

# *Merits*

## *S331/S341 series* *Service Manual*

*Nov.1.2006 V1*

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*The numbers shown in this service manual is just for reference. The part numbers should be in accordance with current exploded drawing*

# 1. Introduction

The purpose of this manual is to provide dealers and/or distributors with the product information and instructions that are required for servicing the [S331/S341 scooter](#).

## 2. Service Guide

The [S331/S341 scooter](#) consists of four main parts:

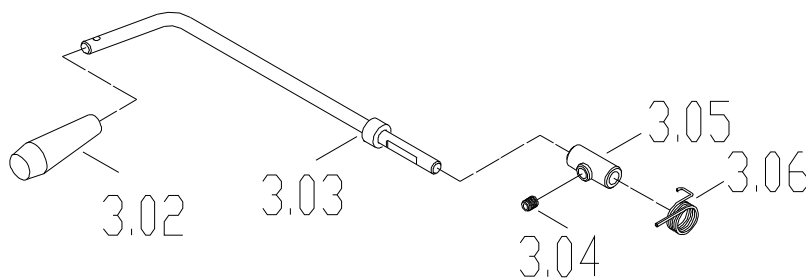
- Seat Assembly
- Front Frame Assembly
- Suspension Frame Assembly
- Tiller Assembly

### 2.1. How to replace or repair the Seat Assembly

The Seat assembly includes seat body, seat base plate, slide and left / right armrests.

#### 2.1.1. To remove seat body assembly

Pull the end (3.02) of the swivel lever (3.03) under the seat till unlock it and rotate the seat a little bit to the position where you can feel the seat rotate freely then lift up the seat body assembly.

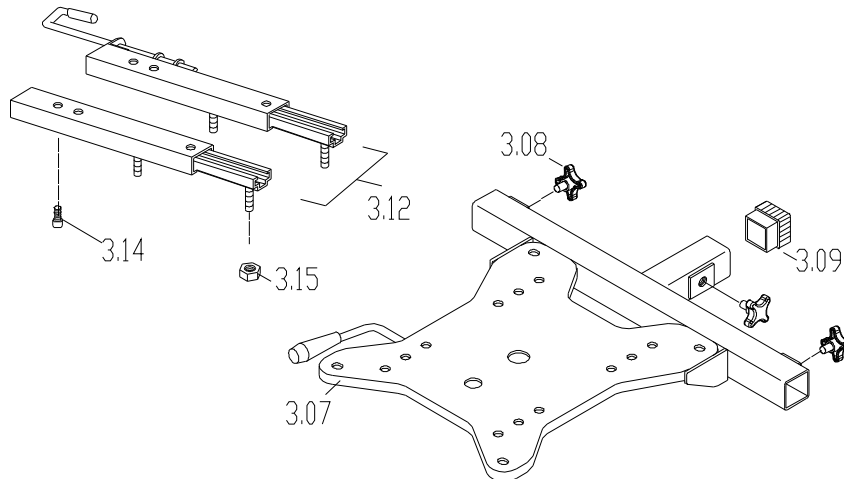


#### 2.1.2. To replace the seat base plate

- ◆ When should you replace the seat base plate?
  - ◇ If the seat base plate is deformation.
  - ◇ If the seat base plate out of shape due to an accident.
- ◆ How to replace the seat base plate?
  - ◇ Please proceeding steps as follows if it has to replace.

Use ratchet & socket to loosen four screws (3.40) and spring washers

(3.41) from the bottom of the seat body assembly, then remove the seat base plate.



#### 2.1.3. To replace the slide

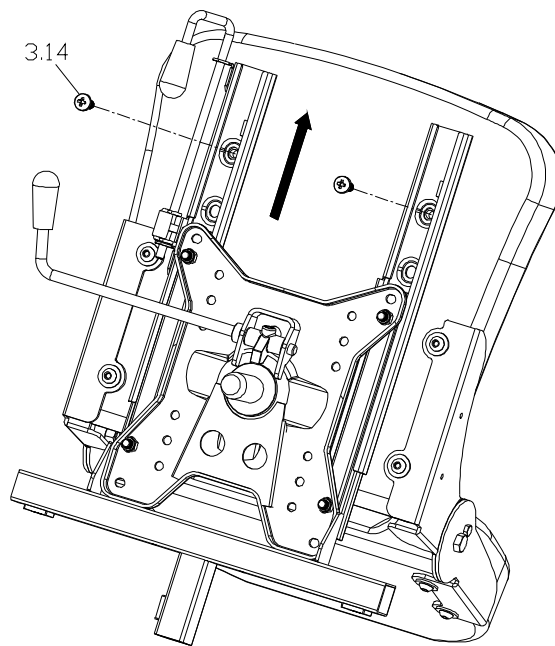
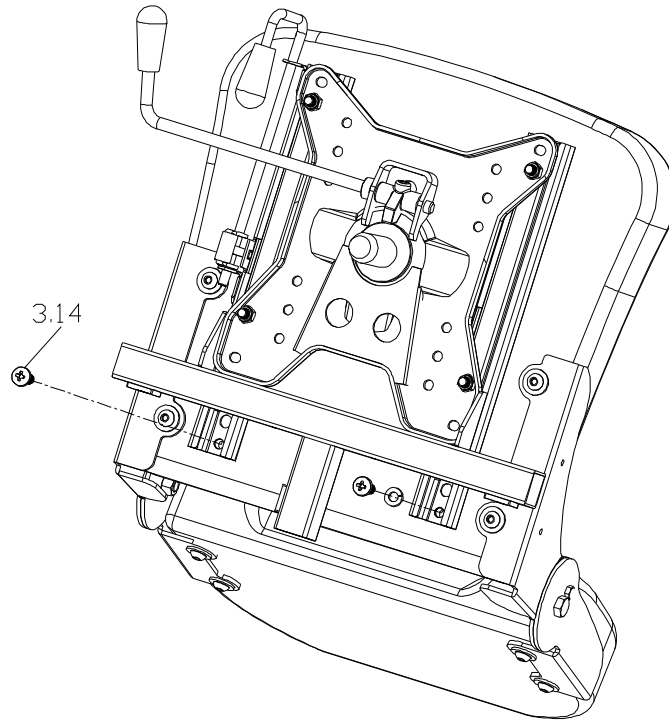
- ◆ When should you replace the slide?
- ◇ If the seat base plate is deformation.
- ◇ If the seat base plate out of shape due to an accident.
- ◆ How to replace the slide?
- ◇ Please proceeding steps as follows if it has to replace.

Use hex. tools to loosen four screws (3.14) from the bottom of the seat body assembly, then remove the slide (3.12).

#### 2.1.4. To disassemble seat body

- ◆ When should you replace the seat body?
- ◇ If the seat body is worn out.
- ◇ If the seat body is pierced or scratched by something.
- ◇ If the scooter crashed cause the seat body out of shape.
- ◆ How to replace the seat body?
- ◇ Please proceeding steps as follows if it has to replace.

