

Merits

P200 series *Service Manual*

Nov.20.2006 V1

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The numbers show in this service manual is just for reference. The part numbers should be in accordance with current exploded chart.

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 P200 power wheelchair.

2. Service Guide

The P120 power wheelchair consists of three main parts:

- Seat assembly
 - Body assembly
 - Electrical system (Please refer to P1 & P2 series for VSI controller service manual)
- ◆ How to separate the seat assembly and the body assembly?

Pull away all power connectors first. Use hex. tools and wrench to loosen the shoulder bolt (4.05 page 7) and nut (4.06-page 7), and loosen the quick release lever (1.11-page 12、13 or 14) by hand on the main frame assembly, and enable the seat assembly and the body assembly to separate.

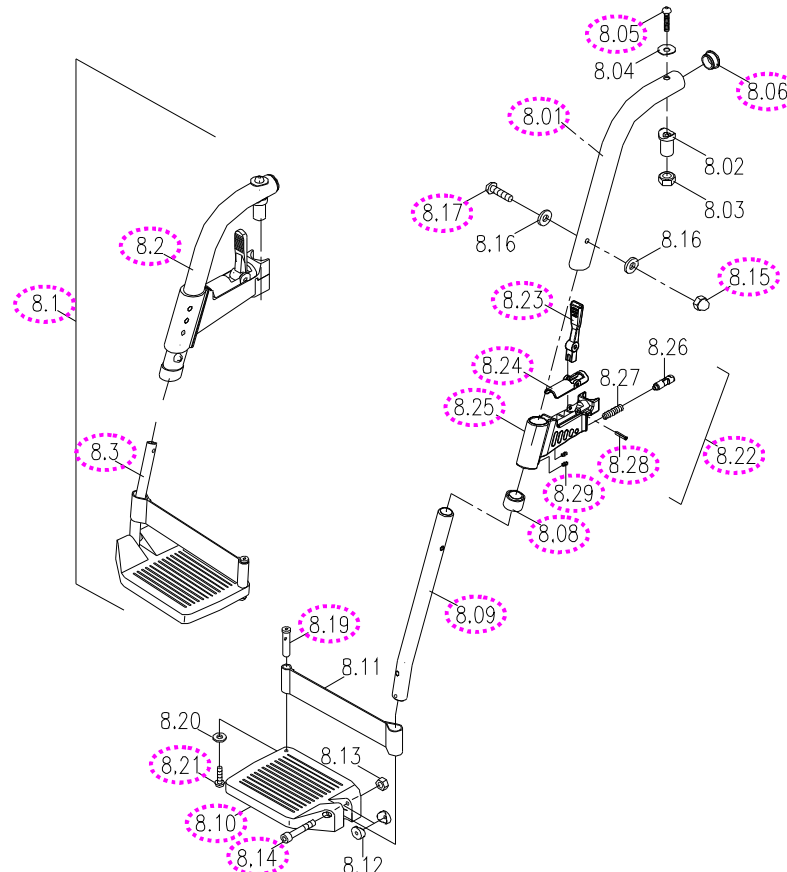
2.1 How to replace or repair the seat assembly

2.1.1 To replace the front rigging assembly

- ◆ When you should replace the front rigging assembly?
 - ◇ If the front rigging assembly is deformation.
 - ◇ If your power wheelchair can not avoid knocked or bumped cause the front rigging assembly is deformed.
 - ◇ If the front rigging assembly is out of shape due to an accident.
- ◆ How to replace the front rigging assembly?
 - ◇ Please proceeding steps as follows if it has to replace.

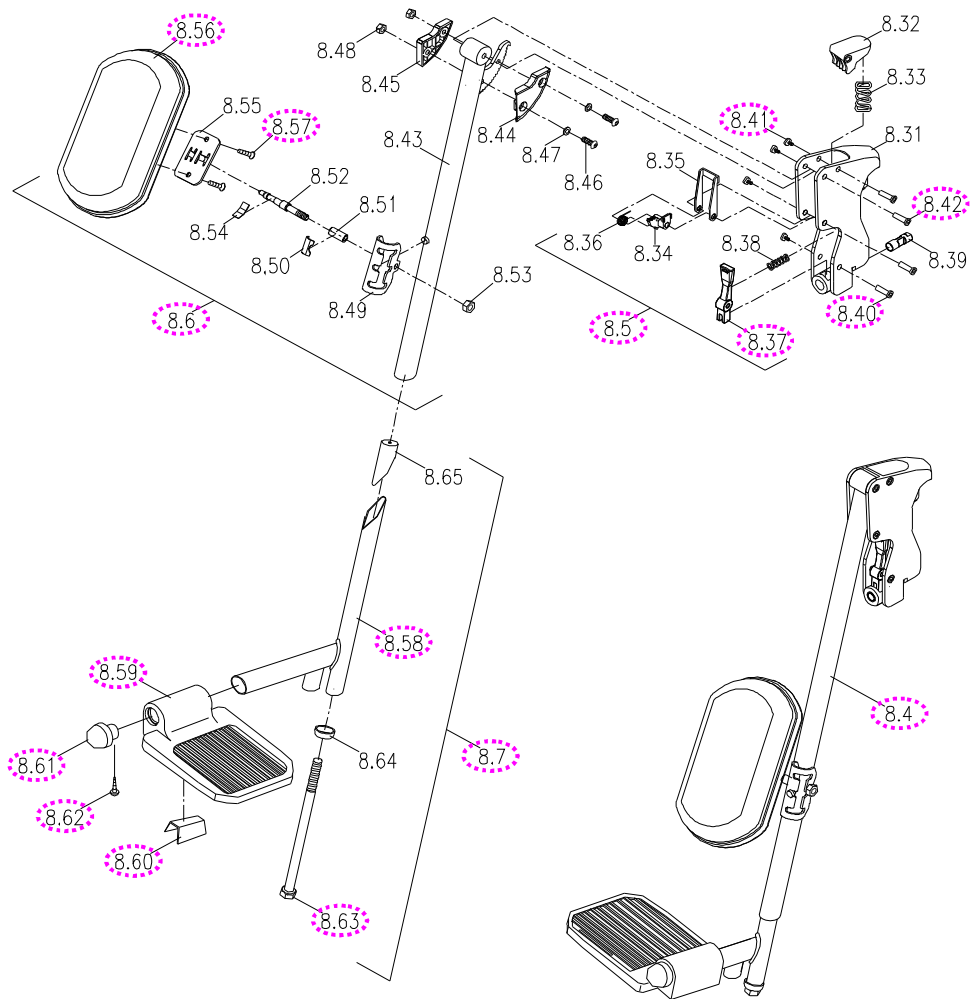
1. Replace the footrest assembly if it is worn out or deformed.
 - a. Swing in (or out) the footrest and take out it from the seat frame. Use hex. tools and wrench to loosen the screw (8.17) and nut (8.15), and then replace the footrest hanger assembly (8.2) or the footplate & extension tube assembly (8.3) if it is worn out or deformed. (See next page)
 - b. Remove the cap (8.08), Use hex. tools to loosen these two screws (8.29), and then replace the quad release set (8.22) if it is worn out or deformed. (See next page)
 - c. Remove the slotted spring pin (8.28), and then replace the handle (8.23) or the cover (8.24) or the quad release frame (8.25) if it is worn out or deformed. (See next page)

