

FRONT TILLER ASSEMBLY REBUILD

This tutorial shows how to disassemble and re-assemble the Front Tiller Assembly (No Foil/Mini tiller)

1. DISASSEMBLE TILLER ARM

TOOLS REQUIRED

ID	Description	Task
N/A	Small flat screwdriver	Release zip tie latch
N/A	Side Cutter or Box Cutter Knife	Cutting Zip Tie from Front Tiller Pivot Junction

1.1 Remove the zip tie head/latch by releasing the ratchet by lifting the pawl in the head of the tie. Alternatively drill through the centre of the latch with a 7 mm drill bit to release the ratchet.



INFORMATION: The zip tie parts are not intended to be re-usable and has to be replaced after removal of the zip tie head/latch.

1.2 Remove the Mini Tiller Pivot by pulling it forward away from the Front Tiller Arm.



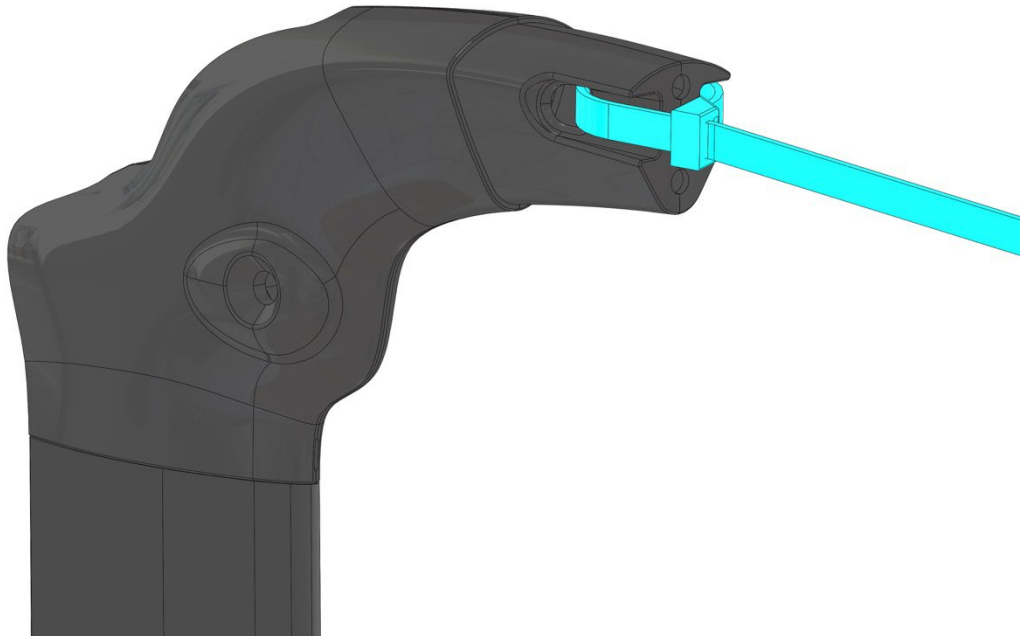
INFORMATION: Inspect the Mini Tiller Pivot for damage. Too much play in the fitting to the Front Tiller Arm is not desirable and can be corrected by replacing the Mini Tiller Pivot .

1.3 Remove the Front Tiller Arm by pulling it forward and away from the Front Tiller Pivot Junction.



INFORMATION: No adhesive is used on this joint. Given the taper fit, the Front Tiller Arm fits tightly to the Front Tiller Pivot Junction and some force may be required to free the Front Tiller Arm, but a hard pull is usually sufficient to free the Front Tiller Arm from the Front Tiller Pivot Junction.

1.4 Remove the Zip Tie by cutting it free from the Front Tiller Pivot Junction



INFORMATION: Replacement zip ties can be supplied by Manta5 but a standard UV resistant zip tie can be used with a length of 700 mm and width of 9mm.

