

# AIRBAG SYSTEM Manual

※Read carefully before use.



## AIRBAG VEST USER'S GUIDE



# B

For Horseback Riding  
〈B-type Key Box〉

www.hit-air.com

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HAM-B-E-HR210720

### ⚠ Be sure to read this page before using and after re-assembling the Hit-Air.

Thank you for using the Hit-Air.

For your safety, peace of mind and correct use of your airbag vest, make sure that items ① - ⑥ are confirmed before use as follows:

Caution ⚠

- Unless the Hit-Air is set correctly, it may not work or may cause a malfunction.
- Once a CO<sub>2</sub> cartridge is activated, it cannot be used again. Remove it from the key box without fail.
- Use a Hit-Air CO<sub>2</sub> cartridge only. Do not use any other one.

#### ① A CO<sub>2</sub> cartridge of the right size (capacity) for the model is installed.

The seal attached the cartridge shows its size (capacity).

#### ② Sealed properly (No damage to the seal)

\*No seal is attached in case re-assembling is done by yourself.

Unused CO<sub>2</sub> cartridge and the key box are properly sealed at the time of shipment. (\*The key ball is set)

\*In some countries or regions, the hit-air is sold without the security-check-sticker on it. If this is the case, please make sure that an unused CO<sub>2</sub> cartridge of the correct size is properly installed to the key box.

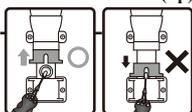
• The right size (capacity) cartridge for the model is installed.

• A CO<sub>2</sub> cartridge is tightly screwed into the key box.

• An used/empty cartridge should not be installed.

Caution ⚠ Re-assembling after the activation must be done in accordance with "Re-assembling Key Box" (see page 26 to 28)

#### ③ The red slide cover is lifted to the "unlocked"(up) position.



#### ④ Is there any deterioration of the wire loop or the coiled wire?

#### ⑤ A screw hole at the bottom of the key box is visible.

(The setting bolt is removed)

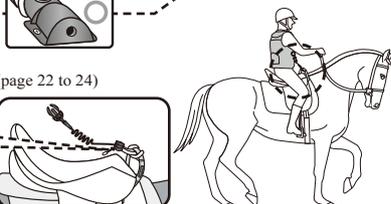


#### ⑥ A coiled wire is set properly.

See "Attaching Coiled wire to Saddle" (page 22 to 24)

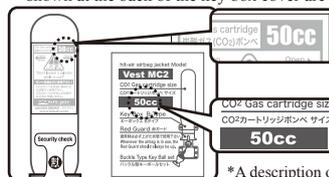


⚠ Be sure to tie a knot tightly.



#### ① The size (capacity) of the cartridge varies from model to model.

Make sure that the size (capacity) shown on the seal attached to the CO<sub>2</sub> cartridge and that shown at the back of the key box cover are the same. (Some model has no size label attached)



\*If sizes shown as above are not the same, it may cause a malfunction.

\*If the right size for the model is not clear, check it against the Hit-Air catalogue, or visit our website <https://www.hit-air.com/en/horse/> "List of replacement gas cartridge size"

\*A description of the size label varies from model to model.

#### ② If the CO<sub>2</sub> cartridge and the key box are not sealed or if the seal attached is torn at the time of the purchase of a new product, remove the cartridge and make sure that there is no hole at its bottom (at the screw end).

• If there is no hole - it is an unused cartridge to be installed in the key box for use.

Caution ⚠ If a CO<sub>2</sub> cartridge is screwed into the key box loosely, it may cause a malfunction. (See "Re-assembling Key Box" in page 24)

A CO<sub>2</sub> cartridge with no hole at its bottom is usable.

• If there is a hole at its bottom, it is an used/empty one and not usable.

Replace it with a new one.

A CO<sub>2</sub> cartridge with a hole at its bottom is unusable.

\*An unused cartridge is to be installed in accordance with "Re-assembling Key Box" (see page 22 to 25).

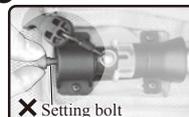
#### ③ Make sure that the red slide cover is not in the "locked(down)" position and the key ball is not set as yet. The red slide cover is a tool to confirm that the key ball is set properly during the course of re-assembling. It should always be in the "unlocked(up)" position except during the course of re-assembling. (see page 12 in detail).

Caution ⚠ The activation while the red slide cover is in the "locked(down)" position, may cause damage or a malfunction to the Hit-Air.

#### ④ Is there any deterioration of the wire loop or the coiled wire?

If there are signs of wear and tear, replace it with a new one. We recommend you to replace it in every one or two years.

#### ⑤ Make sure that the setting bolt has been removed from the key box.



The setting bolt is a tool to be used for setting the key ball into the hole of the key box for re-assembling. (see page 23 to 24 in detail).

\*The Hit-Air will not be activated if the setting bolt remains in the key box. Make sure that the setting bolt is removed from the key box before using the Hit-Air.

#### ⑥ Tie a knot tightly to fix a coiled wire to the saddle, A knot works as the stopper to prevent the wire coming off when the Hit-Air is activated.

Caution ⚠ Without a knot, the wire may come off the Hit-Air at its activation and the airbag will not inflate.

Be sure to read this User's Guide to use the Hit-Air properly. A maintenance check by an authorized dealer once a year is recommendable for your safety and peace of mind.

- Thank you for your purchase.
- For the proper use of the Hit Air, please read this booklet carefully before use.
- Please carry this booklet together whenever you use the Hit Air.

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**Tools for Re-assembling**

**CO<sub>2</sub> gas cartridge** (See P.14)  
When the key box is activated, the gas cartridge releases CO<sub>2</sub> gas into the airbag (to each air cushion) immediately to inflate them.

**Key box** (See P.12)

**Key ball** (See P.13)  
Key ball to be pulled out to release the gas into the airbag instantly. Key ring holds a key ball in the key box.

**One-touch release(Connector)** (See P.15)  
When getting on a horse, connect the male connector at the end of the coiled wire attached to the saddle with the female connector attached to the jacket.

**When getting on a horse, connect one-touch release**

**Loop setter** (See P.16)  
After a coiled wire is fixed to a motorcycle and its length is adjusted, place it in the grooves of the loop setter and tighten the wing screw.

**Coiled wire** (See P.16)  
A strong wire of Kevlar cord coated with urethane resin.

Tie a coiled wire to the center of the saddle holder attached to the saddle, or to the saddle strap (our own product).

**Protector tube** (See P.16)  
Made of such non-slippery materials as rubber or silicon to avoid abrasion of the part where the wire is tied.

## 1 Safety Precautions

Be sure to read this User's Guide carefully before using the Hit-Air (airbag system) for proper use and safety, please keep it in the place you can reach anytime.

