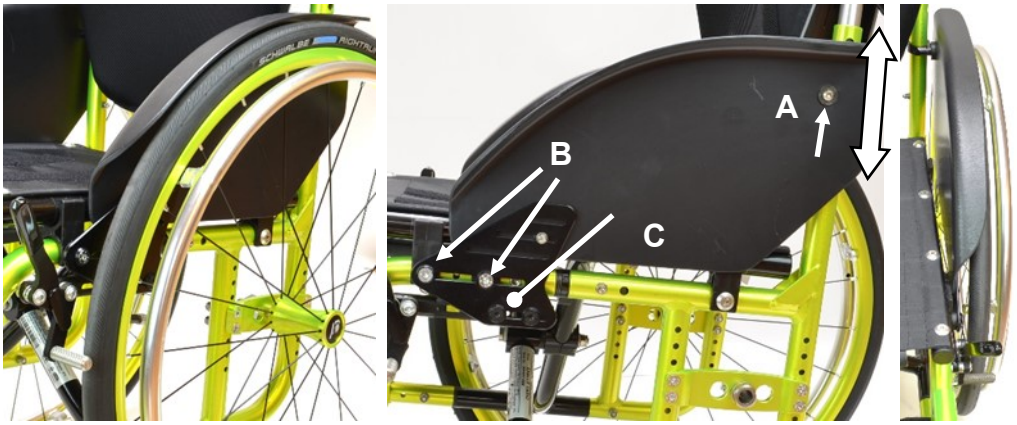
Check and, if necessary, adjust the brake.

Follows next page

SEAT WIDTH ENLARGEMENT

Standard and Dynamic 2.0 rear frame

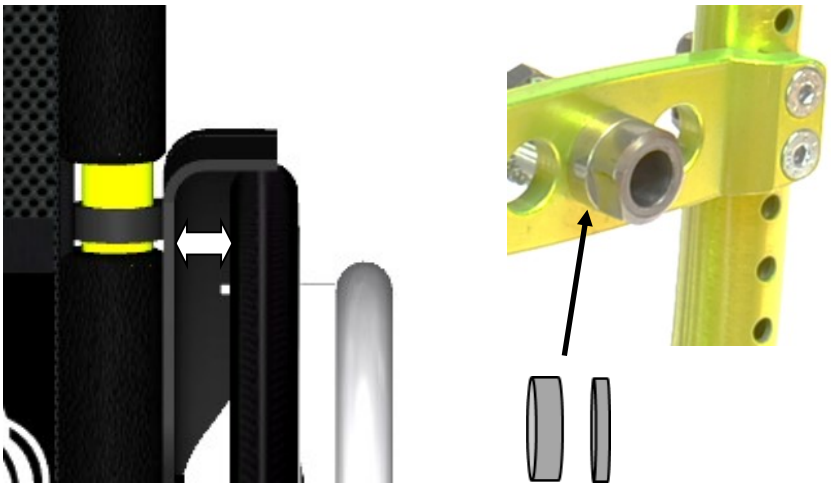
Put the rear wheel on and position the side guard as it was before removing the parts (you can have a look at the side guard on the other side of the wheelchair).



Tighten the plate **C** with the bolts **B**. If one was not accessible, remove the rear wheel, fix the second bolt **B** and screw the bolt **A** just enough to be able to vertically slide the side guard, but also to let it hold its position.
When all bolts are accessible even with the rear wheel on, operations result quicker. These instructions do not consider this convenient case.
Put the rear wheel on and vertically slide the side guard to the correct position.
Remove the wheel and tighten the bolt **A**.
Tigthen the two bolts/washers/nuts **B**.

Now, it is necessary to check the gap between side guard and rear wheel and decide whether or not, to add spacer on the wheel receiver.
In such case, remove the wheel receiver and add 3 and/or 6 mm spacers.

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.



SEAT DEPTH / FRAME LENGTH

The frame of the model Exelle Junior has three different lengths that are considered "ideal" according to the seat depth PS (1,2,3,4,5).

Thus:		
	SHORT	for PS 27.5-30 cm;
	MEDIUM	for PS 32.5-35 cm;
	LONG	for PS 37.5-40 cm.

"Ideal" does not mean "compulsory", therefore, you can choose when ordering the wheelchair, but you can also modify it afterwards.

In fact, the frame length is adjustable by means of proper spacers between cross-bar and front and/or rear frame.

SHORT FRAME (1): no spacer – minimum frame length

MEDIUM FRAME (2): one 2.5 cm between crossbar and front frame (the frame becomes 2.5 cm longer in front)

LONG FRAME (3): one 2.5 cm between crossbar and front frame and one 2.5 cm between crossbar and rear frame (the frame becomes 5 cm longer).