2. DISASSEMBLE FRONT FOIL STRUT FROM FRONT TILLER PIVOT

TOOLS REQUIRED

ID	Description	Task
N/A	Rubber Mallet (black)	Remove Front Foil Shoe by tapping downward on aft end of shoe

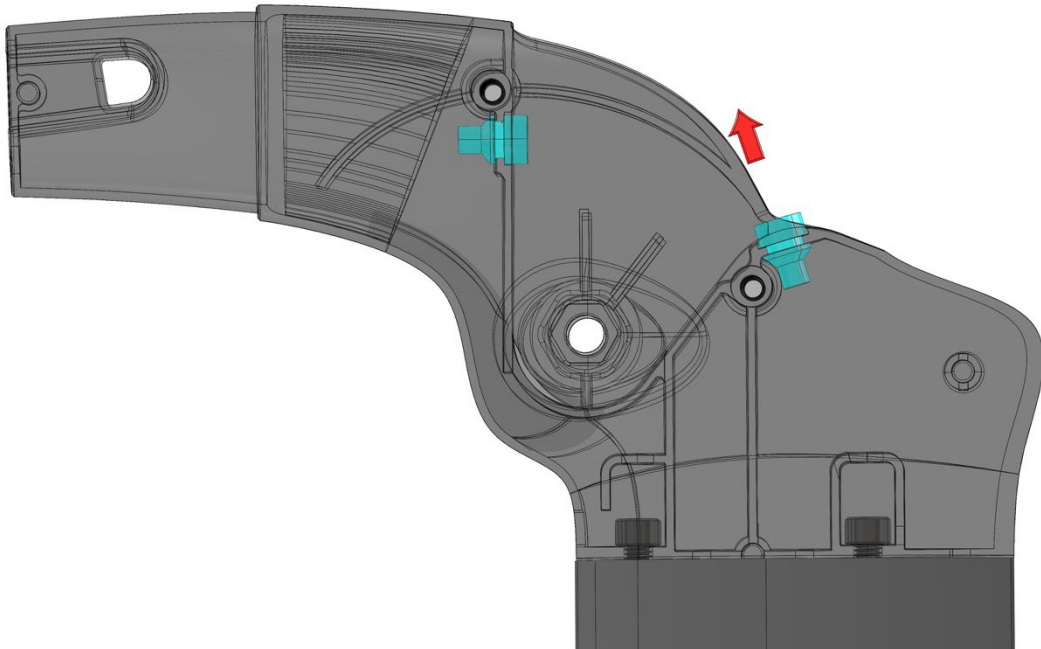
N/A	Long Nose Pliers	Remove Rubber Bump Stops from Front Tiller Pivot Junction
N/A	M5 Hex Key with ball end	Loosen M6 Cap Screws

2.1 Remove the Front Foil Shoe (plastic material) [Tools: By hand or Rubber Mallet].

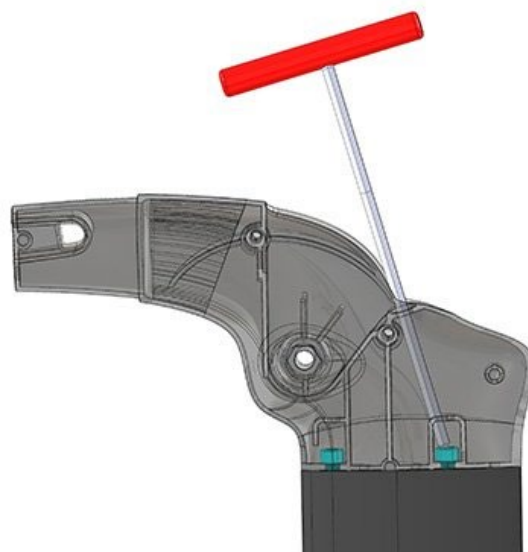


INFORMATION : Sand and grit working its way in between the Front Foil Shoe and Front Tiller Strut can make it harder to remove the shoe. Tapping the aft end of the shoe with a Rubber Mallet or using a plastic or wooden block is an effective method for removal.

2.2 Remove the aft Rubber Bumper [Tools: Long Nose Pliers]



2.3 Loosen both of the M6 x 25mm aluminium screws by turning anti-clockwise and alternating between the front and aft screws. [Tools: M5 Hex Key with ball end]



INFORMATION : For the aft screw, ensure that the M5 Hex Key with ball end fits and positively engages the M6 screw head before applying any force to loosen or tighten the aft screw.