- d. Use hex. tools to loosen the screw (8.05) and remove the end plug (8.06), and then replace the footrest hanger tube (8.01) if it is worn out or deformed.
- e. Use hex. tools to loosen the screw (8.14), and then replace the extension tube (8.09) if it is worn out or deformed.
- f. Use hex. tools to hold the heel loop stud (8.29) and loosen the screw (8.21), and then replace the footplate (8.10) if it is worn out or deformed.



2. Replace the elevating legrest assembly if it is worn out or deformed.
 - a. Swing in (or out) the elevating legrest and take out it from the seat frame. Use hex. tools to loosen the binding post & screw (8.41 & 8.42) and then replace the elevating legrest mount assembly (8.5) if it is worn out or deformed. (See next page)
 - b. Use hex. tools to loosen the binding post & screw (8.40 & 8.41) and then replace the handle (8.37) if it is worn out or deformed. (See next page)
 - c. Use wrench to loosen the extension bolt (8.63), and then replace the legrest pad & bracket & tube assembly (8.6) or footplate & extension tube assembly (8.7) if it is worn out or deformed. (See next page)
 - d. Use screwdriver to loosen the screw (8.57), and replace the legrest pad (8.56) if it is broken. (See next page)
 - e. Use screwdriver to loosen the screw (8.62), and remove the bumper

rubber (8.61), footplate (8.59) and spring plate (8.60), and then replace the footplate (8.59) or extension tube (8.58) if it is worn out or deformed.



2.1.2 To replace the armrest assembly

◆ When you should replace the armrest assembly?

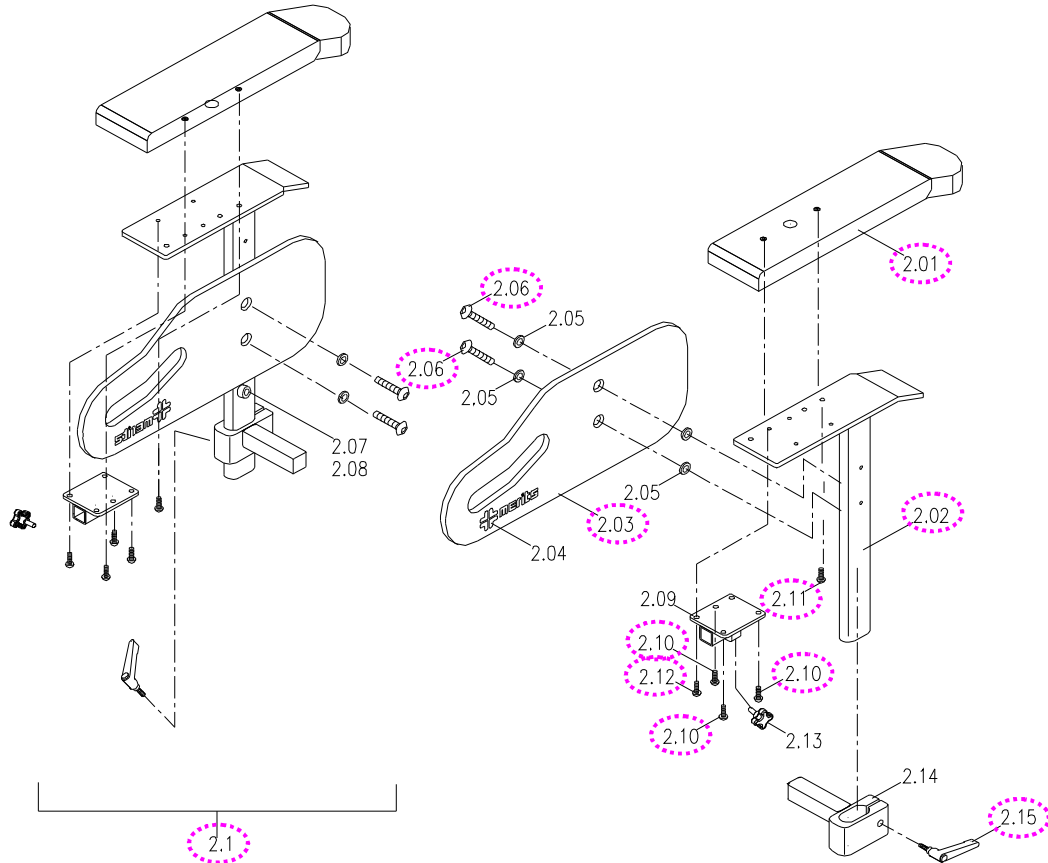
- ◇ If the armrest assembly is worn out.
- ◇ If the PU armrest pad is pierced or scratched by something.
- ◇ If the power wheelchair crashed cause the armrest assembly out of shape.

◆ How to replace the armrest assembly?