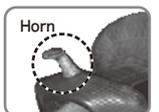
The marks used in this User's Guide denote as follows.

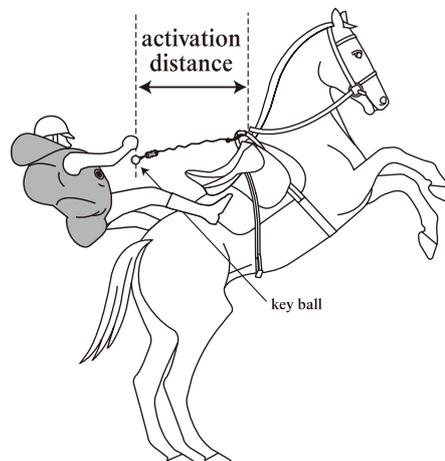
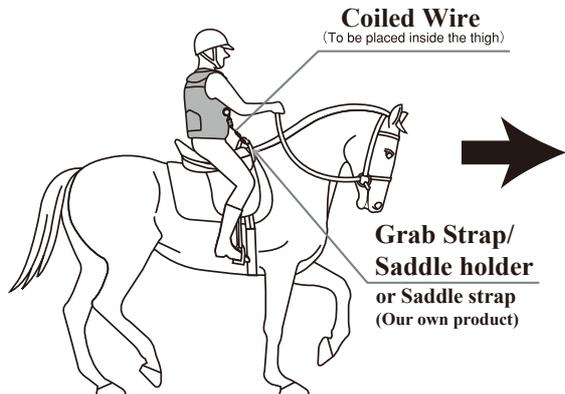
**WARNING** ⚠ This mark denotes that if the "WARNING" is ignored, it could result in death or a serious injury to the user of this product.

**CAUTION** ⚠ This mark denotes that if the "CAUTION" is ignored, it could result in a physical injury or a material damage.

- WARNING** ⚠ 1. The vest with the Hit-Air is to be used for the rider's safety when riding a horse and not for any other purpose.
- WARNING** ⚠ 2. The vest with the Hit-Air of the right size is to be worn as an outerwear on the upper half of the body.
- WARNING** ⚠ 3. Use the gas cartridge of the same size and contents as before when replacing and confirm that there are no holes or tears in its seal.
- WARNING** ⚠ 4. Do not take any parts of the Hit-Air apart.
- CAUTION** ⚠ 5. Remove sharp or pointed objects such as pins or pens from the vest with the Hit-Air or from the underwear before wearing. They may damage the air cushion before or at the time of the activation and prevent the function of the Hit-Air.
- CAUTION** ⚠ 6. Keep open flames and cigarettes away from the jacket with the Hit-Air as holes or tears caused by them will prevent its function. Keep and use at temperatures below 40°C/104°F as the gas cartridge may burst at a high temperature.
- CAUTION** ⚠ 7. Disconnect the Hit-Air from the "coiled wire" at the "one-touch release (connector)" before dismounting the horse. Otherwise, it may cause an accidental activation.
- CAUTION** ⚠ 8. Inspect the Hit-Air to determine if there is any damaged prior to wearing. If there is any damage, consult with an authorized dealer.
- CAUTION** ⚠ 9. To make sure the Hit-Air will function properly, take it to an authorized dealer for a maintenance check, once a year depending on frequency of use.

- CAUTION** ⚠ 10. Keep the vest with the Hit-Air by hanging up on a coat hanger. Do not fold or lay anything on it. Avoid high temperature and high humidity.
- CAUTION** ⚠ 1. To avoid any damage to the airbag, do not prick a needle or sew emblems or iron on the vest with the Hit-Air. Consult with an authorized dealer where to sew an emblem.
- CAUTION** ⚠ 2. Make sure the "coiled wire" is securely attached to the saddle. Improper attaching may prevent the function of the Hit-Air.
- CAUTION** ⚠ 3. Take full responsibility for correct removing and replacing of the Hit-Air inner system.
- CAUTION** ⚠ 4. Don't use a Hit-Air inner system (shock buffering protection system) separately from the vest.
- CAUTION** ⚠ 5. Don't wash a Hit-Air inner system. Remove it from the vest and wash the vest only.
- CAUTION** ⚠ 6. If a fray, rust or wear is found on the "wire loop" or the "coiled wire" attached to the "key ball", replace it immediately.
- CAUTION** ⚠ 7. Use caution when mounting and dismounting. If mounting and dismounting are unsteady for you, consider fastening up the vest after mounting and removing before dismounting to avoid the possibility of getting caught on the horn of western saddles.





The vest with the Hit-Air (Shock-buffering Protection System) is to be worn as outerwear when horseback riding.

It will be activated/inflated immediately after a distance from the rider to the horse exceeds the "activation distance" (\*1) when the rider falls off or is thrown off the horse. It will be activated at the moment the key ball is pulled out from the key box (see 4-3 P12). This causes the gas cartridge to release the CO<sub>2</sub> gas into the air cushions to inflate them immediately.

Inflated air cushions are designed to come between the rider's body and objects against which the rider may strike after falling off or being thrown off the horse.