Follow the following step to disassemble seat body. a) Remove seat body assembly (see section 2.1.1). b) Use ratchet & socket to loosen rear two screws (3.14) fixed the slide rails. c) Pull the slide swivel lever up, then slide the seat body forward to limit. d) Use hex. tools to loosen the other screws (3.14) fixed the slide rails.

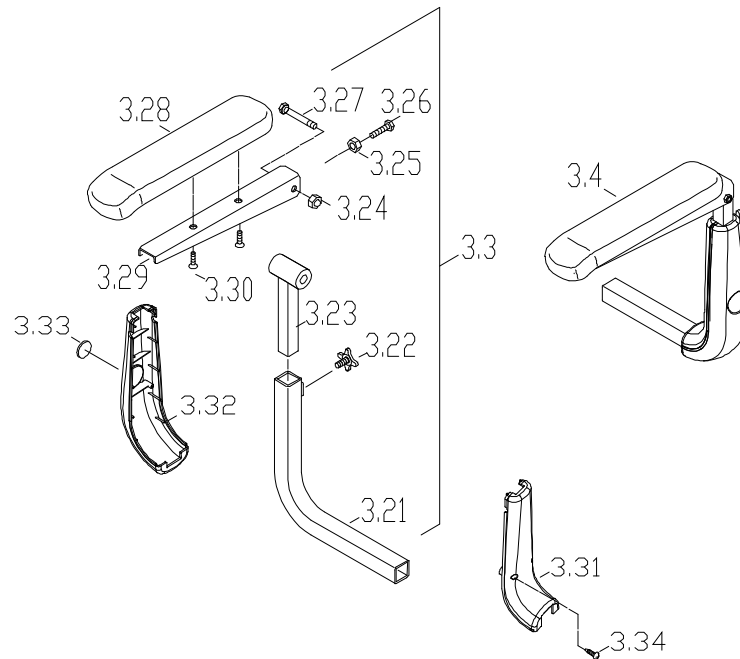


#### 2.1.5. To replace the arm pad

- ◆ When should you replace the arm pad?
- ◇ If the arm pad is worn out.
- ◇ If the arm pad is pierced or scratched by something.
- ◇ If the scooter crashed cause the arm pad out of shape.
- ◆ How to replace the arm pad?
- ◇ Please proceeding steps as follows if it has to replace.

Revolve the knob (3.35) and pull the armrest assembly outside. If the

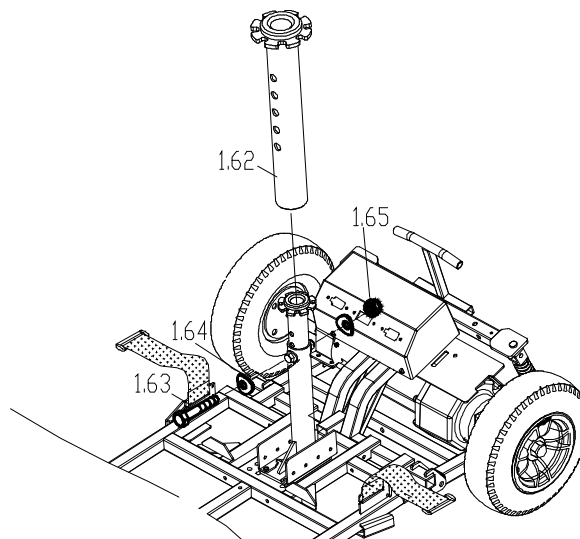
arm-pad (3.28) is broken, use the screw driver to loosen two screws (3.30) and replace it.



#### 2.1.6. To replace the seat post

- ◆ When should you replace the seat post?
- ◇ If the seat post is deformation.
- ◇ If the seat post out of shape due to an accident.
- ◆ How to replace the seat post?
- ◇ Please proceeding steps as follows if it has to replace.

Use two open-end wrenches to loosen hexagon fixed bolt (1.63) and screw (1.65). Adjust the seat height based (1.62) to the demanded position (there are 5 holes on the tube for adjusting the seat height). Then insert and tighten the bolt.



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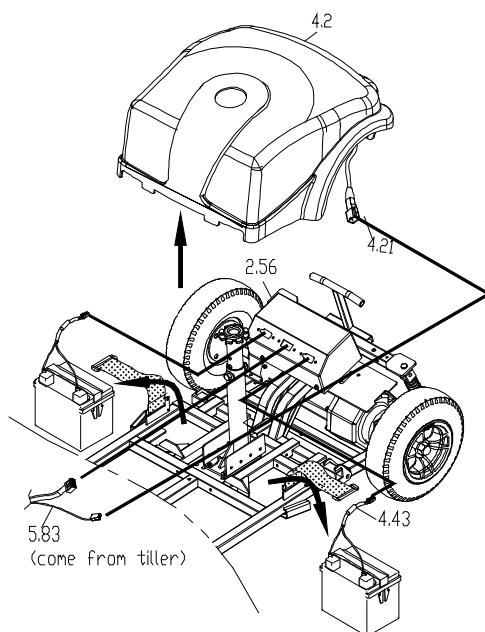
## 2.2. Suspension Frame Assembly(S331/S341 Series)

The suspension frame assembly includes suspension frame, driven tire assembly, transmission assembly, absorber, anti-tipper and rear bumper.

### 2.2.1. To remove Rear shroud assembly

- ◆ When should you replace the rear shroud?
- ◇ If your scooter can not avoid knocked or bumped cause the shroud broken.
- ◆ How to replace the rear shroud?
- ◇ Please proceeding steps as follows if it has to replace.

1. Remove the seat body assembly first (see section 2.1.1),then pull up rear shroud assembly (4.2) from chassis, and unplug the connector of cable loom (indicator & rear light) (4.21) which connect with main cable loom(5.83)
2. Untie the battery strap and unplug the connector of battery harness from controller panel(2.56),then remove the battery



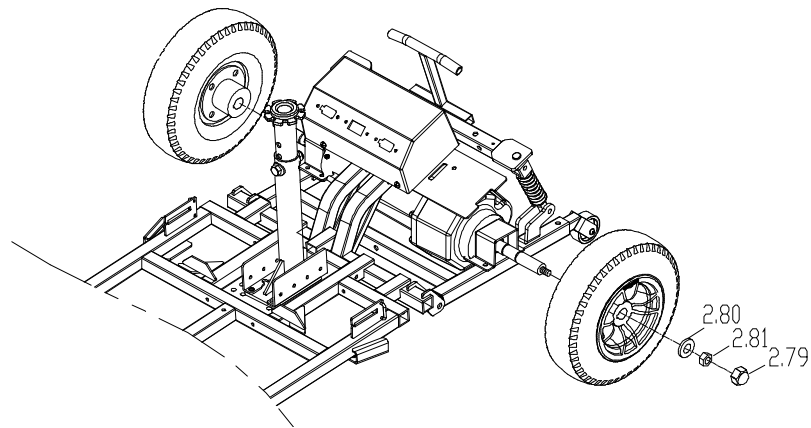
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### 2.2.2. To remove the driven wheel assembly

- ◆ When should you replace the driven wheel assembly?
- ◇ If your driven wheel assembly is deformation.
- ◇ If the driven wheel assembly out of shape due to an accident.
- ◇ If the driven wheel assembly is worn out.
- ◇ If the driven wheel assembly is pierced by something.
- ◆ How to replace the driven wheel assembly?
- ◇ Please proceeding steps as follows if it has to replace.