- ◇ Please proceeding steps as follows if it has to replace.

1. Loosen the quick release lever (4.07-page 7) by hand on the seat frame assembly and take out the armrest assembly (2.1). If the armrest assembly is worn out or deformed, then replace it. (See next page)
2. Use hex. tools to loosen these two screws (2.11 & 2.12) under armrest to disassemble armrest from armrest support plate. If the PU armrest pad (2.01) is broken, then replace it. (See next page)

3. Use screwdriver to loosen these two screws (2.06), and then replace the side panel if it is worn out or deformed.
4. Loosen the quick release lever (2.15) by hand, use hex. tools to loosen these three screws (2.10), and then replace the armrest base (2.02) if it is worn out or deformed.



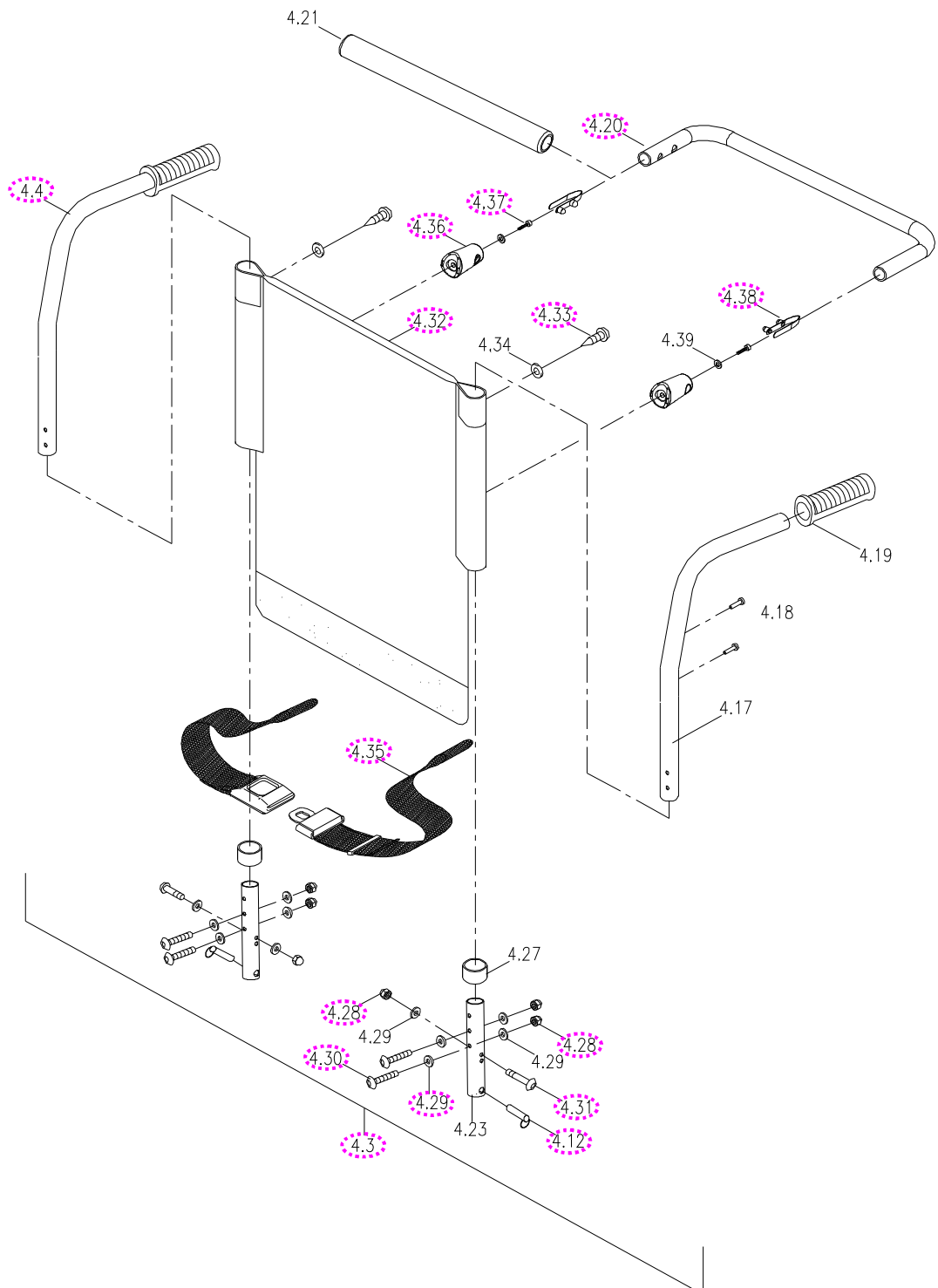
2.1.3 To replace the backrest upholstery assembly

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

The backrest upholstery assembly is composed of the safety belt, the backrest upholstery, the backrest tube assembly, the backrest cross bar, and so on.

Use hex. tools and wrench to loosen the screw (4.31) and nut (4.28), draw out the pull pin (4.12), and then remove the backrest upholstery assembly. (See next page)

1. Use hex. tools and wrench to loosen the screw (4.30) and nut (4.28), remove the lower backrest tube (4.23). Replace the safety belt (4.35) if it is worn out.
2. Replace the backrest cross bar (4.20) if it is worn out or deformed. Press these two spring buttons (4.38) and pull out the backrest cross bar, and then replace it.
3. Use hex. tools to loosen the screw (4.37), remove the cross bar base (4.36), and then use hex. tools to loosen the screw (4.33). Replace the backrest upholstery (4.32) or the backrest tube assembly (4.4) if it is worn out or deformed.