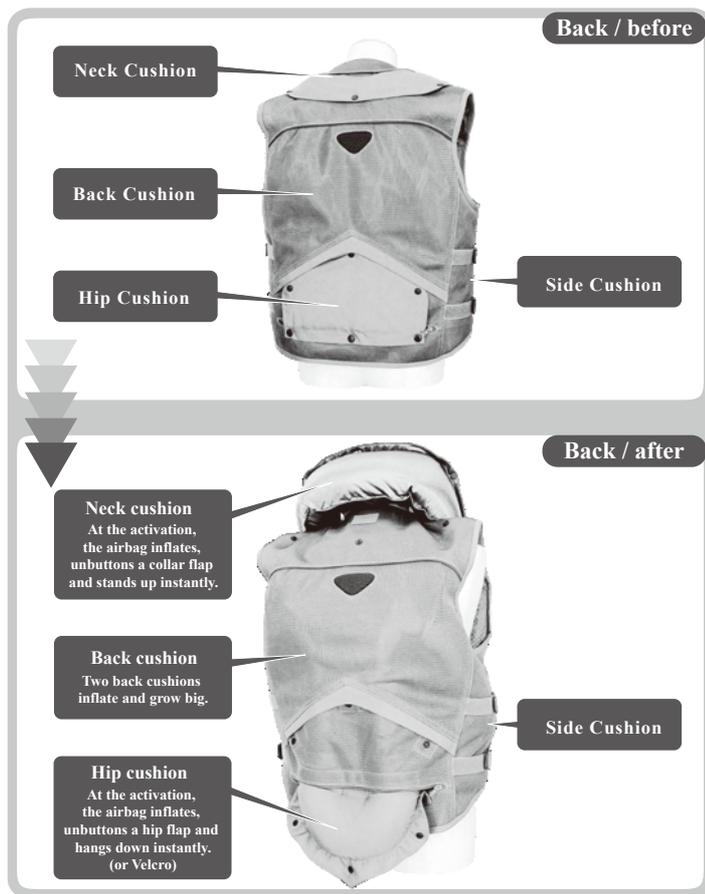
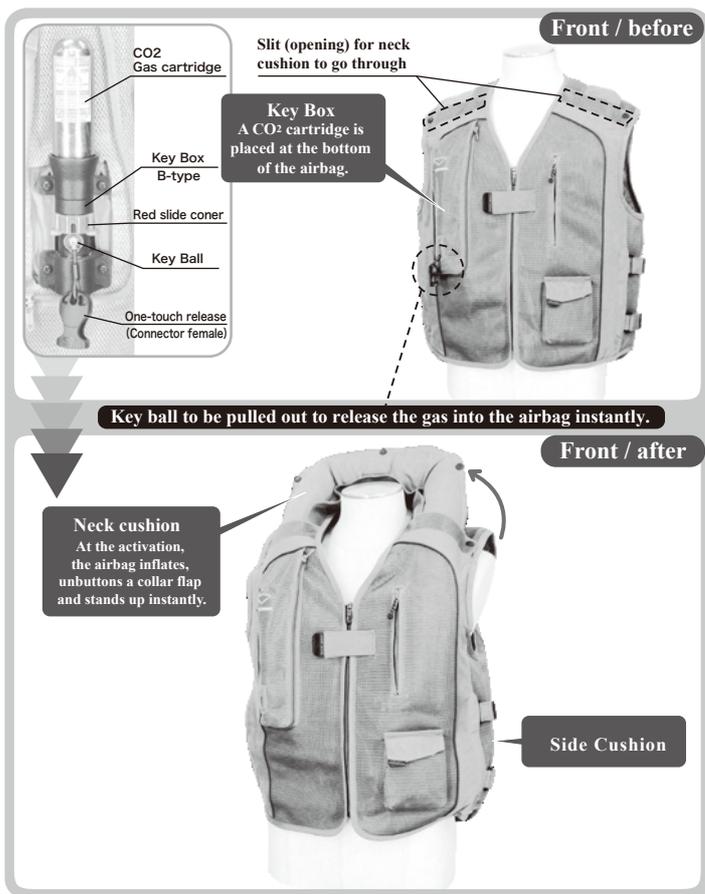
The Hit-Air will act as a buffer to absorb the shock of impact and reduce the risk of injury the rider who wears it.

**However, this does not imply or guarantee rider's safety.**

The key ball requires considerable force to be pulled out and will not be released easily because of the elastic nature of the coiled wire, thus the Hit-Air will not inflate under normally anticipated riding conditions including standing on pegs.

(\*1) The "activation distance" is defined as the length of the coiled wire stretched to its full length from the horse to the rider's key box on the Hit-Air without any obstacles in between.

- If the "coiled wire" running from the "key box" to the saddle holder touches an obstacle such as the rider's body, any part of the saddle, a whip or any other projecting object, there is a possibility of accidental activation within the "activation distance" by a force strong enough to pull the "key ball" out of the "key box".
- If the rider crashes or falls down together with the horse, unless the "activation distance" is exceeded, the Hit Air will not be activated. The Hit Air will not protect areas where the inflated air cushion does not cover.
- If the rider wearing the Hit Air forgets to disconnect the "one-touch release" and goes away from the horse farther than the "activation distance", a force of approximately 30kg-35kg (See 4-3 P12) may activate and inflate the Hit Air. Connect or disconnect the "one-touch release" while you are on the horse.
- Once a gas cartridge is used, it cannot be used again. Buy a new one from an authorized dealer.



\*Design and shape of model may vary.

\*Design and shape of model may vary.

### 4-1 Function

1. As soon as the "activation distance" is reached, the Hit-Air is activated and the CO<sub>2</sub> gas is sent into the air cushions so that it will provide protection from the shock of impact even before it is fully inflated.
2. The CO<sub>2</sub> gas cartridge and the "key box" area is covered by an ABS protector with buffer material to protect the rider's breast from the projecting objects in case of an accident.
3. After the airbag is inflated in full, the gas will leak out gradually. Depending on the amount of the pressure given to the airbag by the accident, a feeling of tightness may be felt but gradually subsides.

**CAUTION** ⚠

4. The Hit-Air may not function properly, if there is a damage to the Hit-Air, cloth of the wear., air cushion, Velcro, zipper, buckle etc. If so, consult with an authorized dealer. The Hit-Air may not be repairable in some cases.

**CAUTION** ⚠

5. Whenever the Hit-Air is inflated, even if there is no visible damage, we recommend taking the Hit-air to an authorized dealer for a maintenance check (\*2)

(\*2) Even if no damage is visible, there may be damages to the air cushion. Therefore, take the Hit-Air to an authorized dealer for a maintenance check to test the air cushion for leaks and inspect its parts to make sure it will function properly in case of an accident.

### 4-2 Air Cushion

1. The air cushions are made of high quality strong polyurethane film to absorb and reduce the shock of impact as much as possible when they are swollen.
  2. The maximum pressure is about 30kpa(0.3kg/cm<sup>2</sup>) when the air cushion is fully inflated, but gradually decreases as gas comes out of the air cushion.
  3. The strength against breakage depends on the material of the jacket the material of the inner tube (polyurethane) and the strength of the stitch it also depends on the degree of impact, shape or hardness of the object the rider may hit after the Hit-Air inflates.
  4. The CO<sub>2</sub> gas is sent from the key box to each air cushion (polyurethane film) through air tube.
- The Hit-Air is designed to act as a shock absorber and may break depending on the shape of the object against which it strikes and also the extent of impact given.

### 4-3 Key Box

#### Key Box

With a tensile strength of approximately 30kg-35kg by the "coiled wire", the "key ball" comes out of the "key box". Then a needle in the "key box" is activated and punctures the seal of the gas cartridge to inflate the Hit Air instantly. The "key ball" can be pulled out from any direction (Photo 1).

**WARNING** ⚠

Do not take the "key box" apart or remove any parts.