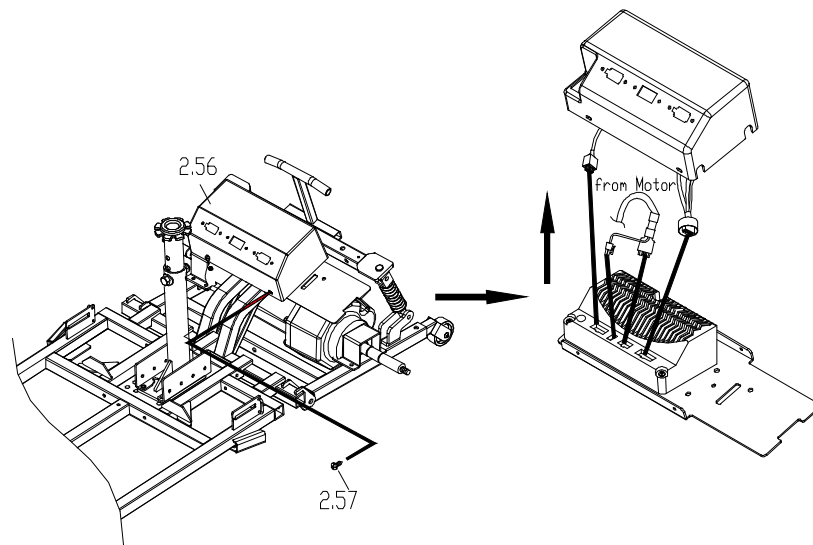
1. Pull out the screw cover (2.79) by hand.
2. Loosen the nylon nut (2.81) by hex. tool and take it out.
3. Along the output shaft axial to take the driven wheel assembly out.
4. The other side follow the step above.(1 ~ 3)



Illus. 08

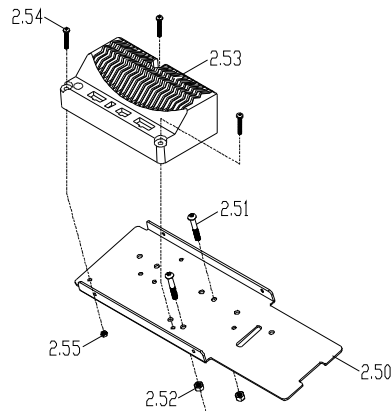
### 2.2.3. To remove the controller panel assembly

1. Loosen the screw (2.57) 4 pcs. by (+) screw driver, then pull up the controller panel(2.56).
2. Unplug 4 connectors from controller



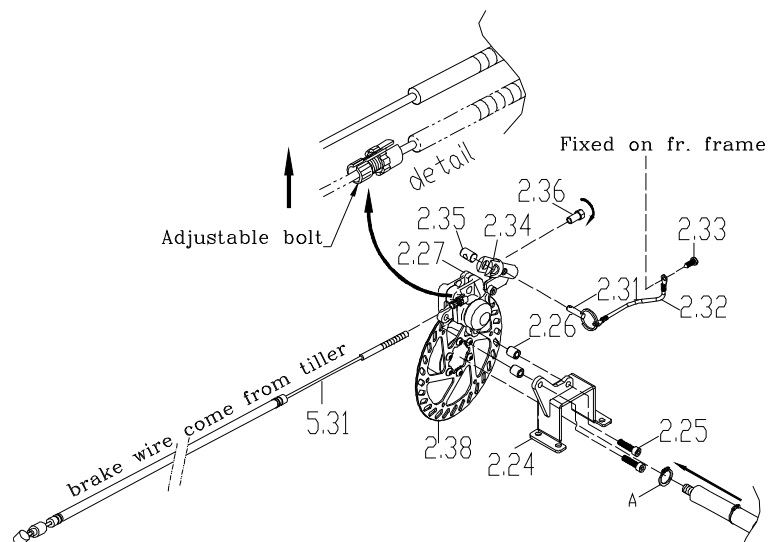
### 2.2.4. To remove the controller mounting plate and controller

1. Loosen the screw (2.51) and nylon nut (2.52) by hex. tools and wrench.
2. Take away the controller mounting plate and controller from the frame.
3. Loosen the screw (2.54) and nylon nut (2.55) by hex. tools and wrench ,then separate the mounting plate and controller.



### 2.2.5. To replace the disk brake

1. Pull out the quick release pin (2.31) from brake arm (2.34), and take away related parts (2.34~2.36)
2. Loosen the adjust spacer (2.36) till away from the end of brake wire.
3. Loosen the adjustable bolt which attached on the disk brake(2.27), and make the groove align the same direction.
4. Put the brake wire up from disk brake(2.27) directly.
5. Take the C-clip (A) out from input shaft of transmission by pliers.
6. Loosen the screw (2.25) by hex. tools.
7. Along the output shaft axial take out the disk brake (2.27) with brake disk (2.38).

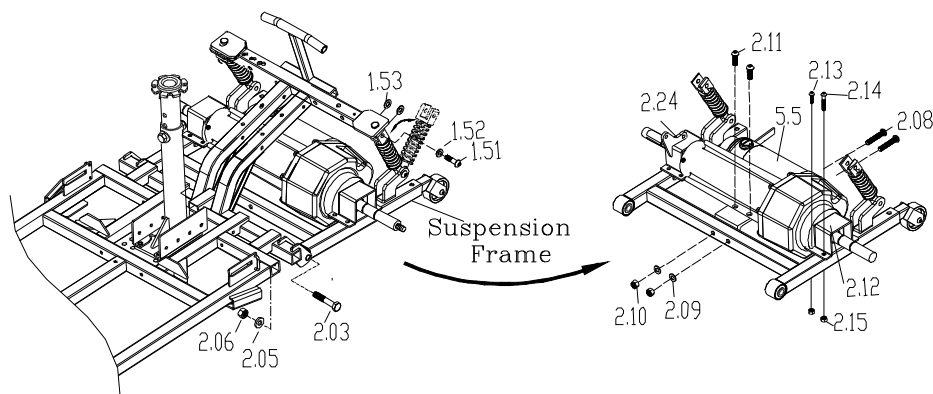


### 2.2.6. To replace the transaxle assembly

- ◆ When you should replace the transaxle assembly and the suspension frame?
- ◇ If the transaxle assembly has noise.
- ◇ If the transaxle assembly can't drive the scooter.
- ◇ If the transaxle assembly out of shape due to an accident.
- ◇ If the transaxle assembly is deformation.
- ◇ If your suspension frame is deformation.