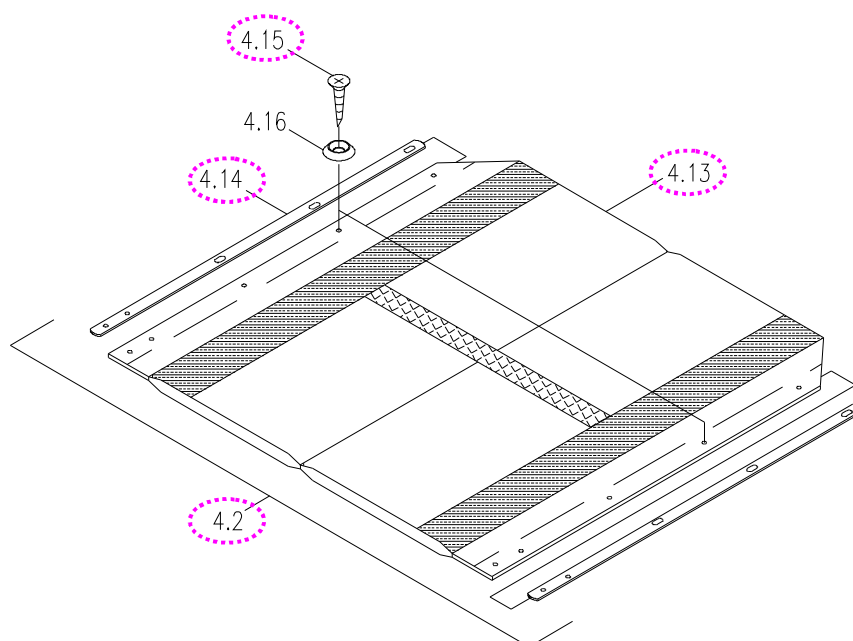


2.1.4 To replace the seat upholstery

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

Replace the seat upholstery (4.13) by steps if it is worn out.

- a. Use screwdriver to loosen all screws (4.15).
- b. Draw out the strips (4.14) from the seat upholstery, and then replace the seat upholstery.



2.1.5 To replace the seat frame

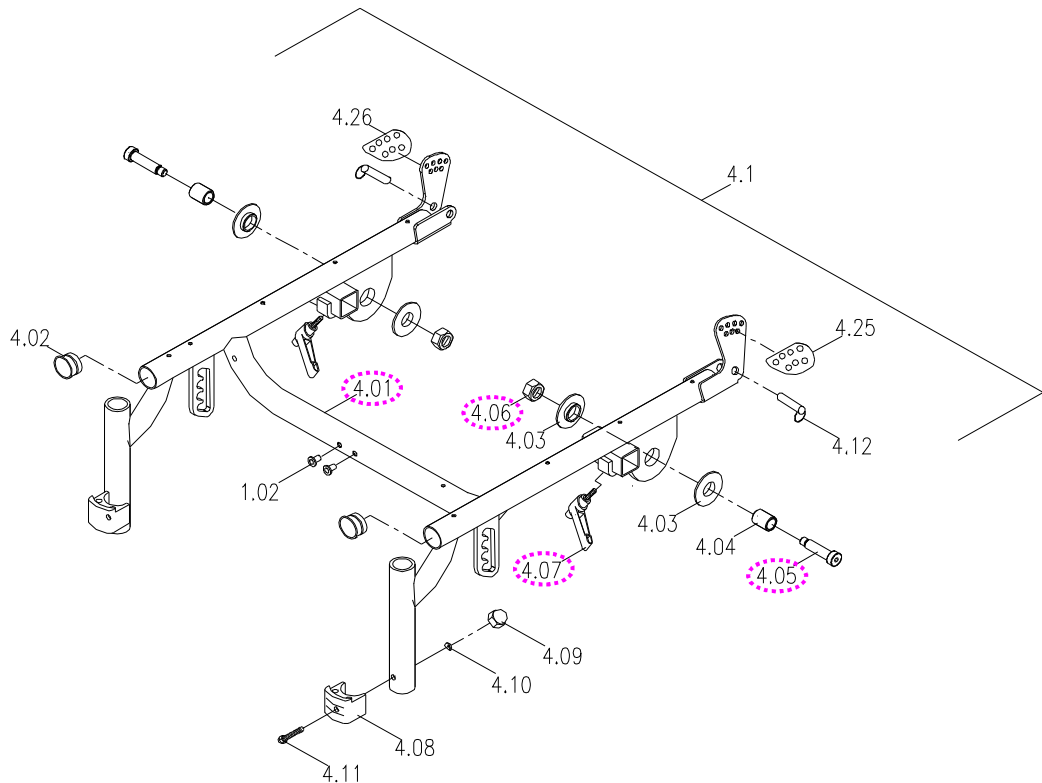
- ◆ When you should replace the seat frame?
 - ◇ If the seat frame is deformation.
 - ◇ If your power wheelchair can not avoid knocked or bumped cause the seat frame is deformed.
 - ◇ If the seat frame is out of shape due to an accident.
- ◆ How to replace the seat frame?
 - ◇ Please proceeding steps as follows if it has to replace.

Replace the seat frame (4.01) by the following steps if it is worn out or deformed. (See next page)

- a. Remove the front rigging assembly (8.1 or 8.4-page 2 or 3), the armrest assembly (2.1-page 4), the backrest upholstery assembly (4.3-page 5),

the seat upholstery (4.2-page 6) by step 2.1.1 ~2.1.4.

- b. Check for deformations or cracks on the seat frame and replace the seat frame should they exist.



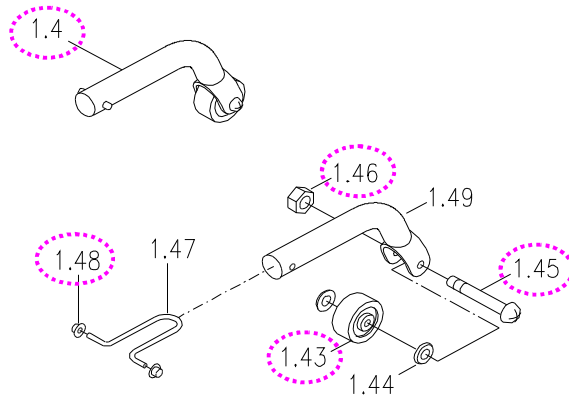
2.2 How to replace or repair the body assembly

2.2.1 To replace the anti-tipper assembly

- ◆ When you should replace the anti-tipper assembly?
 - ◇ If the anti-tipper assembly is worn out.
 - ◇ If your power wheelchair can not avoid knocked or bumped cause the anti-tip wheel is broken.