#### Red slide cover

Whenever using the Hit-Air, make sure the red slide cover is in the 'unlocked' (up) position. (Photo 2)

To re-assemble the key box, the red slide cover is to be used to confirm that the key ball is properly set in the hole of the key box. (Photo 3)

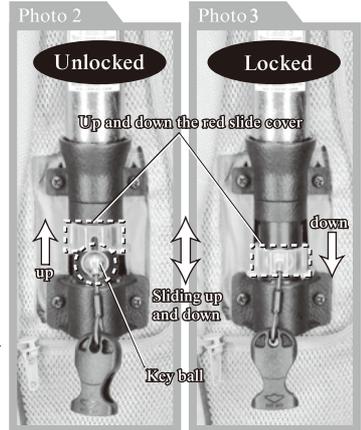
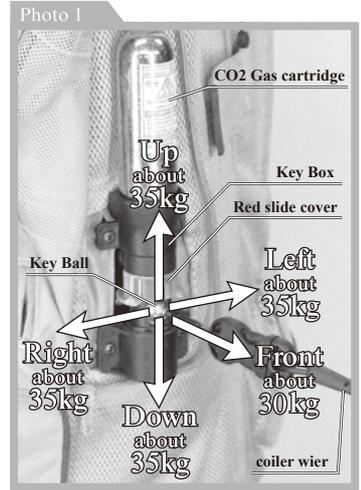
If the key ball is not set in the hole properly, the red slide cover will not come down.

**WARNING** ⚠

When the red slide cover is in the 'locked' (down) position, the "key ball" cannot be released from the "key box", then the Hit-Air will not be activated. This may cause an injury to the rider in case of an accident. Whenever using the Hit-Air, make sure the red slide cover is in the 'unlocked' (up) position. (Photo 2)

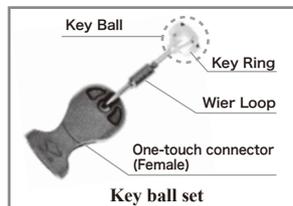
**CAUTION** ⚠

Even if the red slide cover is in the 'locked' position, if the wire is pulled strongly, the "key box" may activate the Hit-Air to inflate. The Hit-Air may also inflate accidentally when the red slide cover is moved from the 'locked' position to the 'unlocked' position after the wire is pulled strongly.



### 4-4 Key Ball

The key ball holds a compression spring and an interlocking needle in the key box. When the system is activated, the key ball comes out of the key box and a needle in the key box is released and punctures the seal of the gas cartridge to inflate the Hit Air immediately. The key ball and the key ring are integrated parts.



### 4-5 CO<sub>2</sub> Gas Cartridge

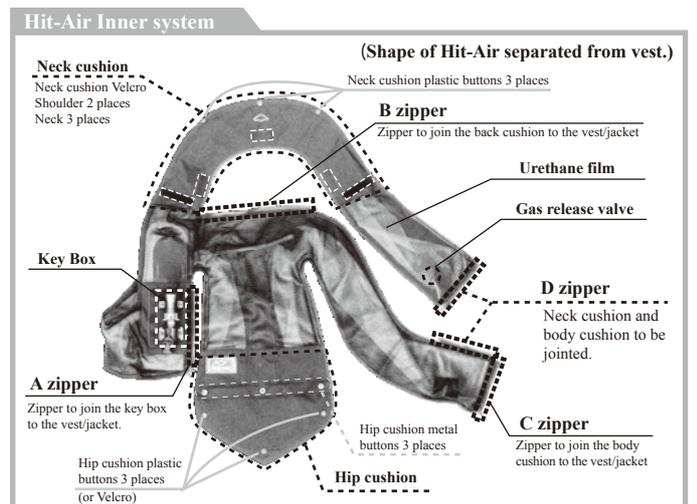
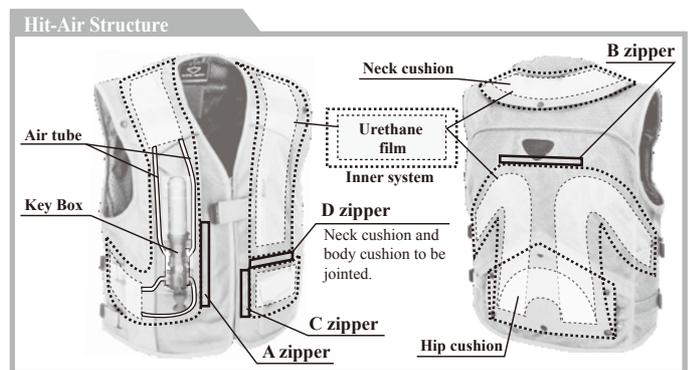
- The gas cartridge contains CO<sub>2</sub> gas.
- When the "key ball" is released from the "key box", a needle punctures the seal of the gas cartridge to let the gas go into each air cushion.
- Screw the CO<sub>2</sub> cartridge fully into the bottom until it cannot go any further. Otherwise, a needle in the "key box" may not puncture the seal of the CO<sub>2</sub> cartridge and Hit-Air may not be activated properly.
- Do not reuse the gas cartridge once used. Change it to a new one. The seal at the bottom of an used cartridge is pierced with a hole.

Observe the followings to avoid an explosion

- WARNING** ⚠ 1. **Keep and use at the temperature below 40°C/104°F. Do not keep in the car where the temperature may go up high.**
- WARNING** ⚠ 2. **Do not give the cartridge a strong shock.**
- WARNING** ⚠ 3. **Do not heat the cartridge.**
- WARNING** ⚠ 4. **Do not let corrosion form on the surface of the cartridge. If corrosion is noticed, replace it immediately.**
- WARNING** ⚠ 5. **Confirm that the used gas cartridge is empty of gas before disposing.**
- WARNING** ⚠ 6. **Do not cut or puncture the gas cartridge.**
- WARNING** ⚠ 7. **The size (capacity) of the gas cartridge varies from model to model. Install the designated size (capacity) for the model.**  
Visit <http://www.hit-air.com/en/horse/> "List of replacement gas cartridge size" to find out the right size for your Hit-Air.
- CAUTION** ⚠ 8. Use the gas cartridge for the Hit-Air only, and not for any other purpose.
- CAUTION** ⚠ 9. Use a Hit-Air CO<sub>2</sub> gas cartridge only. Do not use any other one.
- CAUTION** ⚠ 10. Keep the gas cartridges out of the reach of children.
- CAUTION** ⚠ 11. Once the gas cartridge is installed, don't attempt to turn, loosen or remove it.
- CAUTION** ⚠ 12. Screw the CO<sub>2</sub> cartridge fully until it seats firmly in the key box but do not over tighten.