- ◇ If the suspension frame out of shape due to an accident.
- ◆ How to replace the transaxle assembly and the suspension frame?
- ◇ Please proceeding steps as follows if it has to replace.

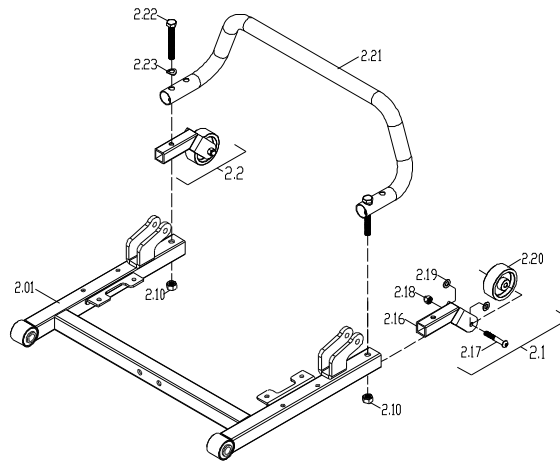
1. Loosen the screw (1.51) by hex. tools. (two side)
2. Loosen the screw (2.03) and nylon nut (2.06) by hex. tools and wrench , then take the suspension frame away from front frame.
3. Loosen the screw (2.08) and nylon nut (2.10) by hex. tools .
4. Loosen the screw (2.13) and nylon nut (2.14) by hex. tools and wrench , and take off the fixing stand (2.12) and brake fixing stand (2.24)
5. Take off the transaxle assembly (5.5) from suspension frame.



#### 2.2.7. To remove the rear bumper and anti-tipper assembly

- ◆ When should you replace the rear bumper/rear anti-tipper assembly?
- ◇ If the rear bumper/rear anti-tipper assembly out of shape due to an accident.
- ◇ If rear bumper/the rear anti-tipper assembly is deformation.
- ◆ How to replace rear bumper/the rear anti-tipper assembly?
- ◇ Please proceeding steps as follows if it has to replace.

1. Loosen the screw (2.22) and nylon nut (2.10) two sides by wrench to take out the rear bumper (2.21).
2. At the same time, pull out the anti-tipper assembly L/R (2.1/2.2) from the suspension frame (2.01).
3. Loosen the screw (2.17) and nylon nut (2.18) by (+) screw driver and wrench to take out the anti-tipper wheel (2.20)

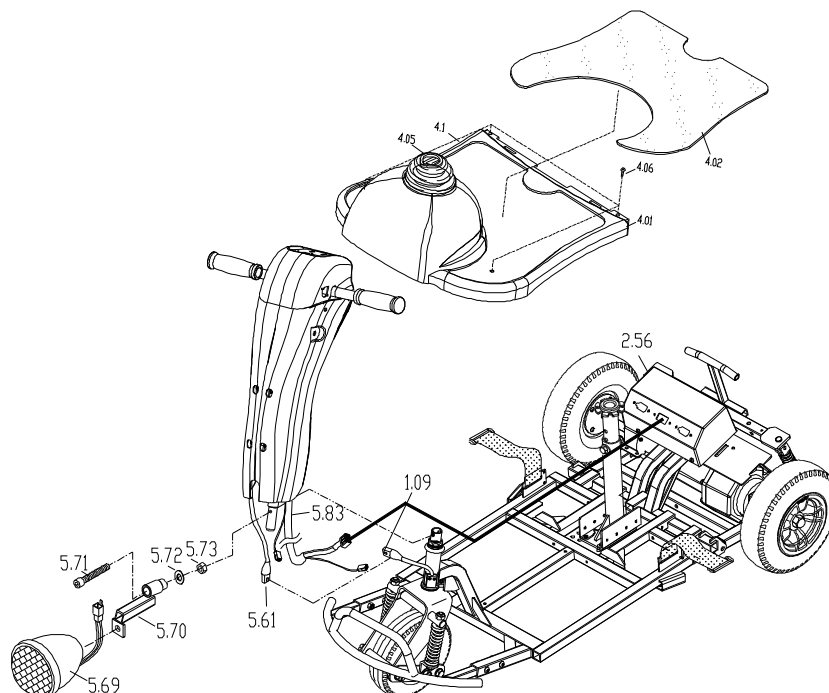


## 2.3 Front Frame Assembly (S331 Series)

The front section assembly includes front frame, front shroud, front wheel assembly and mat.

2.3.1. To replace the tiller assembly

1. Repeat step 2.2.1.
2. Separate the mat from the shroud (4.02) by hand directly, then loosen the screw (4.06) 4pcs by screwdriver to make shroud come off the chassis.
3. Pull out the connectors from tiller main cable loom (5.83) which connect to controller panel (2.56) 、head light (5.69) and half speed sensor.
4. Loosen the screw (5.71) and nylon nut (5.73) by hex. tools and wrench.
5. Pull out the tiller assembly from fork stem, and you can take out the shroud assembly at the same time.



### 2.3.2. To replace the front wheel with fork assembly

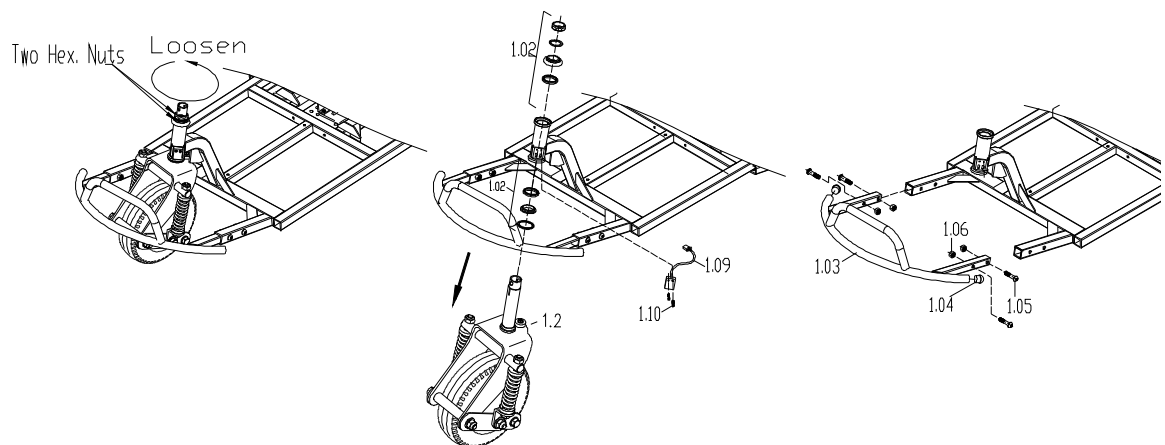
- ◆ When should you replace the front wheel with fork assembly?
- ◇ If your front wheel with fork assembly is deformation.
- ◇ If the front wheel with fork assembly out of shape due to an accident.
- ◇ If the front wheel with fork assembly is worn out.
- ◆ How to replace the front wheel with fork assembly?
- ◇ Please proceeding steps as follows if it has to replace.