- ◆ How to replace the anti-tipper assembly?
 - ◇ Please proceeding steps as follows if it has to replace.

1. Replace the anti-tipper assembly (1.4) if it is worn out or deformed. Press these two brass buttons (1.48) and pull out the anti-tipper , and then replace it. (See next page)
2. Replace the anti-tip wheel (1.43) if it is worn out or deformed. Use screwdriver and wrench to loosen the screw (1.45) and nut (1.46) , and then replace the anti-tip wheel. (See next page)

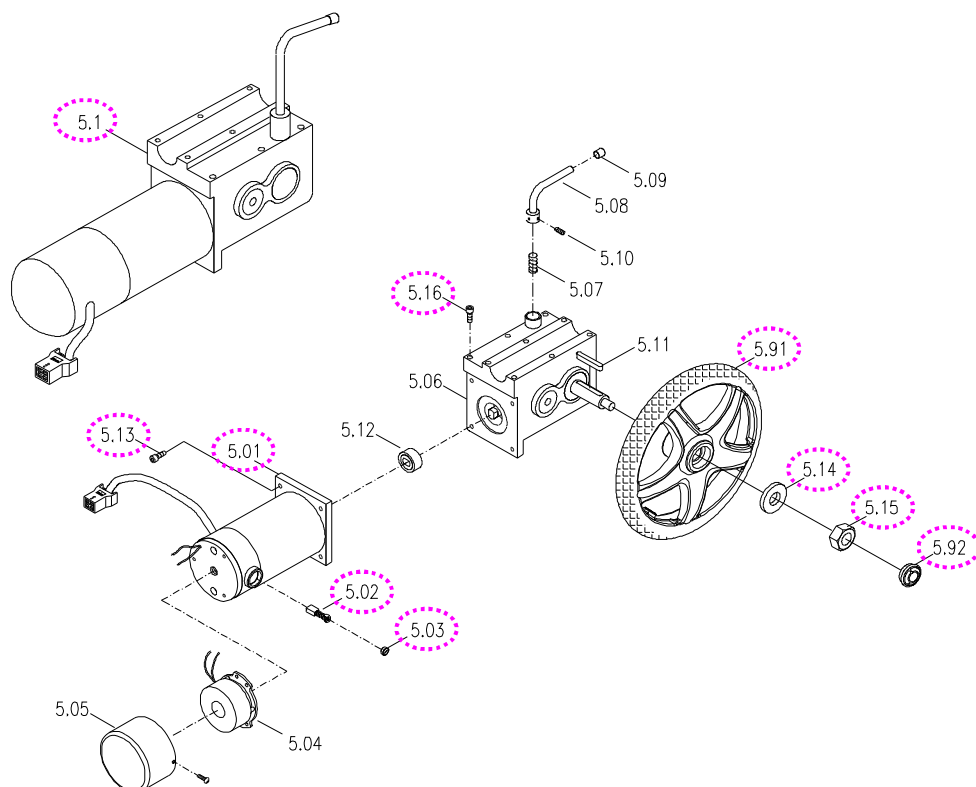


2.2.2 To replace the driven wheel assembly

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

Replace the driven wheel (5.91) by the following steps if it is worn out or deformed.

- a. Remove the hub cap (5.92).
- b. Loosen the nut (5.15) and washer (5.14) to replace the driven wheel assembly.



2.2.3 To replace the motor & gearbox assembly

◆ When you should replace the motor & gearbox assembly?

- ◇ If the motor & gearbox assembly has noise.
- ◇ If the motor & gearbox assembly can't drive the power wheelchair.
- ◇ If the motor & gearbox assembly out of shape due to an accident.
- ◇ If the motor & gearbox assembly is deformation.

◆ How to replace the motor & gearbox assembly?

◇ Please proceeding steps as follows if it has to replace.

1. Replace the motor & gearbox assembly (5.1) by the following steps if it has a breakdown. (See previous page)
 - a. Remove the driven wheel (5.91). (The step is same as 2.2.2.)
 - b. Use hex. tools to loosen the screw (5.16), and then replace the motor & gearbox assembly. (See previous page)
2. Replace the motor (5.01) if it has a breakdown. Use hex. tools to loosen the screw (5.13), and then replace it. (See previous page)
3. Replace the carbon brush (5.02) if it has a breakdown. Use screwdriver to loosen the carbon brush cap (5.03), and then replace it. (See previous page)

2.2.4 To replace the rear absorber assembly

◆ When you should replace the rear absorber assembly?