2.4 Remove the Front Tiller Strut from the Front Tiller Junction.

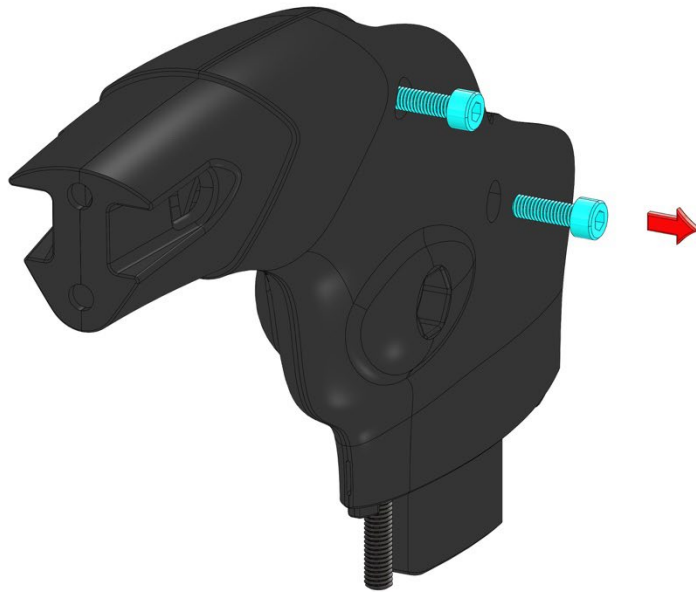


3. DISASSEMBLE FRONT TILLER PIVOT JUNCTION

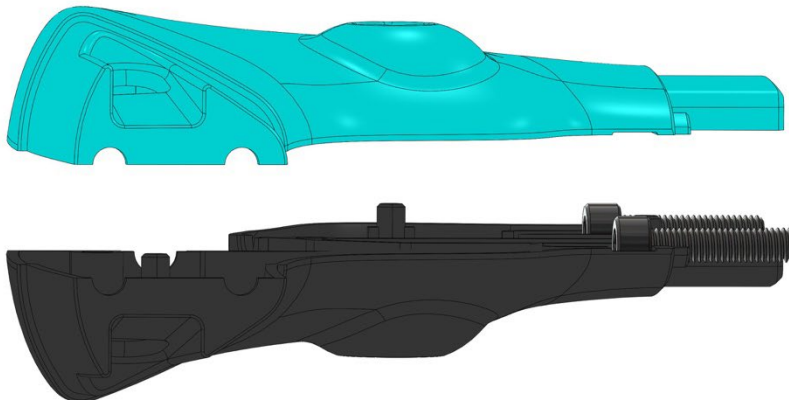
TOOLS REQUIRED

ID	Description	Task
N/A	M4 Hex Key with flat or ball end	Loosen M5 x 16 socket head cap screws

3.1 Remove the two M5 X 16 aluminium cap screws. [Tools: M4 Hex Key]



3.2 With the Front Tiller Pivot Junction flat on its RH side, remove the LH side of the assembly. Pay attention to the position of the two captive M6 X 25 mm aluminium socket head screws.

