SERVICE MANUAL

ENGLISH

SERVICE MANUAL

BASIC LIGHT

Rev. 0 - 06/05/2020

BASIC LIGHT

GENERAL WARNINGS

ANY ADJUSTMENT CAN BE CARRIED OUT EXCLUSIVELY BY QUALIFIED AND AUTHORIZED BY REHATEAM® 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® from any responsibility on any malfunctioning and/or damage due to such adjustments/modifications.

Always contact RehaTEAM® 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® disclaims any responsibility for damage to the product or the people due to any modification that is not properly performed or that, in any case, does not guarantee safety to the user.

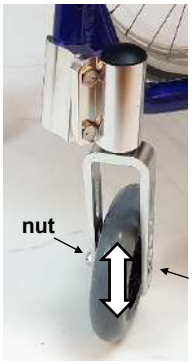
BASIC LIGHT

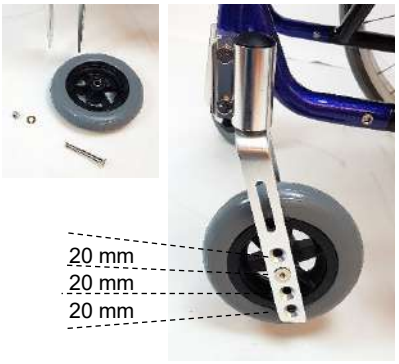
SERVICE MANUAL

FRONT HEIGHT

You can adjust the front height by changing the position of the caster on the fork and/or moving the fork support on the frame.

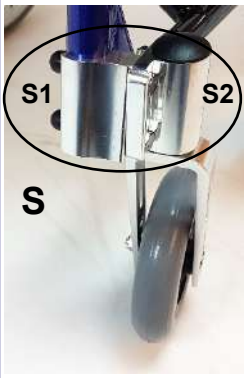
After height adjustment, adjust the fork angle, see adjustment sheet, “fork angle”.

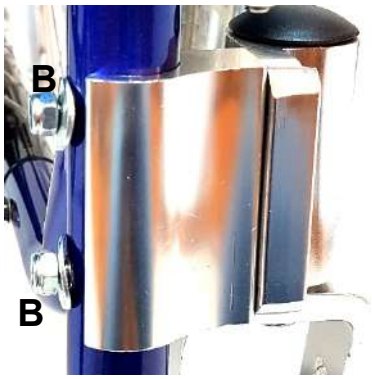


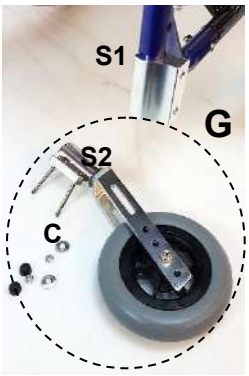


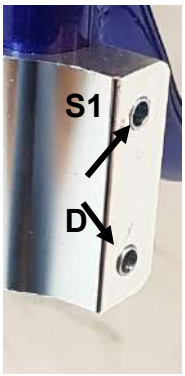
Caster on fork.
Screw off the bolt **A** with nut and washer. Position the caster using another hole, insert and fix the bolt with the nut.
Note: if you position the caster using a high hole and the lower side of the fork touches the ground, you have to cut off a part of the fork. In the example above, the 6” caster you cannot position the 6” caster on the highest hole unless you cut off the fork where indicated by the black dotted line (or above it).

Moving the fork support.
The fork support **S** is made of two parts: the spacer **S1** and the adjustment block **S2**.

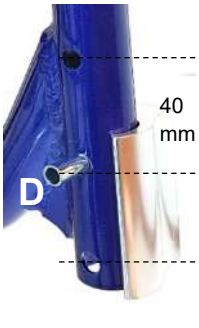


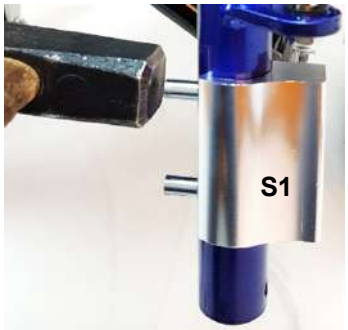


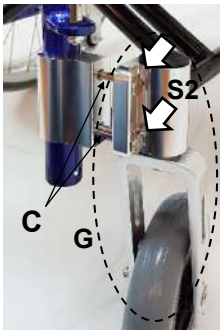




Screw off the two nuts **B**. Remove the unit **G** made of: fork with caster, block **S2** and the two bolts **C**.
With a pin or similar and a hammer, push off the two cylindrical spacers **D** by approximately 2 cm to the inside of the wheelchair. This way you can remove the fork support spacer **S2**.







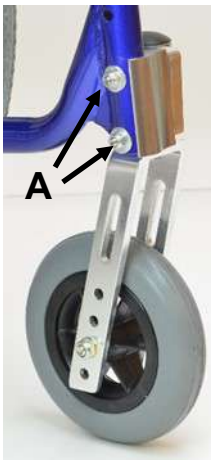
You can fix the fork support at two different heights on the frame at 4 cm from one another.
Leave the space **D** that is on the central hole and remove the other.
Insert the just removed spacer **D** in the other position without letting it go out externally.
Now, put the spacer **S1** on the new position and hold it with one hand.
Push the two spacers **D** until aligning them to the flat side of the spacer **S1**.
Insert the unit **G** with both bolts **C** with their head within the housing of the block **S2**.
Mount the two nuts **D** with their corresponding washers and screw them temporarily.
Repeat the same operation for the other side and then adjust the fork angle.