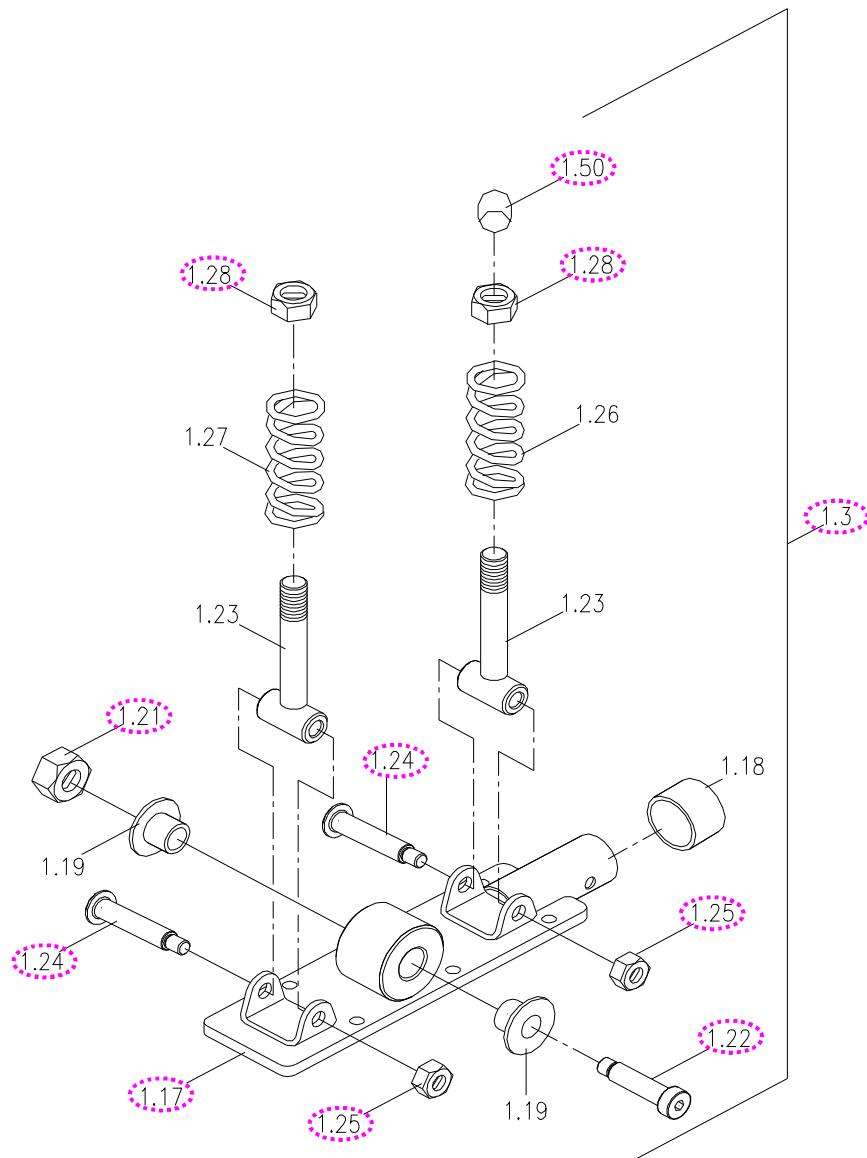
- ◇ If the rear absorber assembly is deformation.
- ◇ If your power wheelchair can not avoid knocked or bumped cause the rear absorber assembly is deformed.
- ◇ If the rear absorber assembly is out of shape due to an accident.

◆ How to replace the rear absorber assembly?

◇ Please proceeding steps as follows if it has to replace.

Replace the mounting plate (1.17) by the following steps if it is worn out or deformed. (See next page)

- a. Use hex.tools and wrench to loosen the shoulder bolt (1.22) and nut (1.21), remove the plug (1.50) and use wrench to loosen the nut (1.28), and then remove the rear absorber assembly. (See next page)
- b. Use hex.tools and wrench to loosen the shoulder bolt (1.24) and nut (1.25). Replace the mounting plate if it is worn out or deformed. (See next page)



2.2.5 To replace the caster assembly

- ◆ When should you replace the caster assembly?
 - ◇ If your caster assembly is deformation.
 - ◇ If the caster assembly out of shape due to an accident.
 - ◇ If the caster assembly is worn out.
 - ◇ If the caster assembly is pierced by something.

- ◆ How to replace the caster assembly?
 - ◇ Please proceeding steps as follows if it has to replace.

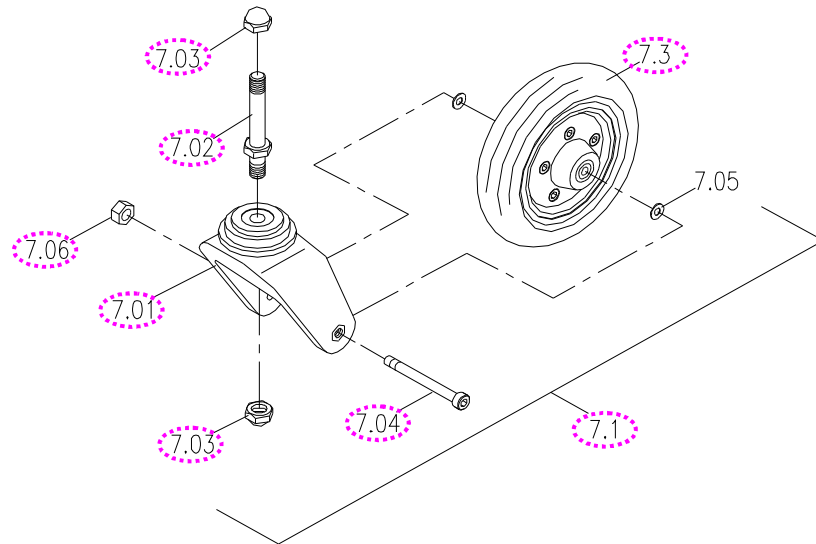
A. Plastic fork type

The caster assembly is composed of a caster, stem and fork.

1. Replace the caster assembly (7.1) if it is found to be deformed.
Fix the caster in place, remove the cap (1.06-page 12) first, use

wrench to loosen the nut (7.03) and remove the caster assembly.

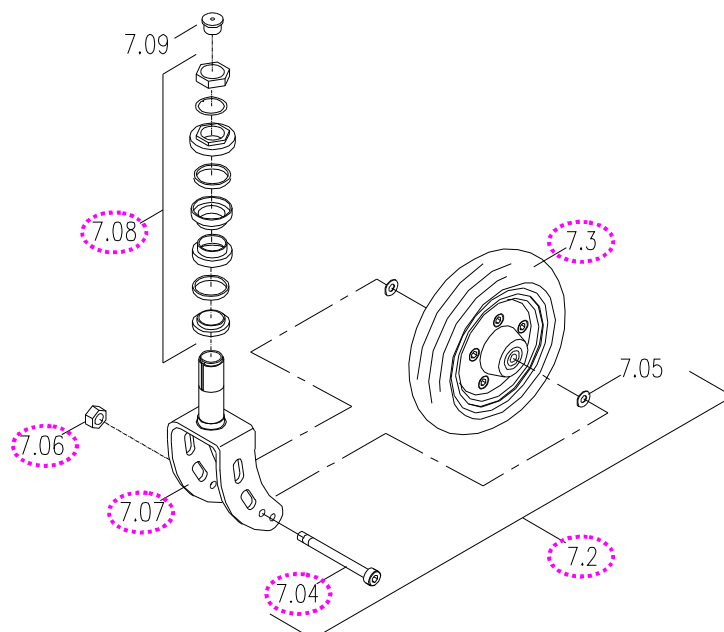
2. Use hex. tools and wrench to loosen the screw (7.04) and the nut (7.06). Replace the caster (7.3) if it is worn out or deformed.
3. Use wrench to loosen the nut (7.03). Replace the fork (7.01) or stem (7.02) if it is worn out or deformed.