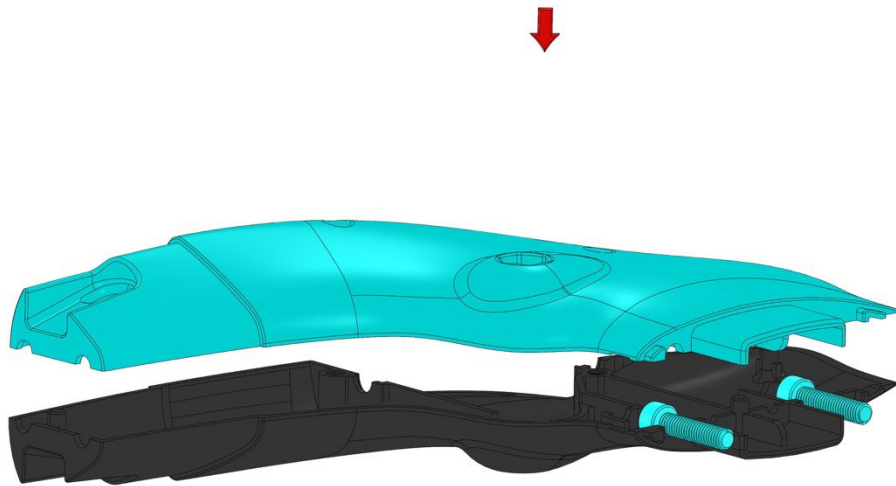


4. ASSEMBLE FRONT TILLER PIVOT JUNCTION

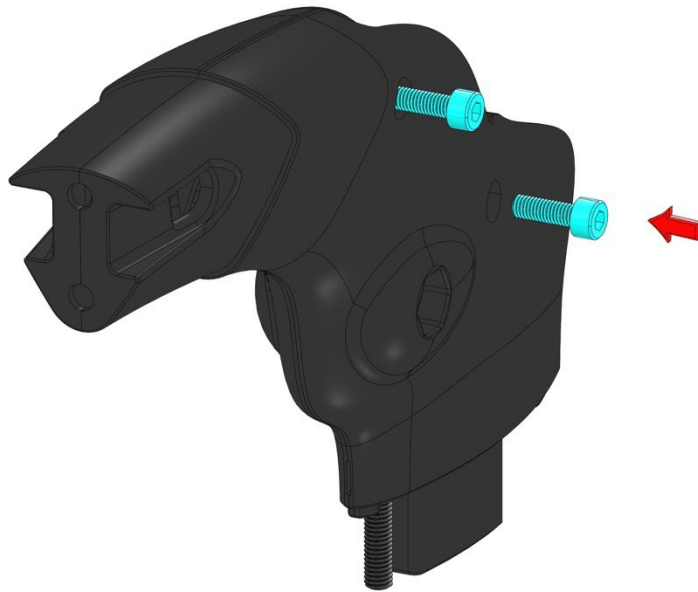
TOOLS REQUIRED

ID	Description	Task
N/A	M4 Hex Key with flat or ball end	Fasten M5 x 16 socket head cap screws

4.1 Mate the LH side of the Front Tiller Junction to the RH side after placing the M6 X 25 aluminium screws in the screw pockets. The screws are fitted without any washers. [Tools: By Hand Only]



4.2 Insert and fasten (to a torque value of 4 Nm) the two M5 X 16 mm aluminium cap screws from the LH side of the assembly. [Tools: M4 Hex Key].