### 4-6 Hit-Air Structure

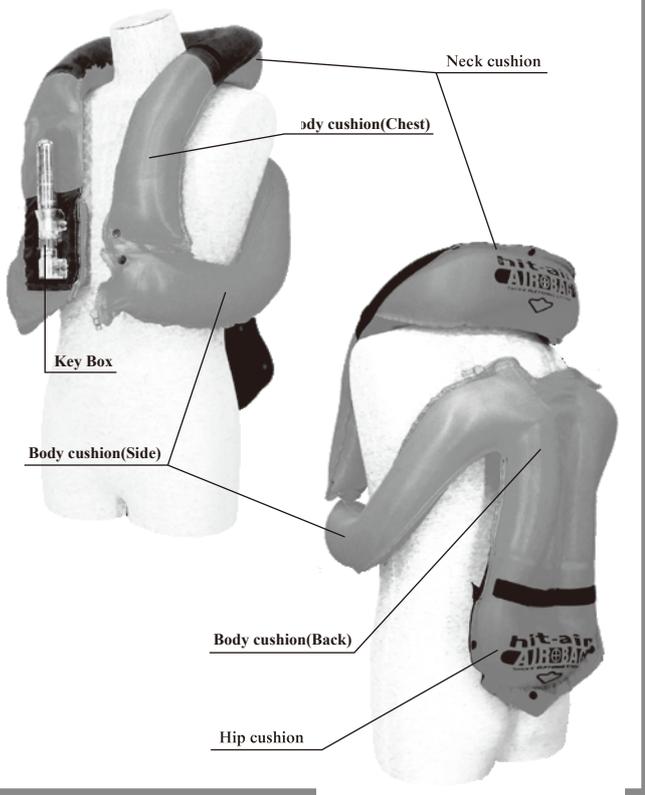
Hit-Air inner system is attachable to or removable from the vest in the same way with buttons, zipper or Velcro.



\*Shape of model may vary.

Inflated Hit-Air inner system

When activation, neck cushion inflates and stands up instantly.  
Body cushion inflates inside jacket/vest.  
\*Outerwear (Jacket and Vest) has no function to inflate.



\*Shape of model may vary.

Take the responsibility for correct dismantling and assembling.  
In case of washing or mending of the vest, the Hit-Air has to be dismantled and assembled carefully and correctly, otherwise it may not work as originally intended or may be damaged.

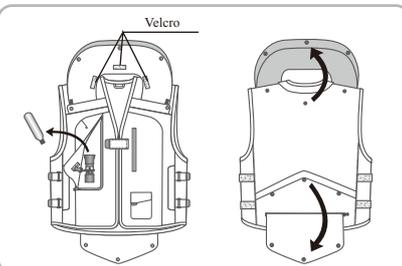
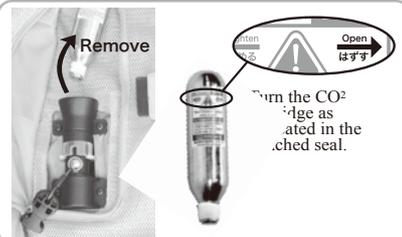
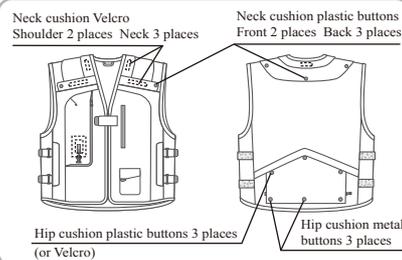
1. How to dismantle the Hit-Air inner system

Air cushions exposed to the outside of the vest/jacket are fastened with buttons and velcro.

1. Spread out the vest on a flat surface.
2. Unscrew the CO<sub>2</sub> cartridge to remove.

**CAUTION** ⚠  
Never attempt to turn, loosen or remove the CO<sub>2</sub> cartridge except for reassembling.

3. Unfasten plastic buttons and Velcro of the neck and hip cushions.



P.T.O.

1. How to dismantle the Hit-Air inner system

4. Fully open the front zipper and the zipper across the lower part of the inside of the vest.

Airbag systems are attached to the inside of the vest/jacket with zippers in 3 places, the key box(A), the back cushion(B) and the body cushion(C).

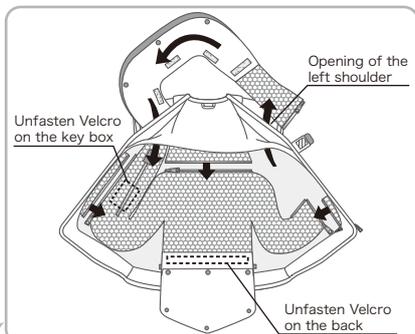
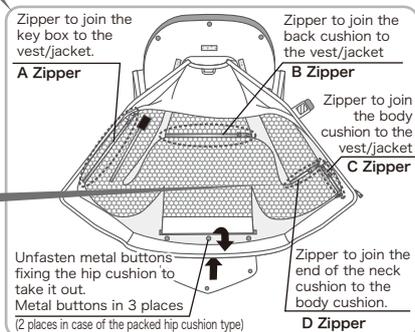
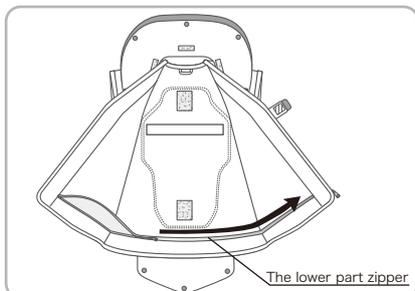
5. Open 3 zippers for the key box(A), for the back cushion(B) and for the body cushion(C) of the inside of the vest.

The end of the neck cushion is joined to the body cushion with the fastener(D)

6. Open the fastener (D)
7. Unfasten metal buttons of the hip cushion in 3 places.
8. Take the end of the neck cushion out through the opening of the left shoulder, unfasten Velcro around the neck and pull it in the direction of an arrow to be separated from the vest.

\*Packed hip cushion type has no hip Velcro and no fastener  
Unfasten metal buttons of the hip cushion in 2 places.

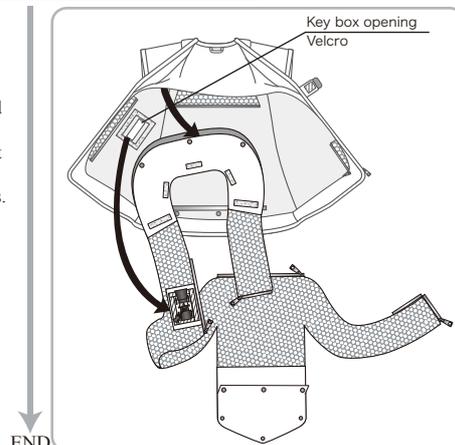
**CAUTION** ⚠  
Don't pull air cushions by force.  
It may cause damage to the Hit-Air.



P.T.O.