Note: with long frame, the gap between the seat canvas and the backrest tube is always 2.5 cm longer than when the frame is short or medium (e.g.: a chair with PS 37.5 cm and long frame, will have the seat canvas depth equal to 35 cm).

The short frame **(1)** has no spacer, but you can make three adjustments:

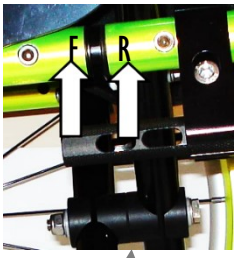
- Add front spacer, so, you will make it longer in front only – it becomes medium frame **(2)**;
- Add rear spacer, so, you will make it longer at rear only **(4)** – the seat depth increases by 2.5 cm.
- Add front and rear spacers, so, you will make it longer in front and at rear – it becomes long frame **(3)** and the seat depth increases by 2.5 cm;

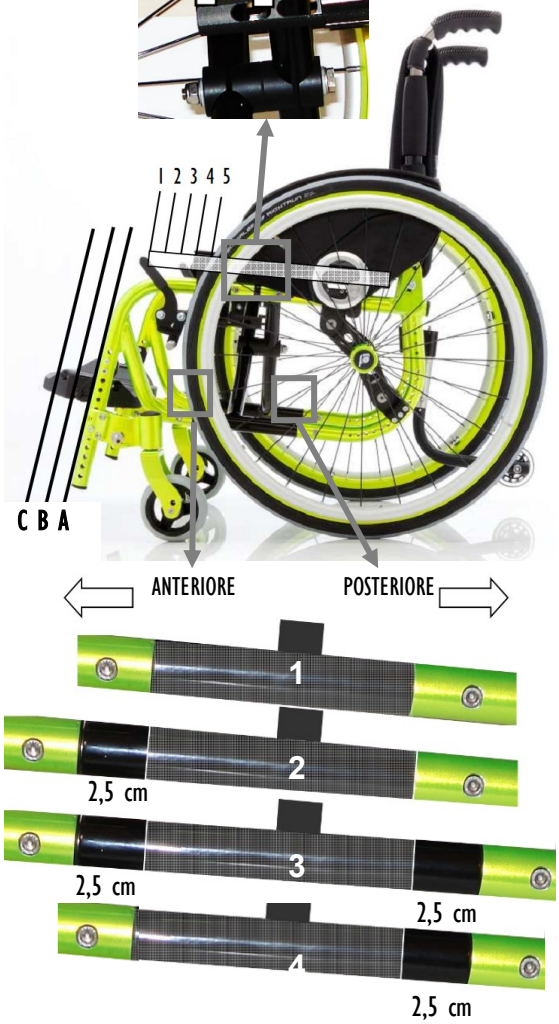
Note: do not put two spacers (5 cm) only in front or only at rear.

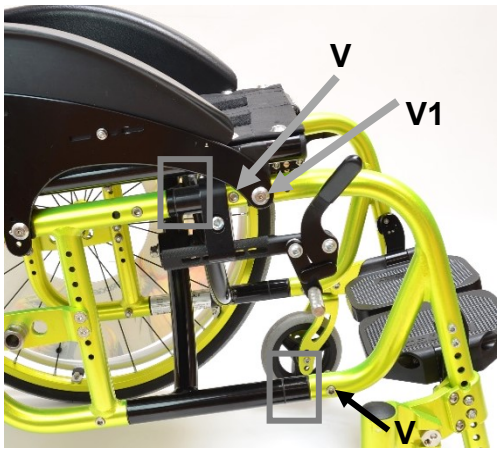
To make explanation easier, we refer to the picture showing the lower side of the frame. It should be clear that other spacers are present on the upper side (positions **F** and **R**). With the above information, it should also be clear that the four variants **(1) (2) (3) (4)** are possible by adding or removing spacers.
To change the length of the frame it is necessary to remove either front or rear frame according to the case. Hereafter, examples that include all possibilities.

FROM MEDIUM TO SHORT FRAME

(Spacers are highlighted with grey squares)
Remove the bolts **V** and corresponding nuts that fix the front frame to the connecting inner tubes.
Remove the bolt **V1** and corresponding nut that fix the side guard support. (The Dynamic rear frame does not have that fixing bolt).
Remove the brake, too (this is not strictly necessary, but it will be easier to work without it)







Note: the adjustments/configurations are the same for the Standard as well as the Dynamic and Dynamic 2.0 rear frames.