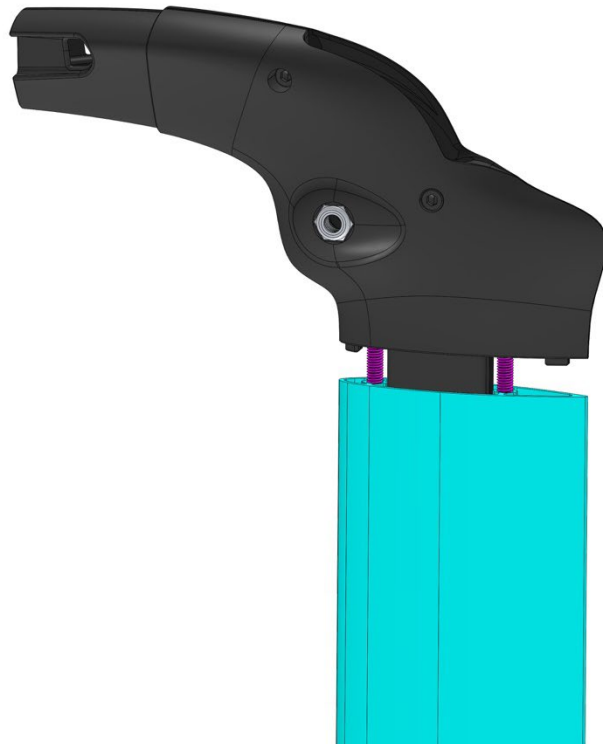


5. FIT FRONT TILLER STRUT

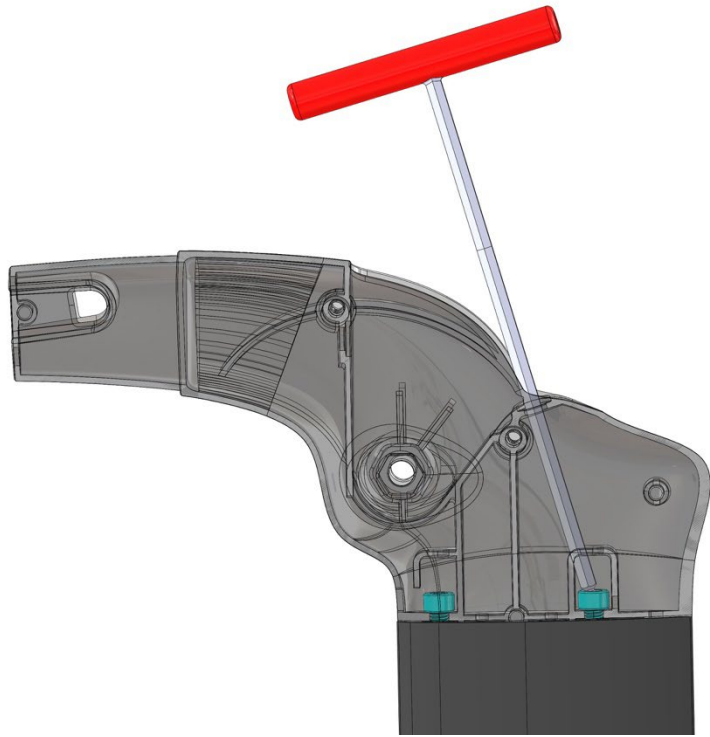
TOOLS REQUIRED

ID	Description	Task
N/A	Hex Key 3 mm	M4 Cap Screws

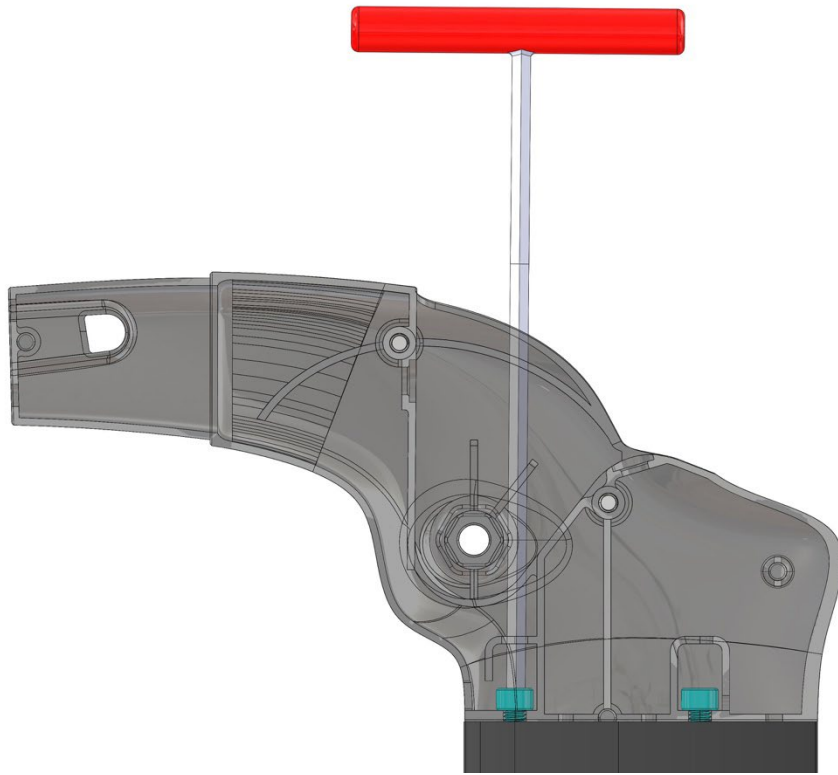
5.1 Align the Front Tiller Strut with the rounded end facing forward and fit it to the Front Tiller Junction Assembly.



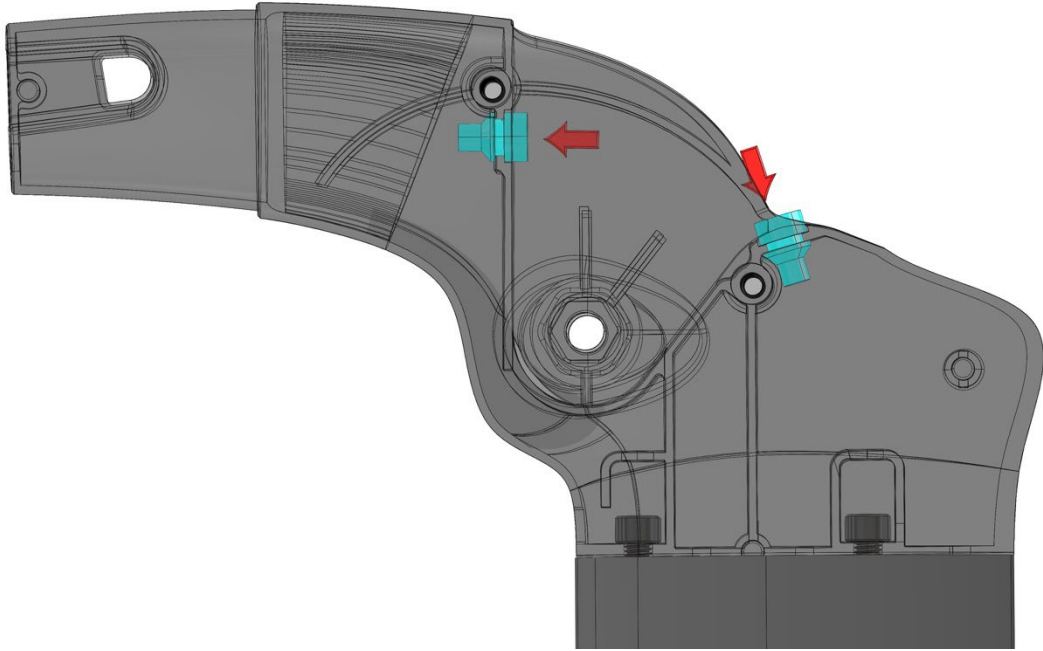
5.2 Fasten the aft screw and front screw to torque value: 5 Nm by alternating between the two. Make 4 to 5 fastening turns on one screw before switching to the other while keeping progress even. Access to the aft screw is at a 20 degree angle and through the hole that holds the after Rubber Bumper in place when the assembly is completed. [Tools: 5mm Hex Key]