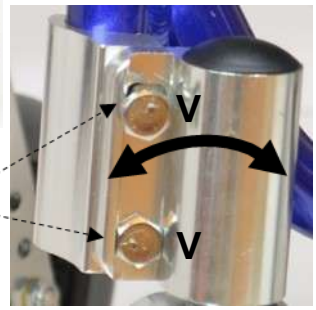
FORK ANGLE

Work on a flat and even surface
You can find this kind of adjustment in different models the frame of which the system is fixed to in different way. Nevertheless, the adjustment procedure is the same.

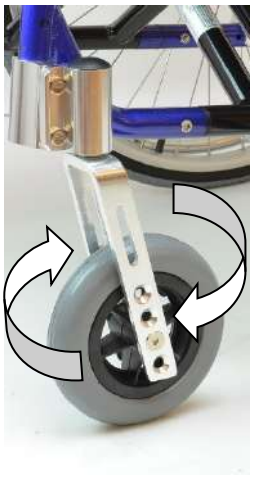
You should check and adjust the fork angle whenever you change the seat height.
The fork axle has to be perpendicular to the ground.

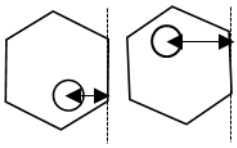
Slightly loosen one of the two nuts **A**.
Screw off the other nut **A** and washer.
Push the bolt **V** off its housing just enough to be able to swing the support **S**.
Do not remove the bolt.
Adjust the fork angle.





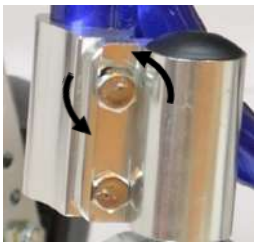
You can now adjust the fork by swinging it to the front or to the rear, pivoting it on the bolt you have slightly loosened before.
That is possible thanks to the two horizontal slots **B** on the support **S**.
You can reveal the perpendicularity using a spirit level leant against the cylinder of the 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.





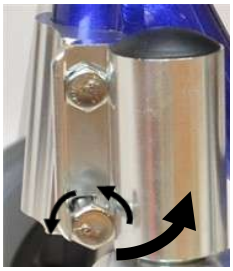
The head of the fixing bolts **V** is eccentric; therefore, for each of the six sides you can get a different position, in fact, a different inclination.

Now, turn the head of the bolt **V** until you find the side that allows you to push the bolt in its housing without moving (swing) the support **S**.
Fix the corresponding nut **D** (with washer) and then the nut of the other bolt.



Minimum and maximum inclination

If, even with the best position of the head of the bolt, it is not possible to pus hit in its housing, swing the support just enough to let the bolt in and crew the nut without tightening it. Now, the fork is not perpendicular, therefore, you have to work on the other bolt following the same procedure.



For remarkable seat inclination or flat seat, you may not reach the correct angle (perpendicular). In such case, adjust it the best you can.

Test the wheelchair and check if it goes straight.

See also DIRECTIONALITY

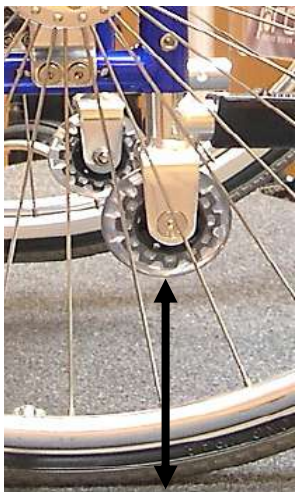
REAR HEIGHT

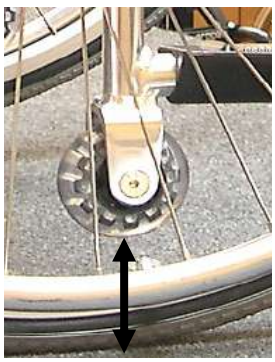
Standard rear frame

Screw off the wheel receiver and choose one of the hole where to fix it.
The holes are at 2.5 cm from one another.
Once you have determined the height, tighten the receiver hard.

According to the new rear height, you can also adjust the height of the wheels for narrow passages to which the anti-tip wheel is fixed.
Screw off the fixing bolt and nut **A**, change height and fix it back.

Whenever you change the rear height, you change the seat inclination, too. Therefore, it is necessary to adjust the fork angle, see sheet “fork angle adjustment”.
You also need to check/adjust the brakes, see sheet “brake adjustment”.