Loosen the headset bearing (1.02) by wrench, and take out the front wheel with fork assembly (1.2) from front frame.

### 2.3.3. To replace the front bumper assembly

- ◆ When should you replace the front bumper assembly?
- ◇ If the front bumper assembly out of shape due to an accident.
- ◇ If front bumper assembly is deformation.
- ◆ How to replace front bumper assembly?
- ◇ Please proceeding steps as follows if it has to replace.

Loosen the screw (1.05) and nylon nut (1.06) both side by hex. tools and wrench. Then you can take out the front bumper.



### 2.3.4. To replace the front wheel

- ◆ When should you replace the front wheel with fork assembly?
- ◇ If your front wheel is deformation.
- ◇ If the front wheel out of shape due to an accident.
- ◇ If the front wheel is worn out.
- ◇ If the front wheel is pierced by something.
- ◆ How to replace the front wheel?
- ◇ Please proceeding steps as follows if it has to replace.

1. Loosen the screw (1.42) by wrench then take out the front wheel set (1.3) from the front suspension arm set (1.27).
2. Pull out the front axle bushing (1.37) by hand directly.
3. Release the air from valve of inner tire (1.32), then loosen the screw (1.38) and nylon nut (1.41) by wrench.
4. Take out the hub (1.35) and rim (1.33/1.34) to replace the tire.

### 2.3.5 To replace the suspension spring set

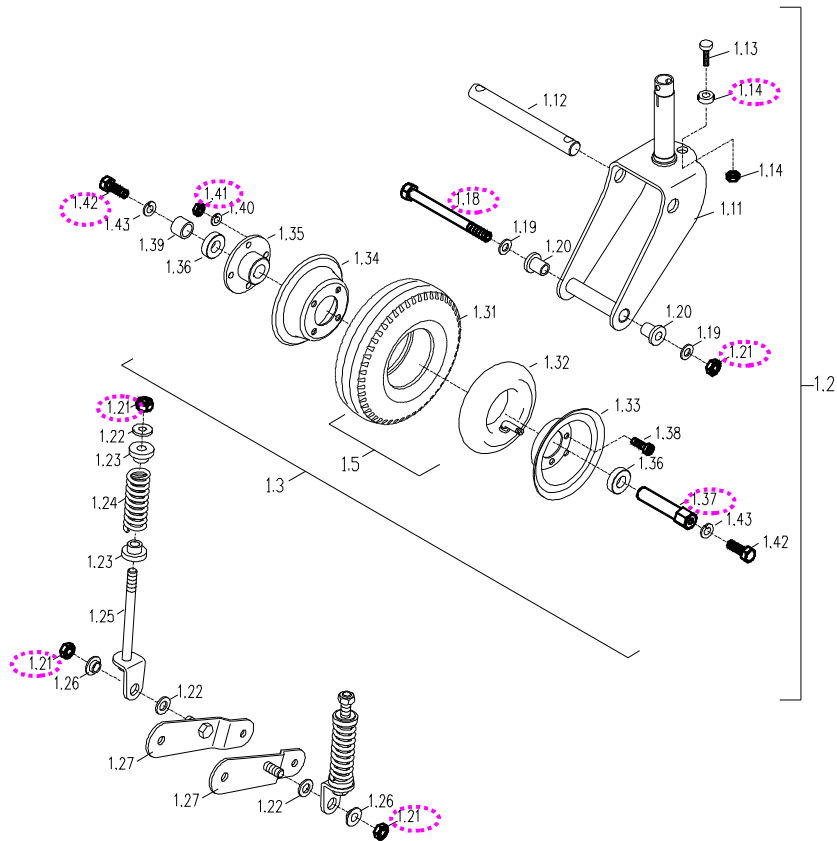
- ◆ When should you replace the suspension spring set?
- ◇ If your suspension spring set is deformation.
- ◇ If the suspension spring set out of shape due to an accident.
- ◇ If the suspension spring set is worn out.
- ◇ If the suspension spring set can't make a smooth movement.
- ◆ How to replace the front wheel?
- ◇ Please proceeding steps as follows if it has to replace.

1. Loosen the nylon nut (1.21) by wrench.(total 4pcs)
2. Pull out the spring support shaft (1.12) by hand.
3. Take out the related parts (1.22~1.26) in according with sequence.

### 2.3.6. To replace the front fork assembly

- ◆ When should you replace the front fork assembly?
- ◇ If your front fork assembly is deformation.
- ◇ If the front fork assembly out of shape due to an accident.
- ◇ If the front fork assembly is worn out.
- ◆ How to replace the front wheel?
- ◇ Please proceeding steps as follows if it has to replace.

1. Loosen the screw (1.18) and nylon nut (1.21) by hex. tools and wrench then take them out.
2. Remove front suspension arm set (1.27) and bushings (1.20).
3. Loosen the nuts (1.14)\*2pcs by wrench to remove the position rod (1.13).



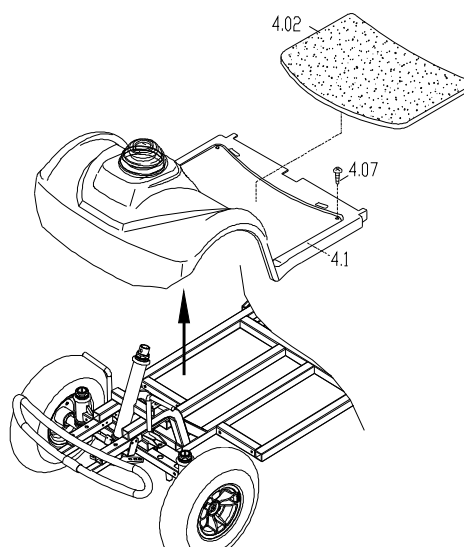
## 2.4 Front Frame Assembly (S341 Series)

The front section assembly includes front frame, front shroud, front wheel assembly and mat.

### 2.4.1. To remove the tiller assembly

1. Repeat the item 2.3.1. step 1~5.

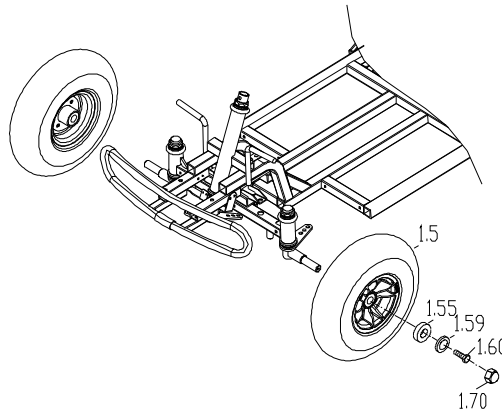
Note: Separate the mat from the shroud (4.02) by hand directly, then loosen the screw (4.07) 4pcs by screwdriver to make shroud come off the chassis. (the same as item 2.3.1. step 2)



#### 2.4.2. To replace the front wheel assembly.

- ◆ When you should replace the front wheel assembly?
  - ◇ If your front wheel assembly is deformation.
  - ◇ If the front wheel assembly out of shape due to an accident.
  - ◇ If the front wheel assembly is worn out.
  - ◇ If the front wheel assembly is pierced by something.
- ◆ How to replace the front wheel assembly?
  - ◇ Please proceeding steps as follows if it has to replace.