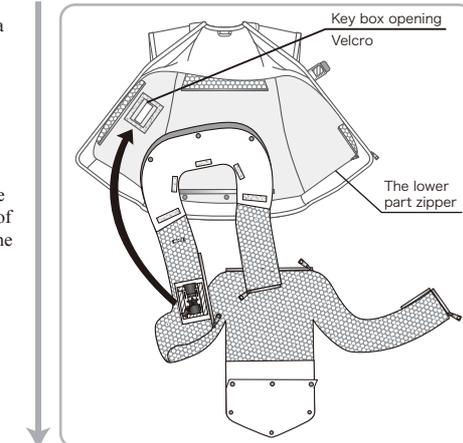
1. How to dismantle the Hit-Air inner system

9. Unfasten Velcro around the key box opening to separate from the vest. Take the Hit-Air system and shoulder, elbow and back protectors out and wash or launder the vest only in accordance with the washing instructions.



2. How to assemble the Hit-Air inner system (the reverse of dismantling)

1. Spread out the vest on a flat surface, with the inside up, and open the zipper across the lower part of the inside of the vest.
2. Place the key box of the Hit-Air in the opening of the right-hand side of the vest and fasten it with Velcro on all sides.



P.T.O.

## 2. How to assemble the Hit-Air inner system

3. Let the neck cushion go through from the inside of the right shoulder opening in the direction of an arrow. Then put its end into the left shoulder opening.

**CAUTION** ⚠ The neck cushion should not get twisted.

4. Join the end of the neck cushion to the D zipper of the body cushion.  
5. Join 3 zippers of A, B and C to the inside of the vest/jacket.  
6. Take the hip cushion out through the hip opening, fasten 3 metal buttons and fix it to the right place with Velcro.

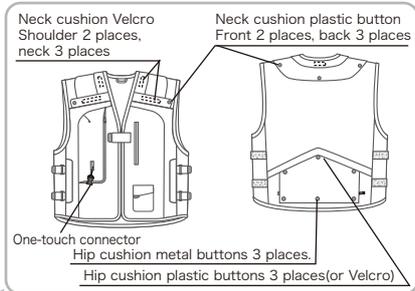
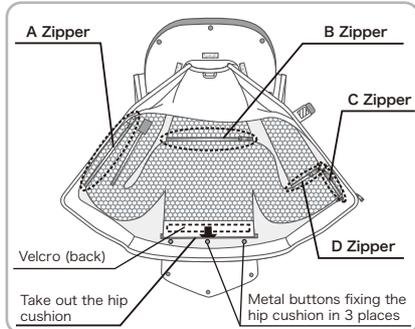
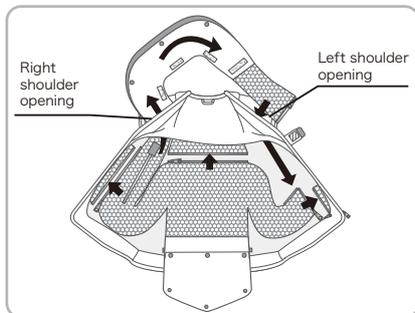
\*For the packed hip cushion type, metal buttons to be fastened.

7. Fasten the neck cushion with Velcro to the matching place of the vest/jacket.

Neck cushion Velcro Shoulder 2 places, Neck 3 places.

8. Fasten neck cushion plastic buttons on the shoulders and the back. (Shoulder 2 places, Neck 3 places)  
Fasten hip cushion plastic buttons (3 places)

9. Lastly, install a CO<sub>2</sub> cartridge and let the female side of the one-touch connector out through the hole of the key box cover and close the zipper. (See P29, 7-2, 11, for the installation of a CO<sub>2</sub> cartridge)

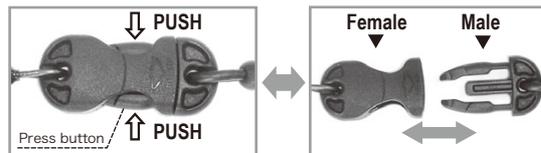


END

## 5 Using Hit-Air

### 5-1 One-touch Release

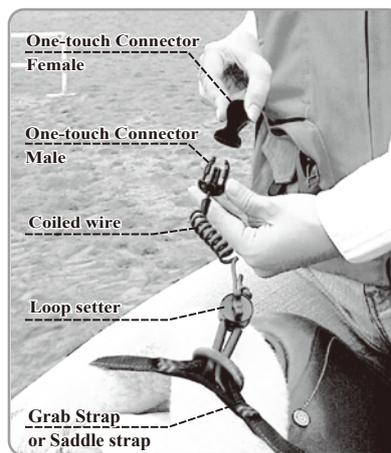
Connect the male connector at the end of the coiled wire attached to the saddle with the female connector attached to the key ball in the key box.



**CAUTION** ⚠ 1. **Connecting sound 'Click!'** Hold the female connector and insert the male one. A clicking sound confirms that a connection has been made. Pull the male connector lightly to make sure that the connection has been made properly.

**CAUTION** ⚠ 2. If you have difficulty making the connection, clean the male and female parts thoroughly.

**CAUTION** ⚠ 3. Change it for a new one, if the insertion cannot be made properly. Insertion by force may cause a malfunction of the one-touch release.



Coiled wire Bungee Lanyard

Easy to adjust its length with the belt and easy to attach to the right place.

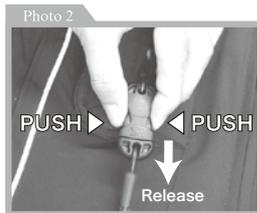
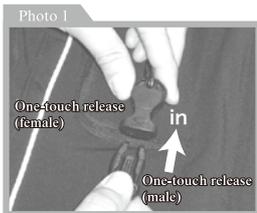
Buy an additional coiled wire for each additional saddle.

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### 5-2 Connecting Coiled Wire and Jacket with Hit-Air

- On the horseback, hold both sides of the female part of the "one-touch release" into which insert the male connector (Photo 1).
- Before getting off the horse, press the press button of the "one-touch release" for disconnection (Photo 2).



#### Coiled Wire

Is constructed with a strong wire made of Kevlar cord coated with urethane resin.



**CAUTION** ⚠ If cracks, peelings, burns or wear is found on the Kevlar cord's inner core becomes visible, replace it immediately. Otherwise, it may break or come off the loop setter. Each user must take responsibility for maintenance and replacement of the coiled wire.

#### Loop setter

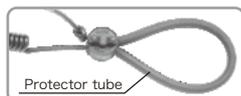
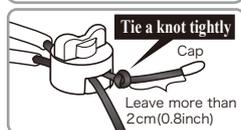
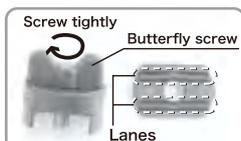
The Loop Setter is used to secure the coiled wire after its length is adjusted.