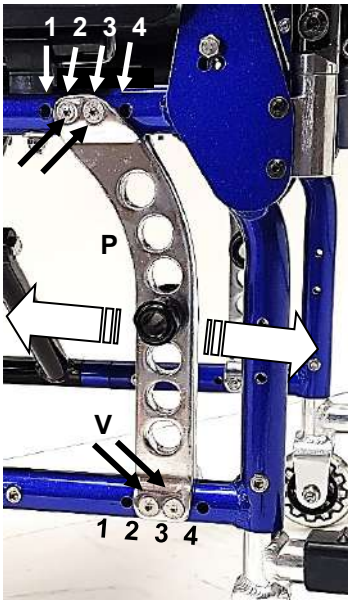
SETTING (point of balance)

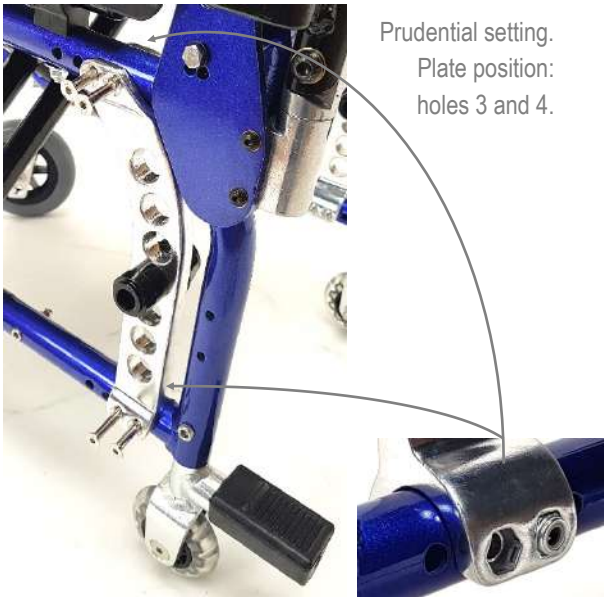
You can adjust the rear wheel plate **P** in three different positions: prudential, standard and active.

The standard position is in the middle as in the picture on the side.

The plate is fixed on holes 2 and 3, while holes 1 and 4 are visible.

Screw off the four bolts **V** – the corresponding nuts are built in the plate, therefore, you do not need the spanner.



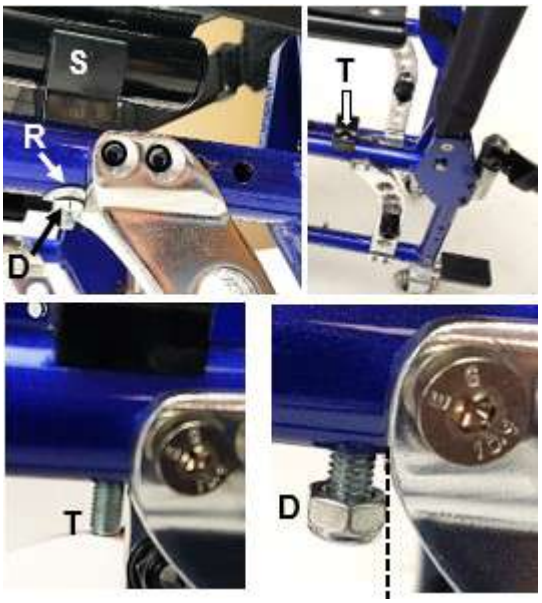


Prudential setting.
Plate position:
holes 3 and 4.

Slide the plate **P** until aligning its holes to the frame's.
Should sliding be difficult, lubricate the involved parts.
Insert and screw the four bolts **V**, for each bolt, with one finger, hold the corresponding nut within the housing of the plate.

Repeat the same operation for both sides of the wheelchair.

The standard and prudential setting do not show any issue.



In case of active setting (fixing holes 1 and 2), you can position the plate only if you first remove the washer **R** of the crossbar tube support **S** fixing unit. In fact, this washer prevents the plate from sliding to the alignment of the holes.
Partly fold the wheelchair and flip the armrest back. Unscrew the bolt **T** while holding the nut **D**. remove the nut, remove the washer **R** and leave the bolt **T** without nut.
Move the plate until aligning the holes and insert the four bolts **V**.
Mount the nut **D** aligning one of its faces to the plate.
Screw the bolt **T** while holding the nut **D**.
If there is not enough room for the nut **D** (due to unfavourable tolerance), it is necessary to slightly widen the holes for the fixing bolt **T**.

Check and, if necessary, adjust the fork angle.
See sheet "fork angle adjustment".

Adjust the brakes.
See sheet "brake adjustment".

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	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.

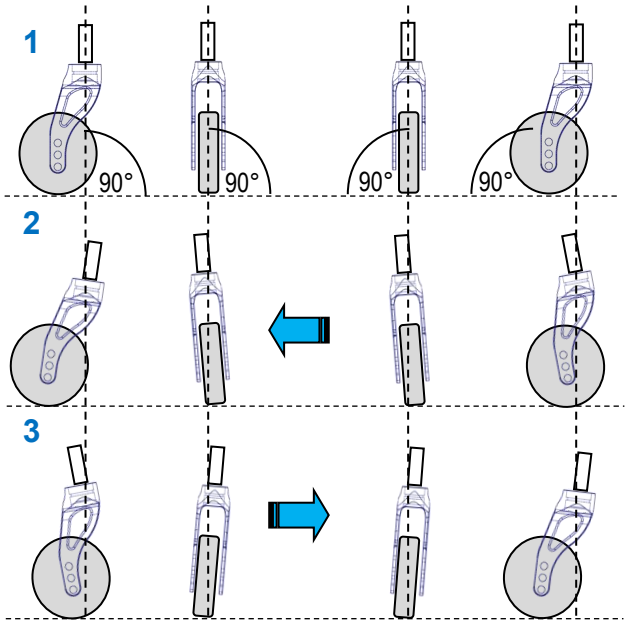
However, before working on the fork angle adjustment, check all the points above mentioned.