5.3 Fasten the front screw at the same time as the aft screw by alternating between the two.



5.4 Apply biodegradable grease to the Rubber Bump Stops and fit both.



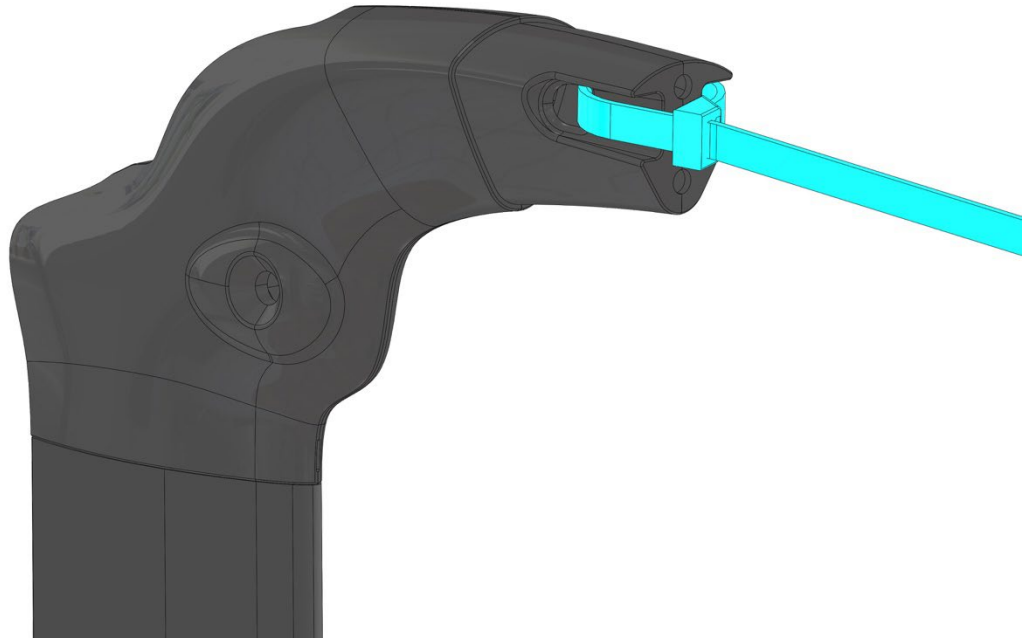
INFORMATION: Use a push and turn action when inserting the Rubber Bump Stops. A piece of cloth can be used to increase traction against the rubber surface when fitting the bump stops.