**CAUTION** ⚠ When you get on the horse, be sure that the butterfly screw has been screwed tightly.

**CAUTION** ⚠ Place the coiled wire between the loop setter's grooves, and tighten the butterfly screw firmly. Leave about 2cm (0.8 inch) of the wire out of the loop setter after it has been tightened cut off any excess wire and put a cap on the end of the wire. Otherwise, a wire may come off the loop setter and the airbag will not be activated.

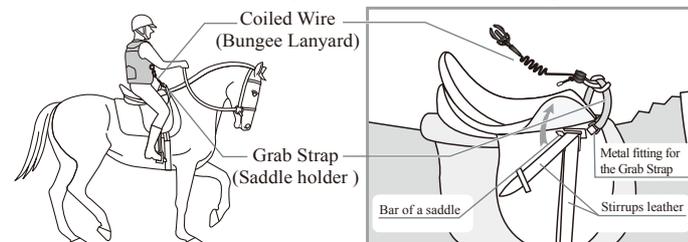
#### Protector tube

Made of such non-slippery materials as rubber or silicon to avoid abrasion of the part where the wire is tied.

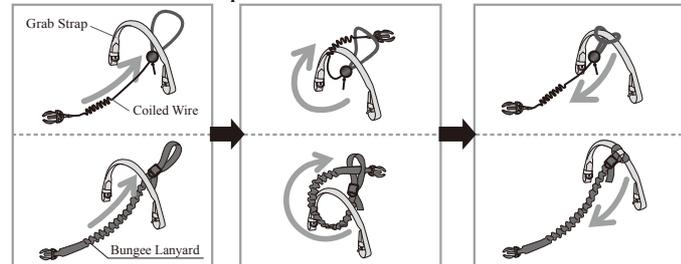


### 5-3 Attaching Coiled Wire/Bungee Lanyard to Saddle

#### 1. How to fix a coiled wire/bungee lanyard to the Grab Strap/Saddle holder.



#### How to fix to the Grab Strap.



Pass the coiled wire/bungee lanyard through the loop

Pull the coiled wire/bungee lanyard until the loop is tightly fastened to the center of the grab strap.

**Fix it properly for the safety and the peace of mind.**

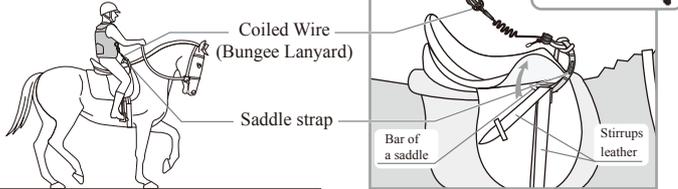
- CAUTION** ⚠ 1. If the coiled wire/bungee lanyard is not attached to the saddle strap properly, it may come off when it is stretched then the Hit-Air will not be activated.
- CAUTION** ⚠ 2. Replace the coiled wire/bungee lanyard when wear, burns, peeling or cracks are found. \*Do not use the coiled wire/bungee lanyard other than the one supplied by an authorized dealer.
- CAUTION** ⚠ 3. Don't use a rusty, cracked or deteriorated grab strap or its metal fittings to avoid any possible trouble in activating the system.
- CAUTION** ⚠ 4. Activation of the system may delay if a coiled wire/bungee lanyard is not fixed firmly to the proper place of the center of the grab strap and is moving around.
- CAUTION** ⚠ 5. Don't fix a coiled wire/bungee lanyard directly to the metal fitting for the grab strap which may be broken or may come off at the activation and the system may not inflate.

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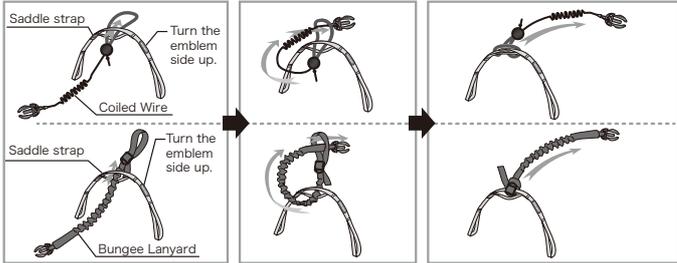
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## 2. How to fix a coiled wire/bungee lanyard to the saddle strap.

Fix the coiled wire/bungee lanyard to the center loop of the saddle strap.



### How to fix to the Saddle Strap.

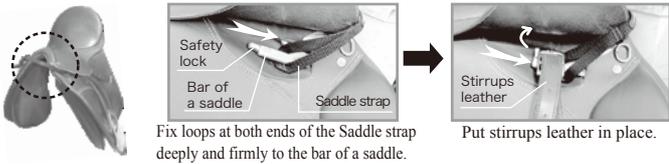


Pass the loop side of the coiled wire/bungee lanyard to the center loop of the saddle strap.

Pass the buckle side of the coiled wire/bungee lanyard to the other side's loop.

Pull the buckle side of the coiled wire/bungee lanyard until the other side's loop is tightly fastened to the saddle strap.

### Saddle strap is to be fixed to the bar of the saddle.



- CAUTION** 1. If the "coiled wire/bungee lanyard" is not attached to the saddle strap properly, it may come off when it is stretched then the Hit-Air will not be activated.
- CAUTION** 2. Replace the "coiled wire/bungee lanyard" when wear, burns, peeling or cracks are found. \*Do not use the coiled wire/bungee lanyard other than the one supplied by an authorized dealer.
- CAUTION** 3. Don't use a frayed and deteriorated saddle strap. Replace it immediately, otherwise it may be worn out and the system may not be activated.
- CAUTION** 4. The saddle strap connected to the bar of a saddle may come off at the activation and the airbag may not inflate

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## 5-4 How to fix a Coiled Wire

**1** Turn the emblem of the saddle strap (or Grab Strap) up, wind a protector tube around the upper side of the center of the saddle strap and cut the excess tube.

**2** Pass a coiled wire through the protector tube.

**3** Temporarily fix the coiled wire outside the protector tube in the loop setter and adjust its length.

**4** Stand up on the stirrups to make the coiled wire fully stretched to determine the optimum length of the coiled wire.

**5** Fix the coiled wire firmly in the loop setter, tie a knot in its end and cut off the excess, leaving more than 2cm (0.8 inch) of extra length and put a cap on the cut end.