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**



Follows next page

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.

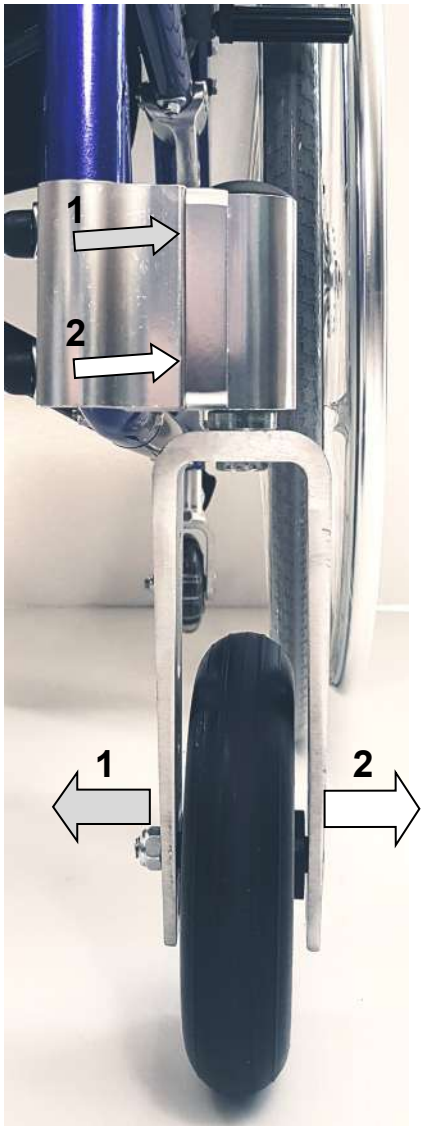
If both forks axis are correct but the wheelchair still turns right or left, it means that the latitudinal angle is not perfect.

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.

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.

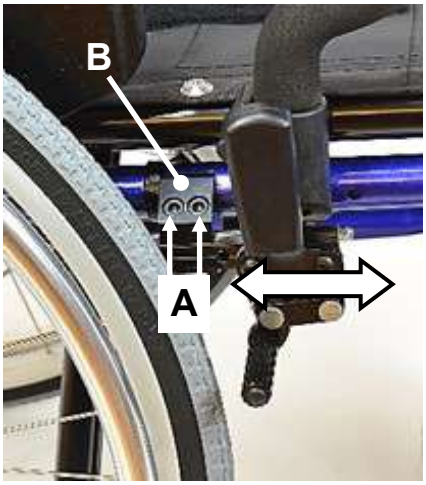
To incline the fork externally **2** , position the strapping on the lower side of the fork support.

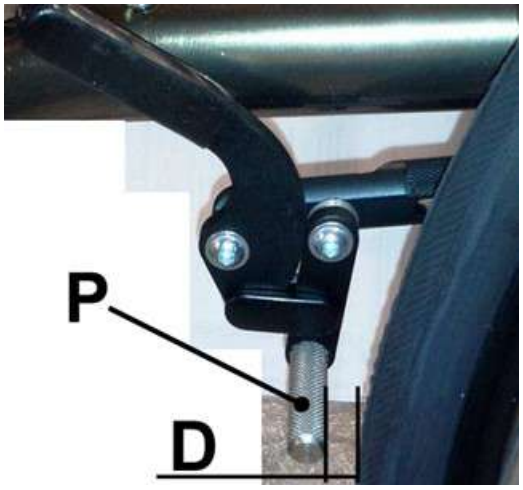


Plastic strapping

BRAKE WITH CLAMP

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





Loosen the two bolts **A** of the clamp **B**.

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 two bolts **A** and try the brake out to check if the adjustment is good.

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

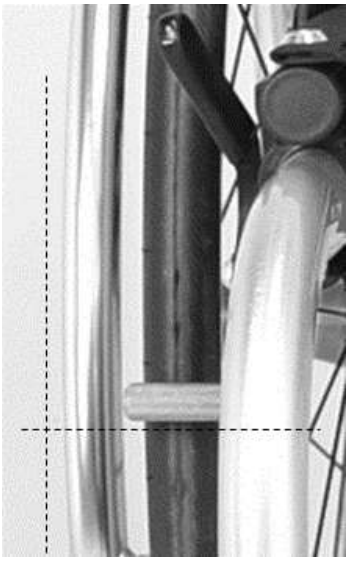
A good adjustment has the brake not too hard to engage but braking, so you will have to find the suitable compromise.

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

Carry out the same operation on the other side.

Make sure that the clamp's teeth grab the brake rod's teethed or knurled surface.

In order to tighten the clamp correctly, screw the bolts alternatively every quarter of a turn.



Knorled or toothed side of the rod

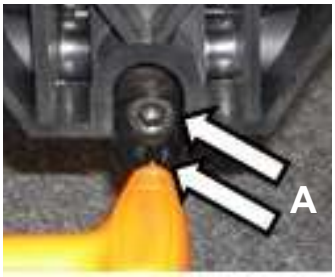
FOOTPLATE DISTANCE

HEIGHT ADJUSTMENT EVERY 1.5cm
Remove the bolts **A** and their corresponding nuts and washers **B**.
Slide the footplate tube up or down until the necessary height.
Insert the bolts through the nearest holes and tighten.
If necessary, you can adjust the height of the two independent footplates differently.
With one piece footplate, the two tube have, of course, to be adjusted at the same height.