1. Pull out the screw cover (1.70) by hand.
2. Loosen the screw (1.60) by hex. tool and take it out.
3. Along the shaft axial to take out the driven wheel assembly, the parts 1.55 & 1.59 will come out with wheel assembly.
4. The other side follow the step above.(1 ~ 3)

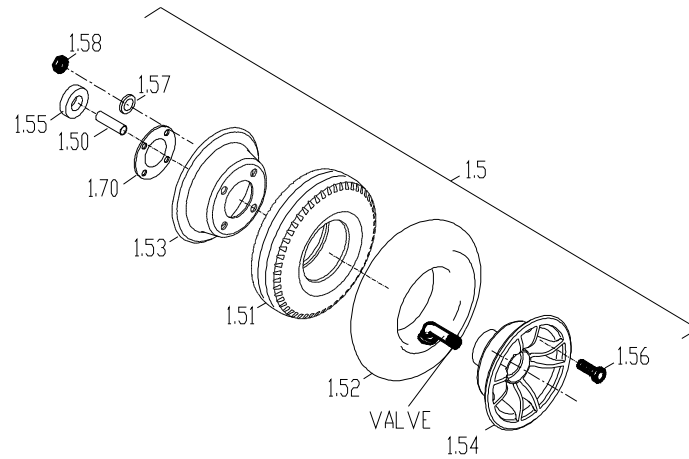


#### 2.4.3. To replace the tire of wheel assembly

- ◆ When should you replace the front wheel with fork assembly?
  - ◇ If your front wheel is deformation.
  - ◇ If the front wheel out of shape due to an accident.
  - ◇ If the front wheel is worn out.
  - ◇ If the front wheel is pierced by something.
- ◆ How to replace the front wheel?
  - ◇ Please proceeding steps as follows if it has to replace.

1. Release the air from valve of inner tire (1.52), then loosen the screw (1.56) and nylon nut (1.58) by wrench.
2. Take out the rim (1.53/1.54) to replace the tire (1.51/1.52)





#### 2.4.4. To replace the front bumper

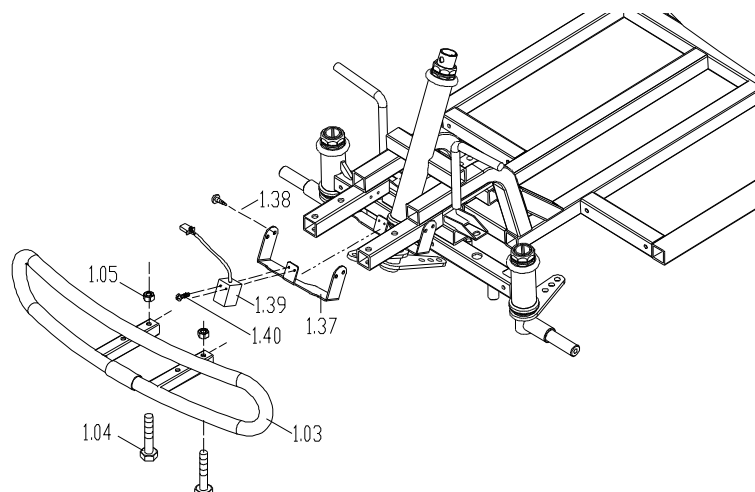
- ◆ When should you replace the front bumper?
- ◇ If the front bumper out of shape due to an accident.
- ◇ If the front bumper is deformation.
- ◆ How to replace rear bumper/the rear anti-tipper assembly?
- ◇ Please proceeding steps as follows if it has to replace.

1. Loosen the screw (1.04) and nylon nut (1.05) by hex. tool and wrench .
2. Pull out the front bumper (1.03) from front frame.

#### 2.4.5. To replace the half speed sensor bracket and sensor

- ◆ When should you replace the half speed sensor?
- ◇ If the half speed sensor is deformation.
- ◇ If the half speed sensor is not functioning well or can't not work.
- ◆ How to replace rear bumper/the rear anti-tipper assembly?
- ◇ Please proceeding steps as follows if it has to replace.

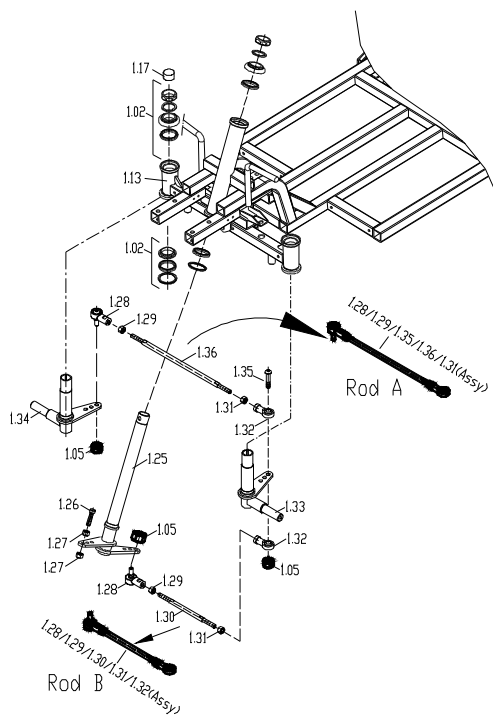
1. Loosen the screw (1.38) by screw driver.
2. Take out the sensor bracket (1.37) with sensor from front frame.
3. Loosen the screw (1.40) by screw driver to take out the sensor (1.39) from bracket.



#### 2.4.6. To replace steering mechanism

- ◆ When should you replace the steering mechanism?
- ◇ If the steering mechanism out of shape due to an accident.
- ◇ If the steering mechanism is deformation.
- ◇ If the steering mechanism has noise.
- ◇ If the steering mechanism is hard to steer.
- ◆ How to replace the steering mechanism?
- ◇ Please proceeding steps as follows if it has to replace.