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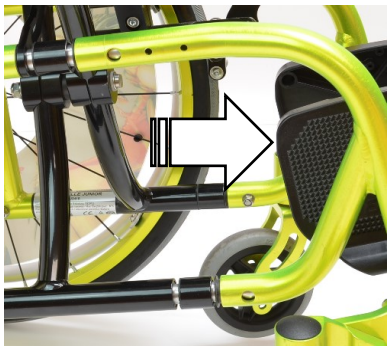
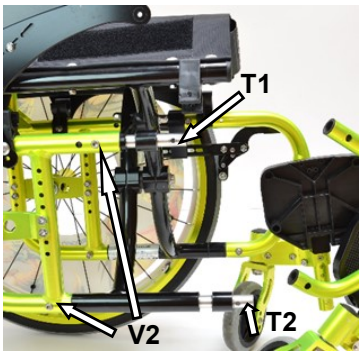
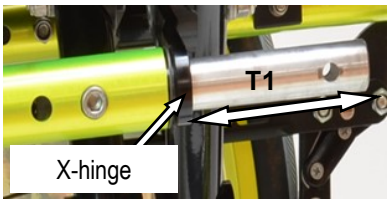
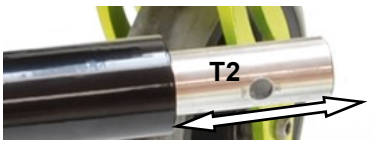
SEAT DEPTH / FRAME LENGTH

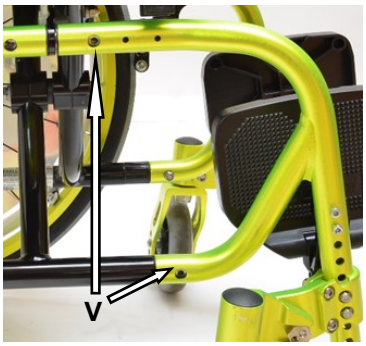
Now you can remove the front frame and the spacers, too.
Remove the two bolts **V2** and corresponding nuts that fix the rear frame to the connecting inner tubes.
Slide the connecting tubes to the rear by 2.5 cm until aligning the new holes according to the **V2** fixing points on the frame.
If the tube does reach the point where the holes in line with each other, see “particular notes” at the end of this sheet.
Fix these two points.
Fix the front frame with bolts **V** and corresponding nuts.
Fix the side guard support with **V2** and corresponding nut.
Repeat the same operations on the other side of the wheelchair and then mount the brakes and adjust them.





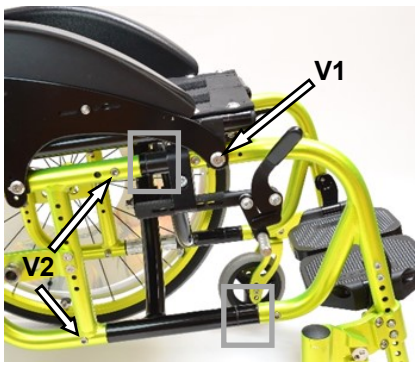


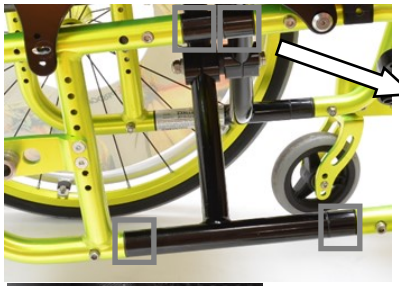


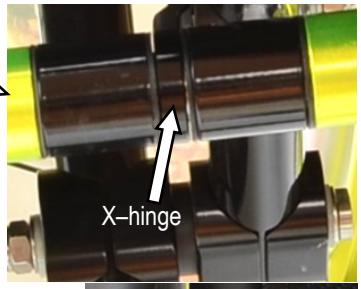


FROM SHORT TO MEDIUM FRAME
Proceed as just explained above, but the other way round.

FROM MEDIUM TO LONG FRAME
Remove the two bolts **V2** and corresponding nuts that fix the rear frame to the connection inner tubes.
Remove the bolt **V1** and corresponding nut that fix the side guard support. Remove the rear frame.
Insert the spacers, assemble the rear frame and fix it with the bolts **V2** and corresponding nuts.
Note the position of the spacers with respect to the crossbar X-hinge.
With this adjustment, not only does the frame become longer, but the seat depth increases, too.
In fact, as you can see in the picture, the frame goes back with respect to the seat.

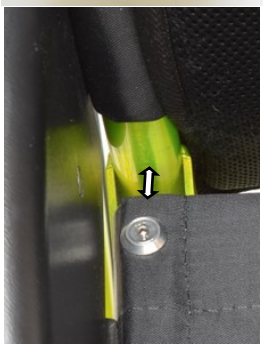




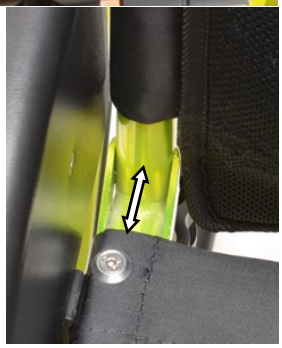


FROM SHORT TO LONG FRAME OR VICEVERSA
Proceed similarly as explained above. In these cases, you have to work on both front and rear frame.