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

NOTE: the diameter of tubes for the one-piece footplates is slightly smaller than the double footplate's. for such reason, in order to prevent possible play, it is advisable to apply a few turns of sticky tape on at least one point of the tube that is inside the footplate frame.

DOUBLE FOOTPLATE



Angle adjustment.

Raise the plate.
Loosen the two bolts **A** you find on the lower side of the plate.
Lower the plate.
Adjust the inclination.
Raise the plate and tighten the two bolts **A**.

ONE PIECE FLIP-UP PLASTIC FOOTPLATE

ANGLE ADJUSTMENT

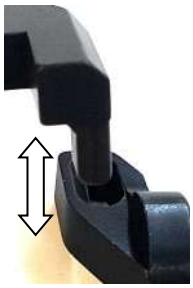
Leave the footplate engaged in the using position.

Loosen the bolt **A** of both adjustment supports.

Turn the plate frontward or backward.

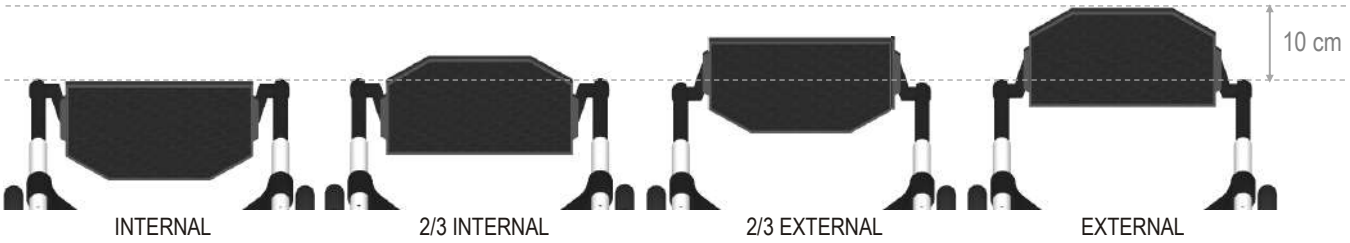
Once reached the correct inclination, tighten the bolt **A** on the lock side.

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

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



It is possible to change the footplate position in different ways

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

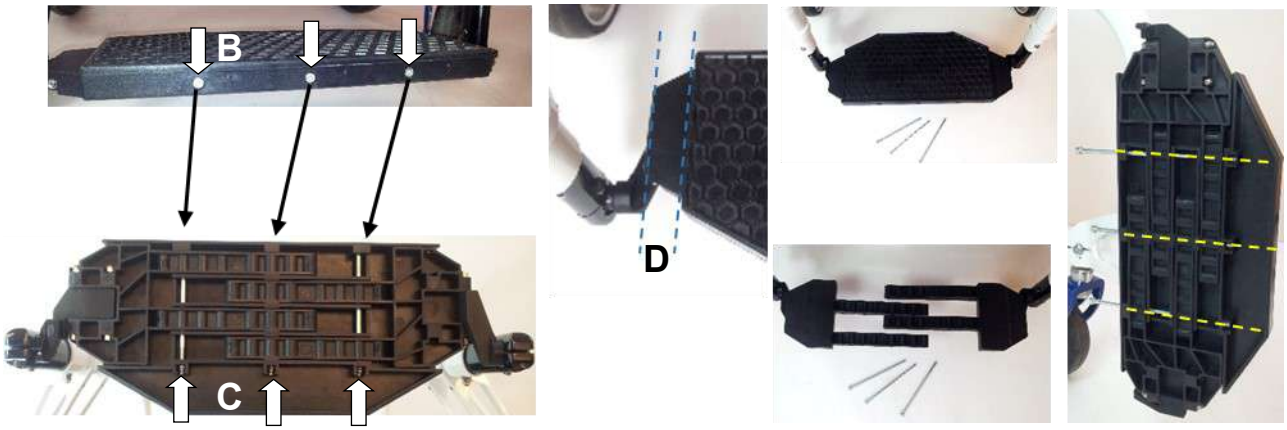
2) Remove the tubes following the instructions of the chapter footplate *distance* and assemble them again exchanging their position.

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

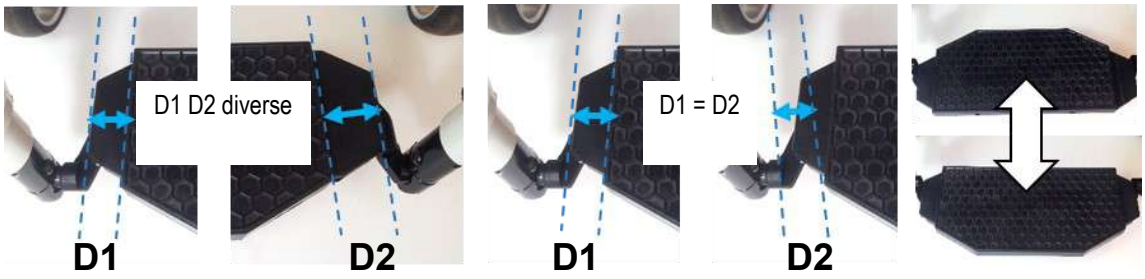
Follows next page

ONE PIECE FLIP-UP PLASTIC FOOTPLATE

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



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



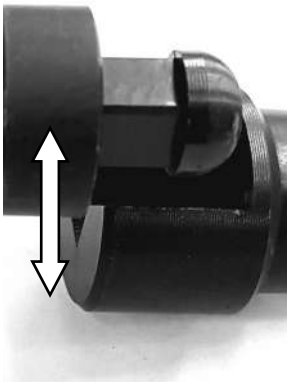
When reversing the sole plate, you can turn the footplate position from internal to 2/3 internal (or vice versa) or from external to 2/3 external (or vice versa).
The lock side remains the same.