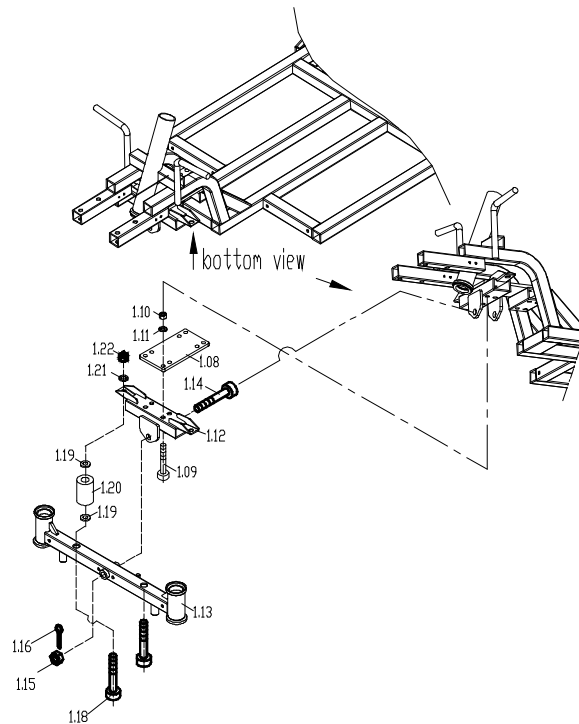
1. Loosen the nut (1.05)\*3pcs by wrench to remove Rod A and Rod B.
2. Rod A consist of 1.28/1.29/1.31/1.35/1.36, Rod B consist of 1.28/1.29/1.30/1.31/1.32, if necessary, loosen the nut (1.29) and related parts like a joint (1.28/1.32) then can wholly separate Rod A and Rod B.
3. Loosen the headset bearing (1.02) by wrench (total 3 sets), then can take out the steering tube (1.25) 、 front axle set LH (1.33) and front axle set RH (1.34) from front frame.



#### 2.4.7. To replace front suspension arm assembly

- ◆ When should you replace the suspension arm assembly?
- ◇ If the suspension arm assembly out of shape due to an accident.
- ◇ If the suspension arm assembly is deformation.
- ◇ If the suspension arm assembly has noise when drive.
- ◆ How to replace rear bumper/the rear anti-tipper assembly?
- ◇ Please proceeding steps as follows if it has to replace.

1. Remove the cotter pin (1.16) by pliers, then loosen the screw (1.14) and nut (1.15) by hex. tools and wrench.
2. Loosen the screw (1.18) and nut (1.22) to take out the front suspension arm (1.13) and related parts : urethane block (1.20)
3. Loosen the screw (1.09) and nut (1.10) \*4pcs to separate the supporting plate (1.08) from frame and front suspension bracket (1.12) from supporting plate (1.08).



## 2.5 Tiller Assembly(S331/S341 Series)

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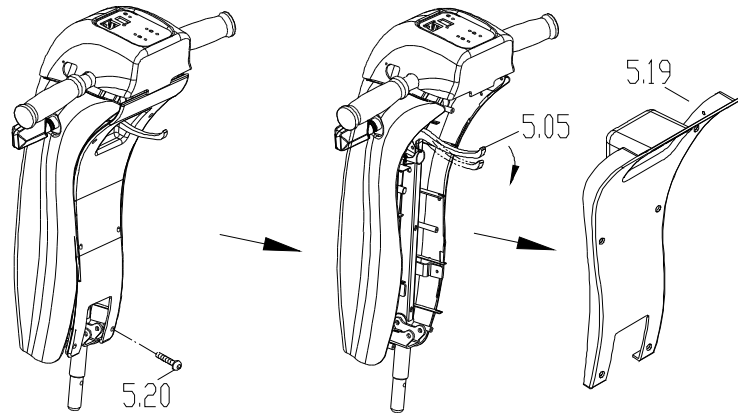
The Tiller assembly includes tiller frame, control units, main harness, shroud, adjustable component.

### 2.5.1. To replace the tiller assembly

To remove the tiller assembly from vehicle please refer to the item 2.3.1. step 1~5.

### 2.5.2. To replace the rear shroud of tiller

1. Loosen the screw (5.20)\*6pcs by screw driver
  2. Press the lever (5.05) down then take out the rear shroud (5.19).
- ◆ When should you replace the rear shroud of tiller?
  - ◇ If the rear shroud of tiller out of shape due to an accident.
  - ◇ If the rear shroud of tiller is deformation.
  - ◆ How to replace the rear shroud of tiller?
  - ◇ Please proceeding steps as follows if it has to replace.

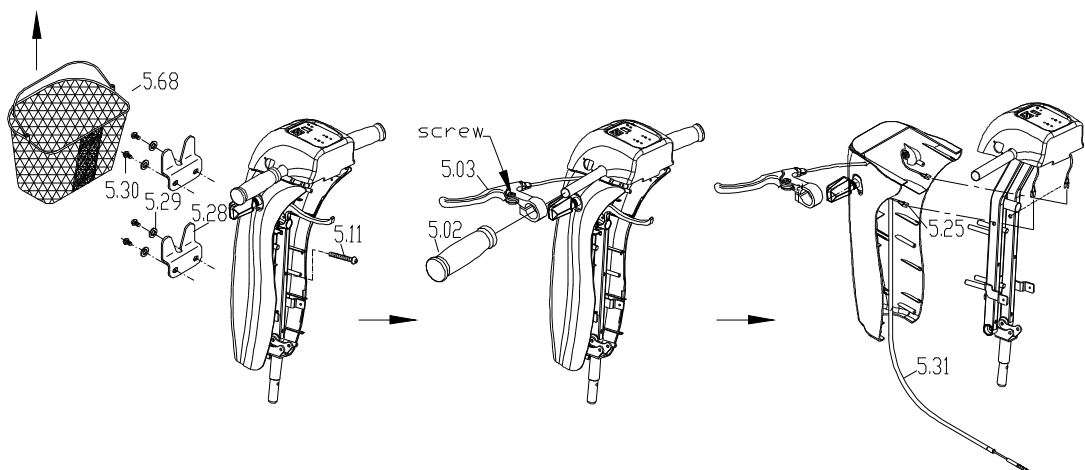


### 2.5.3. To remove the front shroud of tiller

- ◆ When should you replace the front shroud of tiller?
- ◇ If the front shroud of tiller out of shape due to an accident.
- ◇ If the front shroud of tiller is deformation.
- ◆ How to replace the front shroud of tiller?
- ◇ Please proceeding steps as follows if it has to replace.

1. Pull up the basket (5.68) by hand directly.
2. Loosen the screw (5.30)\*4pcs by hex. tools and take out the basket bracket (5.28)\*2pcs.
3. Loosen the screw (5.11)\*4pcs by screw driver.
4. Remove the grip then loosen the screw mounted on the lever (5.03) and pull it out from tiller's hand bar.
5. Unplug the connector of the indicator L/R (5.25), then take out the front shroud of tiller.