B. Steel fork type

The caster assembly is composed of a front wheel and fork.

1. Replace the caster assembly (7.2) if it is found to be deformed. Fix the front wheel in place, use wrench to loosen the nut of headset bearing (7.08) and remove the caster assembly.
2. Use hex. tools and wrench to loosen the screw (7.04) and the nut (7.06). Replace fork (7.07) or caster (7.3) if it is worn out or deformed.



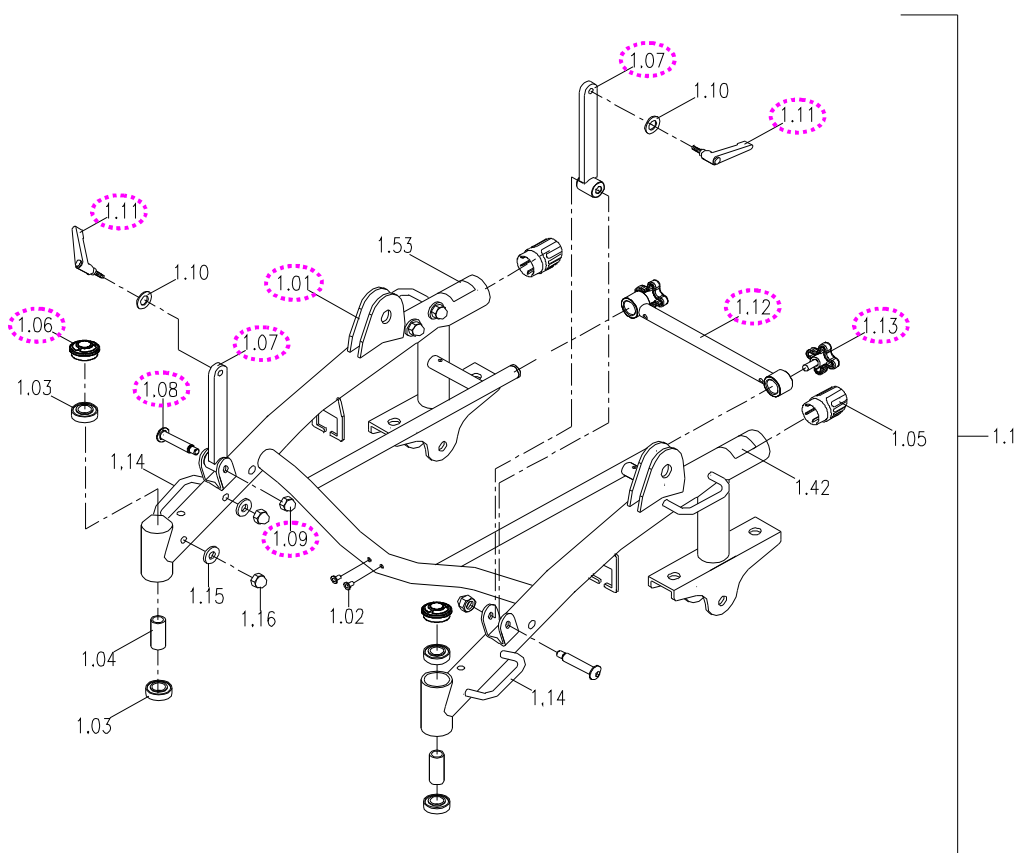
2.2.6 To replace the main frame assembly

- ◆ When you should replace the main frame assembly?
 - ◇ If the main frame assembly is deformation.
 - ◇ If your power wheelchair can not avoid knocked or bumped cause the main frame assembly is deformed.
 - ◇ If the main frame assembly is out of shape due to an accident.
- ◆ How to replace the main frame assembly?
 - ◇ Please proceeding steps as follows if it has to replace.

A. Plastic fork type

Replace the main frame (1.01) by steps if it is worn out or deformed.

- a. Loosen the knob (1.13) by hand and take out the cross bar (1.12) to remove the battery boxes.
- b. Remove the anti-tipper assembly (1.4-page 8), the driven wheel assembly (5.91 -page 8), the motor & gearbox assembly (5.1-page 8), the rear absorber assembly (1.3-page 10) and the caster assembly (7.1-page 11) by step 2.2.1 ~2.2.5.
- c. Use hex.tools and wrench to loosen the shoulder bolt (1.08) and nut (1.09), then remove the front height adjustable post (1.07).
- d. Check for deformations or cracks on the main frame and replace the side frame should they exist.