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

ONE PIECE FLIP-UP ALUMINUM FOOTPLATE

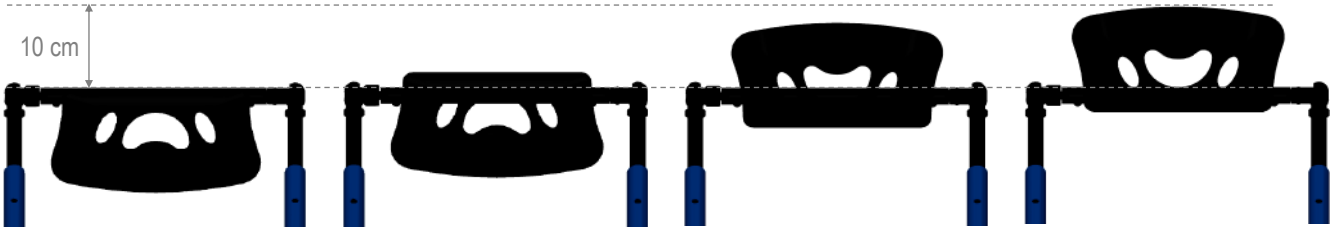
ANGLE ADJUSTMENT

Leave the footplate engaged in the using position.
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

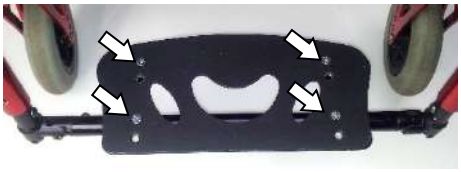
4 positions: internal; 2/3 internal; 2/3 externa; external



CHANGING THE PLATE POSITION

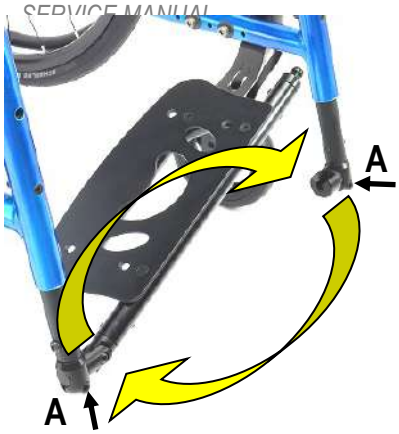
Remove the 4 bolts **B** and fix the plate using the other set of holes.
The plate can be orientated with its curved side facing either back or front.


Footplate tubular



Follows next page

ONE PIECE FLIP-UP ALUMINUM FOOTPLATE



REVERSING THE FOOTPLATE

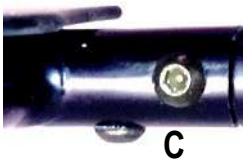
1) Loosen the angle adjustment bolts **A** and slide off the lock and rotation sides supports from the tube and assemble them reversing their position.

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"*.

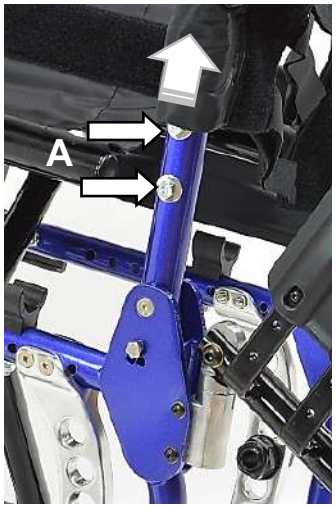


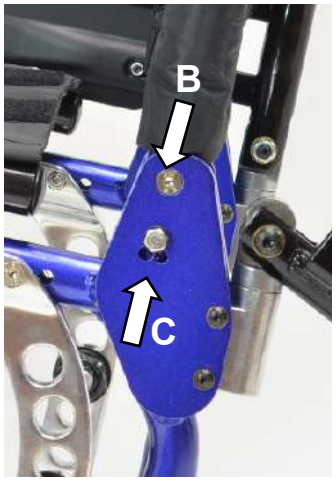
FRICTIONING THE ROTATION

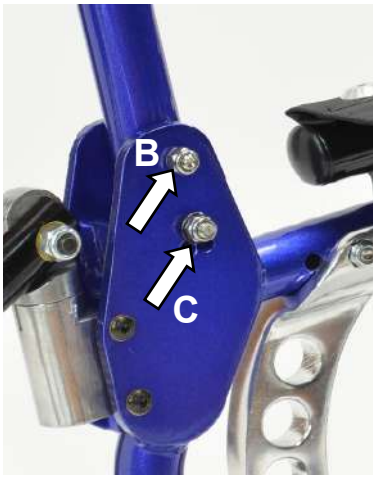
To adjust the friction of the footplate rotation movement, tighten or loosen the bolt **D**.

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.