SEAT DEPTH ADJUSTMENT
You saw that when changing from medium frame to long frame, you change the seat depth, too, by 2.5 cm. You can increase the seat depth even if you start from a short frame. This case we can call it “elongated short frame”.



Short and medium frame 1 cm approx.



Long or elongated frame 3.5 cm approx.

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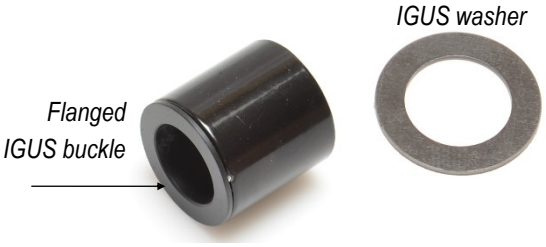
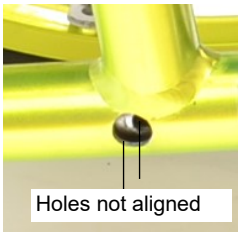
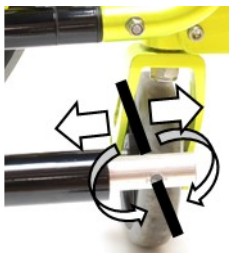
SEAT DEPTH / FRAME LENGTH

PARTICULAR NOTES

The **spacers** include a flanged IGUS buckle on one side only.
This flange prevents the contact between the aluminium parts on the junction. Pay attention to this aspect.
Between some junction frame/crossbar, there may be an **IGUS washer** to compensate a possible gap. When assembling the parts, make sure you put these washers where they were originally located.
The **connection tubes** have three holes on the side of the rear frame and they are meant for the different frame lengths. In some case, only for the lower tube and only if the frame becomes short (thus, after removing all spacers), due to the contact with the curved part of the frame, the tube may not reach the point where the holes are aligned. Should that happen, you have to round off the lower side corner of the tube end just enough.



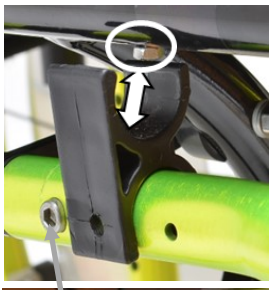




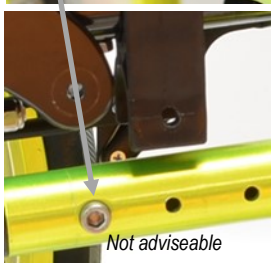
If the frame are hard to remove, you can use a mallet.

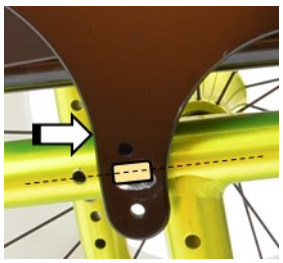
If the connection tunes are hard to slide, you can use a mallet or you can use a pin through one free hole and proceed with a turn-and-pull or turn-and-push movement.

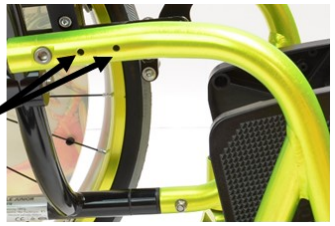
Sometimes, **a nut that fix the seat canvas to the seat tube interferes with the crossbar support**. Should that happen, fix the support through another hole and fix the side guard support adding a spacer for Ø 25 mm tube + bolt/washer/nut.



If you change the frame to long frame, the **front fixing point of the side guard support** will correspond to the bolt fixing the frame to the connection tube.
It is not advisable to use such point because the inner tube may not be properly tightened and it may create some play on the frame.
Therefore, you have to change the point where to fix the side guard support.
To do that, first, fix the front side of the side guard support (together with the crossbar support or separated according to the case). Turn the side guard support until aligning its fixing point to the frame's axis. Position the crossbar support, open the crossbar and let it lock on the four supports. Drill a 5 mm hole through the frame. Finally fix the parts.







Should the wheelchair be equipped with **Flip-up armrests**, the adjustments remain the same.
You have to fix the front support of the armrest through one of the two holes ahead of the one fixing the frame to the connection tube.
The Flip-up armrest is depth adjustable.
Should the wheelchair be equipped with **Desk armrests**, the armrest support is fixed through two Ø 8 mm holes on the upper side of the rear frame.
To make the system stable, the fixing bolts pass through two cylindrical spacers.
While adjusting the frame length, you always need to remove the armrest support and their cylindrical spacers.
The connection tube is fixed through the same holes. If, after adjustment, one or both holes on the tube were still Ø 6 mm, just pass the holes with an 8 mm drill pin.