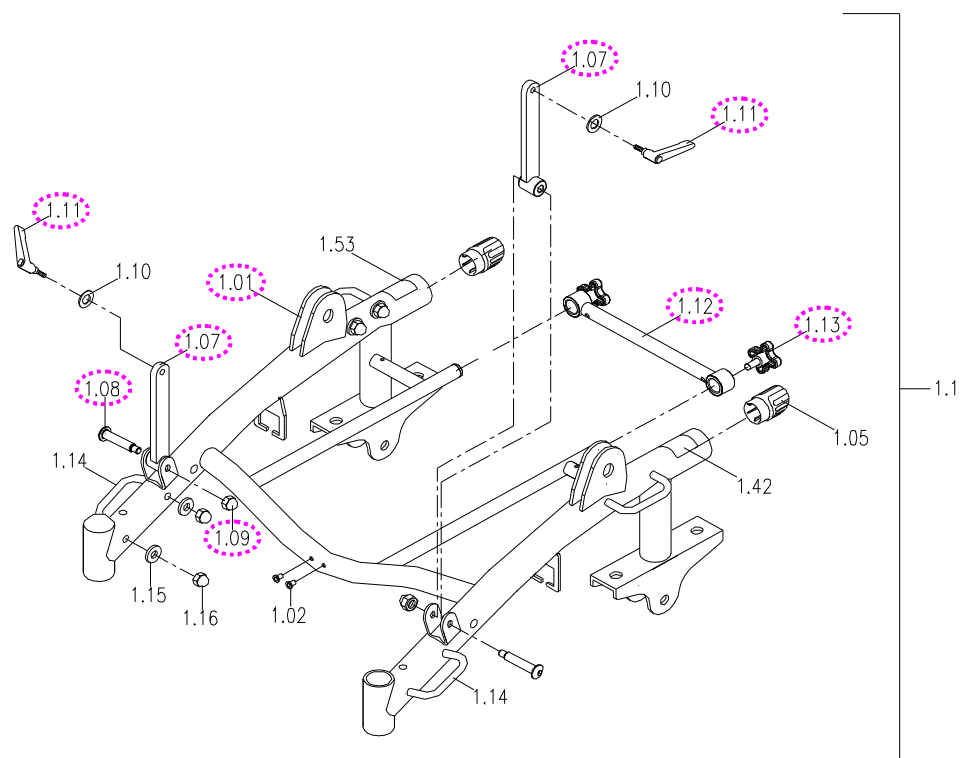


Frame of plastic fork type

B. Steel fork type

Replace the main frame (1.01) by steps if it is worn out or deformed.

- a. Loosen the knob (1.13) by hand and take out the cross bar (1.12) to remove the battery boxes.
- b. Remove the anti-tipper assembly (1.4-page 8), the driven wheel assembly (5.91 -page 8), the motor & gearbox assembly (5.1-page 8), the rear absorber assembly (1.3-page 10) and the caster assembly (7.2-page 11) by step 2.2.1 ~ 2.2.5.
- c. Use hex.tools and wrench to loosen the shoulder bolt (1.08) and nut (1.09), then remove the front height adjustable post (1.07).
- d. Check for deformations or cracks on the main frame and replace the side frame should they exist.



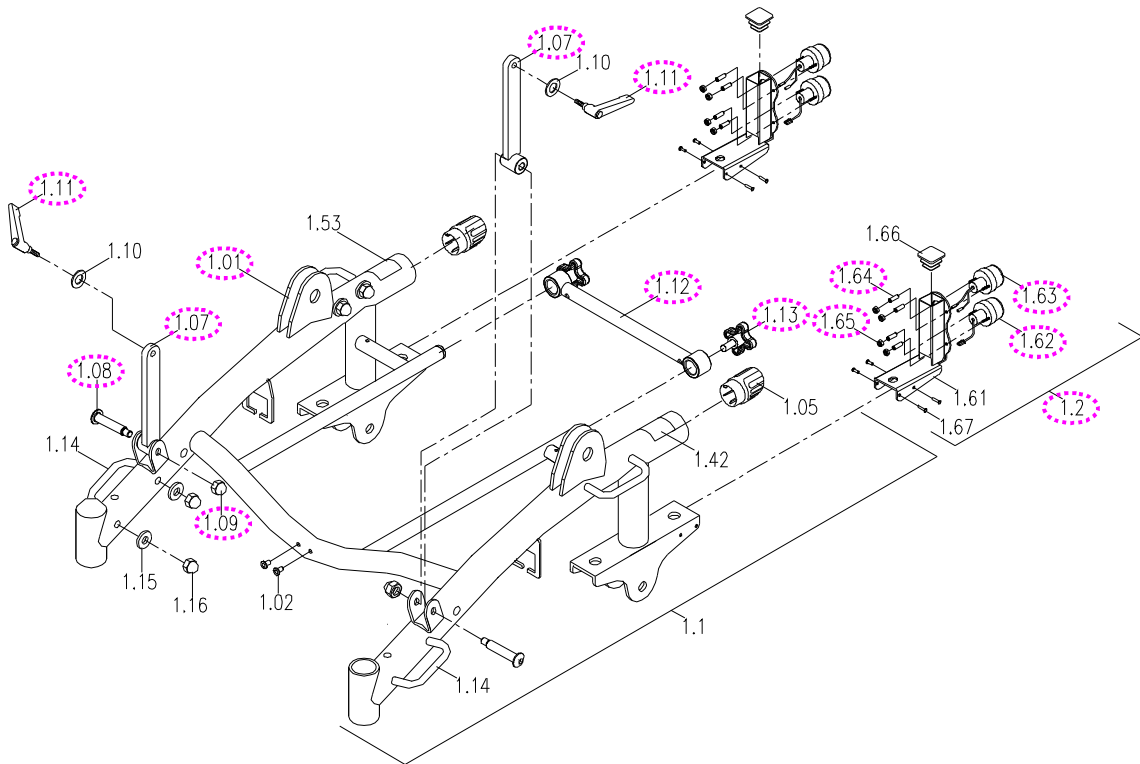
Frame of steel fork type

C. Steel fork with light type

Replace the main frame (1.01) or the light assembly (1.2) by steps if it is worn out or deformed. (See next page)

- a. Loosen the knob (1.13) by hand and take out the cross bar (1.12) to remove the battery boxes. (See next page)
- b. Remove the anti-tipper assembly (1.4-page 8), the driven wheel assembly (5.91 -page 8), the motor & gearbox assembly (5.1-page 8), the rear absorber assembly (1.3-page 10) and the caster assembly (7.2-page 11) by step 2.2.1 ~ 2.2.5.
- c. Use screwdriver to loosen the screws (1.67) and remove the light assembly. (See next page)

- i. Replace the light assembly (1.2) if it is worn out or deformed.
- ii. Use wrench to loosen the nuts (1.65). Replace the turn signal (1.63) or the taillight (1.62) if it is out of order.
- d. Use hex.tools and wrench to loosen the shoulder bolt (1.08) and nut (1.09), then remove the front height adjustable post (1.07).
- e. Check for deformations or cracks on the main frame and replace the side frame should they exist



Frame of steel fork with light type