BACKREST HEIGHT AND ANGLE







You can adjust the backrest in height and angle.

Height adjustment

Remove the backrest upholstery.
In order to make operation easier, remove rear wheels, armrests and partly fold the crossbar.
Slide the backrest bands upward until having access to the bolts, washers and nuts **A**.
Screw off the two bolts, washers and nuts **A**.
Adjust the height by moving the inner tube up or down.
The pre-drilled holes allow for adjustment with 2 cm intervals.
In case of low backrest heights, you may need to cut off the inner tube.
Once determined the height, insert and fix the two bolts, washers and nuts **A**.

Repeat the same operation for both sides.

Angle adjustment

You can adjust the backrest inclination at three different angles: 90° to the seat, 6°closer (84°) or 6° more open (96°).
Slightly loosen the upper bolt and nut **B**.
Screw off the lower bolt and nut **C**.
Swing the backrest tube until aligning the holes according to the new angle.
Insert and fix the bolt and nut **C**.
Finally, tighten **B**.

Repeat the same operation for both sides.

SEAT DEPTH

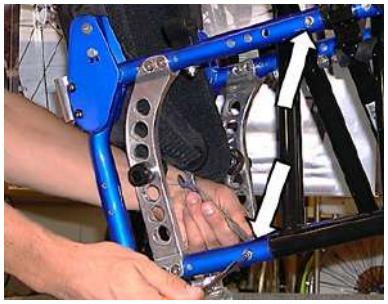
The Basic Light's frame allows for seat depth adjustment by changing, by means of proper spacers, the distance between the rear frame and the crossbar.

Remove the footplates, the rear wheels and the arm-rests, then, partly fold the wheelchair.

Loosen the clamp and slide the brake off.

Remove the front support of the Flip-Up armrest.

If the wheelchair is not equipped with Flip-up armrest, skip this step and read note at the end of this sheet.



Remove the bolts that fix the rear frame.

Now you can slide the rear frame off along the inner connecting tube.

In this case, no spacer between rear frame and crossbar is present, therefore, the seat depth is 40 cm.

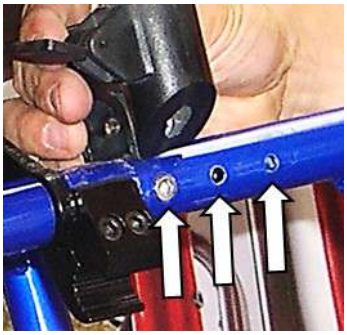
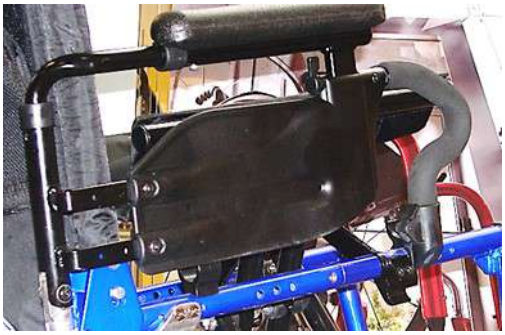
If you insert a 2.5 cm spacer on the connecting tube you obtain, after assembling the rear frame, 42.5 cm seat depth. With 5 cm spacer, the seat depth becomes 45 cm (the spacer are always provided with the wheelchair).

Insert the rear frame making sure that the black buckles are assembled in the frame tube and in the crossbar tubes.

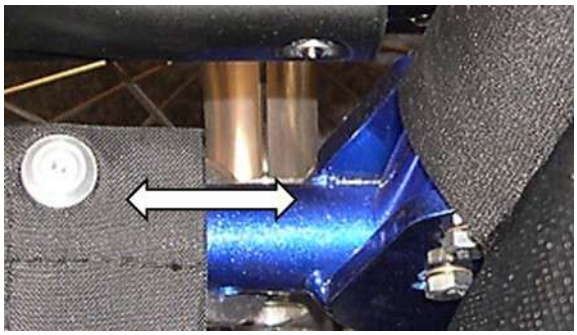
Fix the frame to the inner connecting tube using the pre-drilled holes.

Follows next page

SEAT DEPTH

Now, unfold the wheelchair and, according to the length of the armrest, see the hole of the three through which you will fix the armrest's front support.
It is possible, like in this case, you have to fix the support using the same hole where it is present the bolt that fixes the frame. Just remove that bolt and fix it using the next hole. Now you can fix the support. The stability of the frame is not altered.
If the wheelchair is not equipped with Flip-up armrest, skip this step and read the note at the end of this sheet.
Repeat the same operation on the other side of the wheelchair until this step.



With seat depth 40 cm (therefore without spacers between crossbar and rear frame) the gap between the seat canvas and the backrest tube is small, on the other hand, that gap increases by 2.5 or 5 cm with seat depth 42.5 or 45 cm.
However, the vanity flap connecting the seat canvas to backrest upholstery covers that gap.

Notes: if the wheelchair is equipped with **Desk armrests**, the support for this armrest is fixed using two of the three holes here indicated.
If fixed to holes 1 and 2, there is never interference.
If fixed to holes 2 and 3 and the seat depth becomes 40 cm (with no spacers), the inner tube reaches over the hole 3. The diameter of the inner tube holes is 6 mm, whereas the diameter of the hole to fix the armrest support is 8 mm.
Now you can decide whether to move the support to hole 2 and 3 or enlarge the hole of the inner tube. In both cases, you have to remove the support.