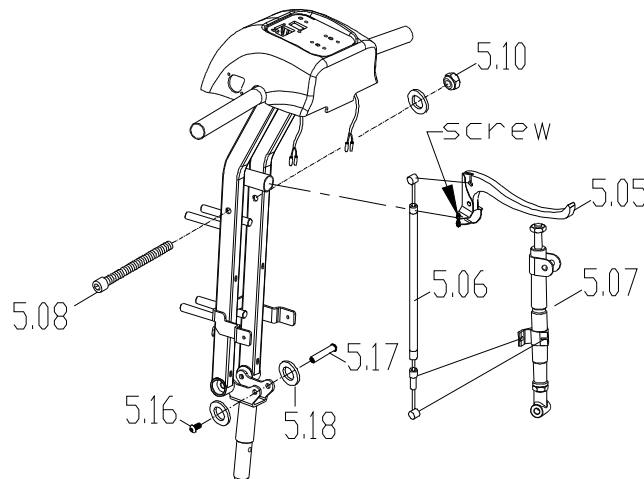
Note: Regarding to step 4 above: Remove the grip, because of there is viscose inside the grip, when you take out the grip, the best way is using air gun and air compressor to assist.



#### 2.5.4. To replace the regulation cylinder

- ◆ When should you replace the regulation cylinder?
- ◇ If the regulation cylinder out of shape due to an accident.
- ◇ If the regulation cylinder is deformation.
- ◇ If the clearance is too much to cause the tiller assembly shake.
- ◆ How to replace the regulation cylinder?
- ◇ Please proceeding steps as follows if it has to replace.

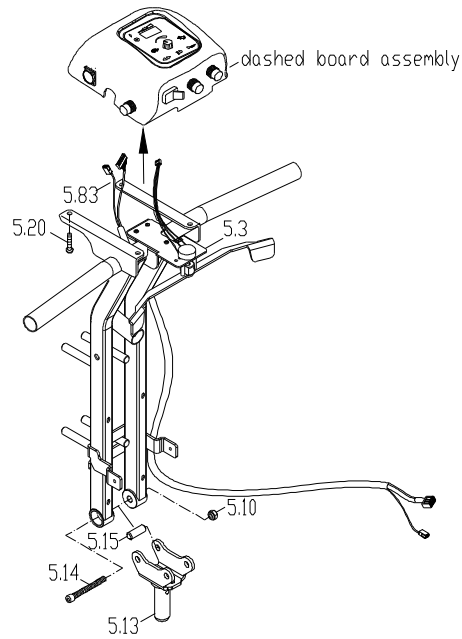
1. Loosen the screw and nut which mounted on the lever. (5.05)
2. Take out the lever (5.05) with cable/wire (5.06) from tiller frame.
3. Loosen the screw (5.08) and nut (5.10) by hex. tools and wrench then loosen the screw (5.16) (5.17) by hex. tools only.
4. Take out the regulation cylinder (5.07) 、 cable/wire (5.06) and lever (5.05) from the tiller frame together.



#### 2.5.5. To replace the dashed board assembly

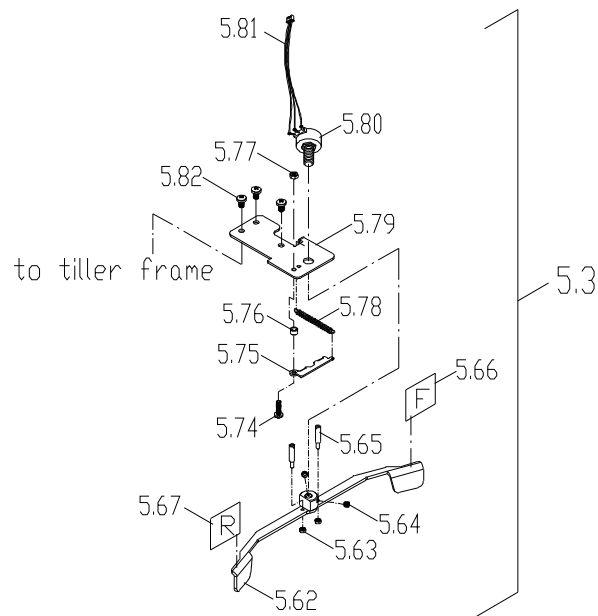
- ◆ When should you replace the dashed board assembly?
- ◇ If your dashed board assembly is deformation.
- ◇ If the dashed board assembly out of shape due to an accident.
- ◇ If your control units & harness is deformation.
- ◆ How to replace the dashed board assembly?
- ◇ Please proceeding steps as follows if it has to remove.

1. Loosen the screw (5.20)\*4pcs by screw driver.
2. Unplug the 3 connectors which from the throttle lever assy' (5.3) and main cable loom (5.83).
3. Take out the dashed board assembly from frame.



#### 2.5.6. To replace the throttle lever assembly

- ◆ When should you replace the throttle lever assembly?
  - ◇ If your throttle lever assembly is deformation.
  - ◇ If the throttle lever assembly out of shape due to an accident.
  - ◇ If your throttle lever assembly cause error code happen continuously.
  - ◆ How to replace the throttle lever assembly?
  - ◇ Please proceeding steps as follows if it has to remove.
1. Loosen the screw (5.82)\*3pcs by screw driver and take out the throttle lever assembly (5.3) from frame.
  2. Loosen the set screw (5.64)\*2pcs by hex. tools then take out the throttle lever set (5.62) with steel pin (5.65)\*2pcs from the potentiometer (5.80).
  3. Loosen the nut (5.63)\*2pcs by wrench and screw driver can take out the steel pin from throttle lever set (5.62).
  4. Take out the spring (5.78) by hand and loosen the screw (5.74) and nut (5.77) by screw driver and wrench to take out the setting plate (5.75) and spacer (5.76).
  5. Use the wrench to loosen the nut (attached to potentiometer) then separate potentiometer (5.80) and base plate (5.79).



2.5.7. To replace the electric components mounted on dashed board assembly

- ◆ When should you replace the related electric components?
- ◇ If the electric components are deformation.
- ◇ If the electric components out of shape due to an accident.
- ◇ If the electric components are difficult to operate or can't work.
- ◆ How to replace the related electric components?
- ◇ Please proceeding steps as follows if it has to remove.

1. Unplug all connectors which connect to PCB (5.37), the connectors including the charger socket assy (5.55) 、 head light button wire (5.48)\*4sets 、 indicator switch wire (5.53) 、 key switch wire (5.45) 、 speed pot. Wire (5.39) 、 power cord (5.42) and power indicator (5.41)
2. Loosen the brass stud (5.36)\*4pcs and take out the PCB from upper cover (5.32).
3. Each button 、 switch and electric component which mounted on upper cover all coating the polyester to avoid loosing, so if you want to take out the component which you want, you must clean away it by knife and alcohol to assist.
4. Loosen the screw which mounted to the side of speed knob (5.40) then can take it out from potentiometer (5.38).
5. Use the wrench to loosen the nut (attached to potentiometer) then separate potentiometer (5.38) and upper cover (5.32).
6. To remove the fuel gauge from upper cover, use the (-) screw driver to press the salient on the side of fuel gauge and push it to come off.