6. FIT FRONT TILLER ARM & MINI TILLER PIVOT

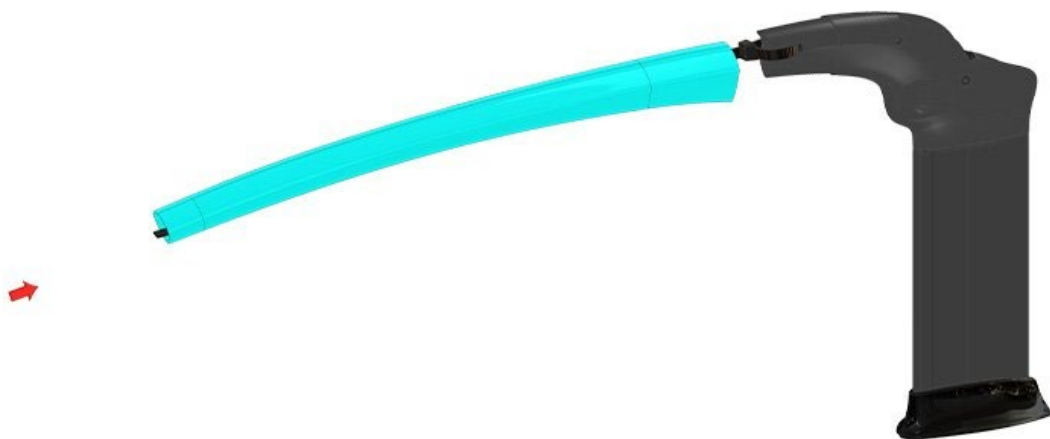
TOOLS REQUIRED

ID	Description	Task
N/A	Side cutter pliers	Cut cable tie to length

6.1 Fit full length cable tie to Front Tiller Pivot Junction.



6.2 Firmly push the Front Tiller Arm onto the Front Tiller Pivot Junction with the zip tie threaded through the centre of the Tiller Arm.

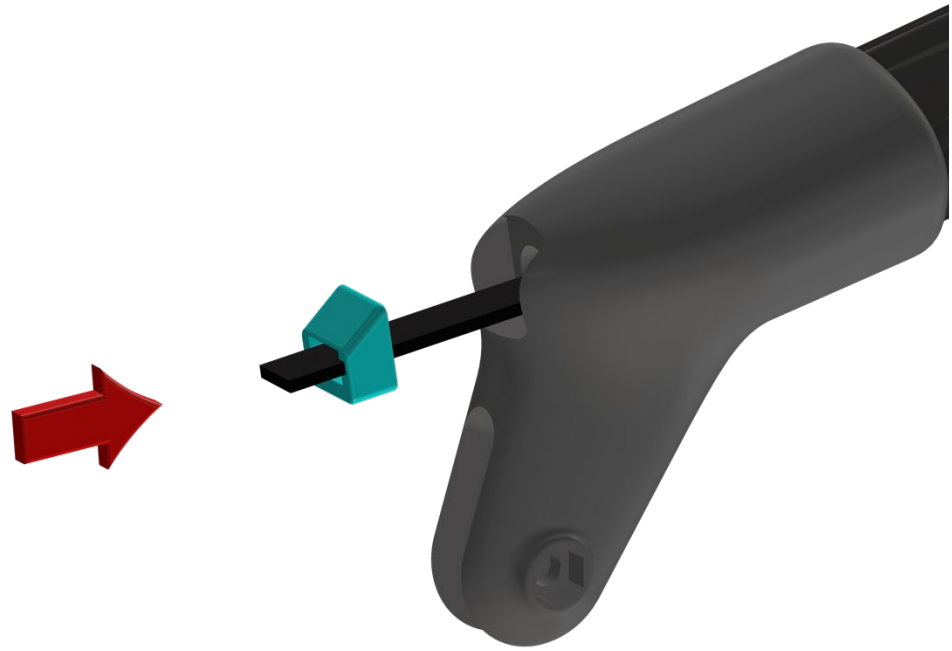


6.3 Fit the Mini Tiller Pivot onto the end of the Front Tiller Arm with the zip tie threading through the top round hole in the Mini Tiller Pivot.



INFORMATION: It is acceptable to apply a layer of black PVC electrical tape to the end of the Front Tiller Arm to improve the tolerance and fit between Front Tiller Arm and Mini Tiller Pivot.

6.4 Cut down a second zip tie and use the ratchet end on the end of the Mini Tiller Pivot to form a tensioned lock tie with the first zip tie. Tension the zip tie assembly by pulling the protruding piece while holding the latch of the cut down zip tie using a force of 10-12 kg.



6.5 Create a tidy end by cutting down the full length zip tie flush with the head of the second zip tie. [Tools: Side Cutter Pliers]



7. FIT FRONT FOIL SHOE

TOOLS REQUIRED

ID	Description	Task
N/A	N/A	Fit Front Foil Shoe

7.1 Fit the Front Foil Shoe to the bottom of the Front Tiller Strut with the rounded end forward.