If the wheelchair is equipped with **tubular armrests**, the mudguard is fixed to the backrest support and to the frame with the bolt 4. To perform the seat depth adjustment, remove the mudguard. When you re-mounted, the fixing points will be the same.

FLIP-UP ARMREST

Until march 2020

Height adjustment.

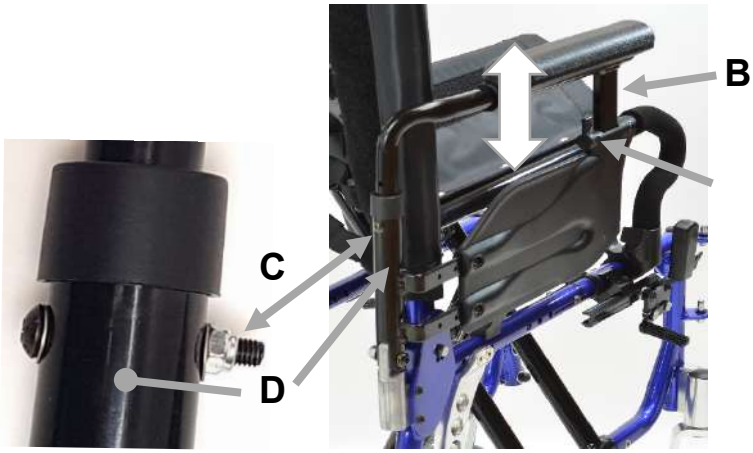
The user can easily adjust the Flip-up armrest in height.

Turn the lever **A** and change the height using the pre-drilled holes on the tube **B**.

That is possible only in absence of the bolt/washer/nut **C** on the rear side of the armrest frame that have pre-drilled holes that corresponds to those of the tube **D**.

The bolt/washer/nut **A** allows for locking the height adjustment once you have decided the correct position.

It also make the armrest a little more stable (less play).



Length adjustment.

You can adjust the armrest in length in order to better adapt it according to the seat depth of the wheelchair.

Separate the lower and upper side of the armrest by working as for height adjustment until the two parts come apart. (If the bolt/washer/nut **C** is present, remove it first).

<u>Adjusting the lower part of the armrest.</u>

Remove bolts/washers/nuts **E**.

Slide the two plates of the tube **D** frontward or backward until aligning their holes with those on the skirt guard.

The length of the plates, at origin, allows for four positions.

The shortest length is possible only if you cut the plates 25 mm off.

Once you have chosen the length, fix the plates of the tube **D** with the bolts/washers/nuts **E**.

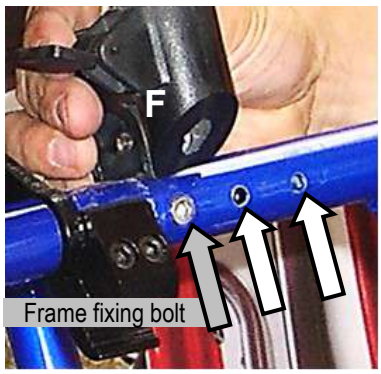
The adaptation may also envolve the front support **F**.

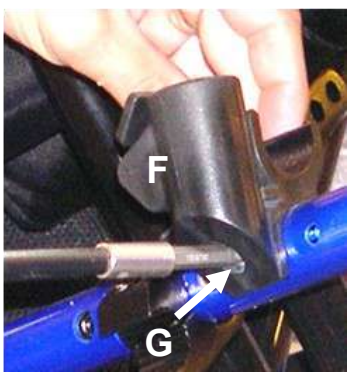
Before starting the adjustment, check if you can move the front support **F** to another pre-drilled hole on the frame at 25 or 50 mm.

To move the support **F**, remove the bolt/washer/nut **G** and fix the support in another position.

It is possible, like in this case, you have to fix the support **F** using the same hole where it is present the bolt that fixes the frame. Just remove that bolt and fix it using the next hole. Now you can fix the support.

The stability of the frame is not altered.





Follows next page

FLIP-UP ARMREST

Until march 2020

Adjustment of the upper side of the armrest.

Remove the bolt **I**.

Now, the inner tube **L** and the outer tube with the pad are separated.

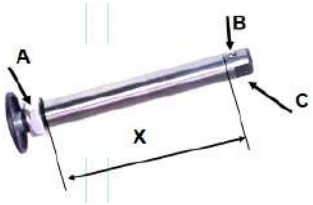
Using the holes on the inner tube **L**, at the same 25 mm from one another, fix the two parts together according to the lower side of the armrest.

Insert the upper part into the lower part.

Note: you can remove the armrest pad if you also screw off the bolt that is accessible from the rectangular tube and only with a long screwdriver.

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.

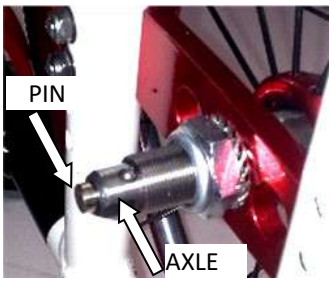
If the wheel comes off, the distance **X** between the nut **A** and the balls **B** is too short, therefore, it is necessary to unscrew the nut **A** while holding the point **C** of the axle. **If there is play,** the distance **X** between the nut **A** and the balls **B** is too long, therefore,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