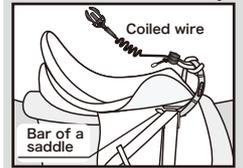
**6** END

**Be sure to tie a knot**

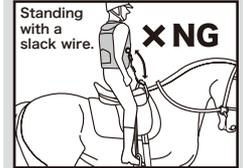
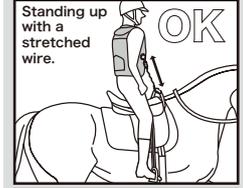
1. Form a loop
2. Pass a wire through the loop
3. Knot tightly

Leave more than 2cm (0.8inch) Closely

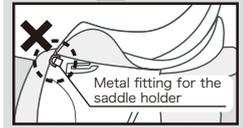
### Where to fix the saddle strap



### How to adjust the length of a coiled wire.



### CAUTION



Don't fix a coiled wire directly to metal fittings for the grab strap which may be broken or may come off and the system may not activate.

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## 6 Attention after Activation

Pay attention when the jacket with the Hit-Air is inflated as follows.

- CAUTION** 1. A hissing sound of the gas coming out of the gas cartridge into the air cushion or the end of the coil wire tapping a horse may excite the horse.
2. The vest with the Hit-Air is designed to provide protection especially to the wearer's neck, so when it is inflated, there will be some pressure around the neck, and if there is difficulty in releasing the helmet's strap, open the front fastener (or buckle) immediately.
  3. Look around the scene carefully, unzip and release the buckle to take off the jacket.
  4. If the scene of accident seems to be dangerous, go to a safe area before taking off the jacket.
  5. When the vest with the Hit-Air is inflated, a feeling of tightness may be felt, but the gas will leak out gradually. Therefore, remain calm even if the body with the inflated jacket is pressed down by something.
  6. If the air cushion is punctured when fully inflated, the gas in all the cushions will immediately escape and the cushions deflate.
- CAUTION** 7. If the Hit-Air inflates accidentally for some reason while riding, do not be alarmed. Look for a safe place and take an appropriate action.
- CAUTION** 8. If there is external damage to the Hit-Air due to its activation, take it to an authorized dealer for a maintenance check and to replace the gas cartridge. In cases of extreme damages externally or internally, it may not be repairable.
- CAUTION** 9. Be aware of the points listed below when attempting to re-assemble the Hit-Air by yourself after it is activated.

- Whether it has external damages (holes, scratches, tears, etc.)
- Confirm that the airbag is fully inflated when it is activated
- Confirm that the gas cartridge to be replaced is the correct size and unused.

Go over the points listed above and if there are no problems, re-assemble the Hit-Air carefully at your own risk. It may not work as designed if there are external or internal damages. For further details for re-assembling see Chapter 7, (Pages 26 to 29).

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## 7 Re-assembling Hit-Air after Activation

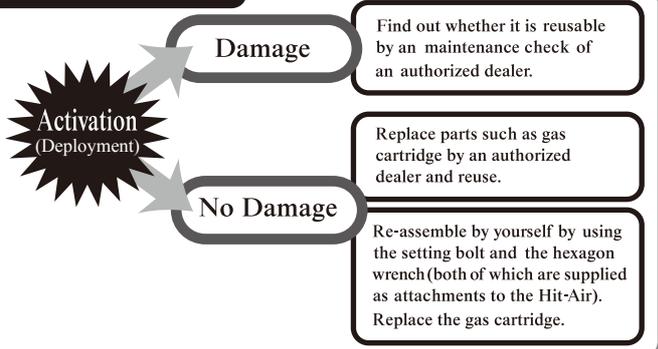
### 7-1 How to Re-assemble

We recommend to take the Hit-Air to an authorized dealer for a maintenance check and re-assembling after activation.

It can be reused if it is re-assembled in accordance with the following procedure, but unless it is done properly, it may not work.

It cannot be re-assembled if it is damaged by the previous activation.

#### How to Re-assemble



#### Outline of re-assembling by yourself

- Get an unused CO<sub>2</sub> cartridge and tools for re-assembling ready. See (P27)Chapter 1
- Set a key ball in the key box by using tools See (P27 to 28)Chapter 2 to 7
- Unscrew the used cartridge. See (P28)Chapter 8
- Remove all CO<sub>2</sub> gas from the air cushion. See (P29)Chapter 9
- Install an unused cartridge. See (P29)Chapter 11
- Zip and close the key box cover See (P29)Chapter 12

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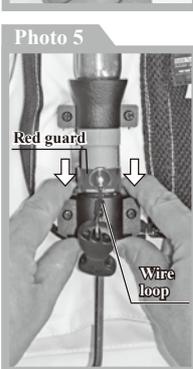
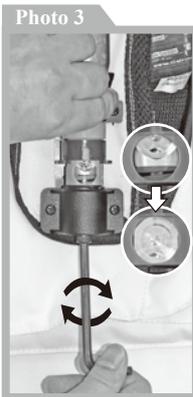
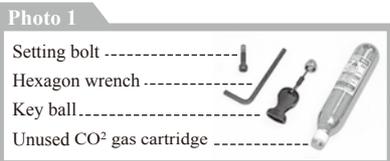
## 7-2 Re-assembling Key Box

1. Prepare a set of the hexagon wrench and setting bolt, unused CO2 cartridge (Photo 1) (The hexagon wrench and screw bolt are provided with a vest)

### CAUTION

As the CO<sub>2</sub> cartridge for the Hit-Air vest varies in size (capacity), choose the right size of the cartridge matching the size of the vest.

2. Insert the setting bolt to the bottom of the key box. (Photo 2)
3. Screw the setting bolt by the hexagon wrench. The metal hole of the key box comes down accordingly. (Photo 3) As tightening the bolt, the hole for the key ball is coming down.
4. Put the key ball and its metal ring to the metal hole. (Photo 4) Insert the key ball with a ring deeply into the hole of the key box. If it is blocked by the ring and does not come down, tighten or loosen the setting bolt and/or press down the edge of the ring around the key ball by the fingernail until the key ring fits in the hole.
5. Lower the red guard to check if the key ball is installed correctly. In case the red guard doesn't come down fully, the key ball is not installed correctly. (Photo 5) If the red guard is blocked by the ring and does not come down, tighten or loosen the setting bolt and/or press down the edge of the ring around the key ball by the fingernail until the key ball fits in the hole and the red guard comes down.



P.T.O.

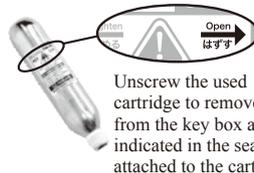
6. Unscrew the setting bolt and take it away from the bottom of the key box. (Photo 6)

7. Lift the red guard to the upper position. (Photo 7)

### CAUTION

If the system activates while the red guard is in the "locked" (down) position, it may cause the system malfunction or damage to the Hit-Air.

8. Unscrew the used gas cartridge by turning anticlockwise. (Photo 2)



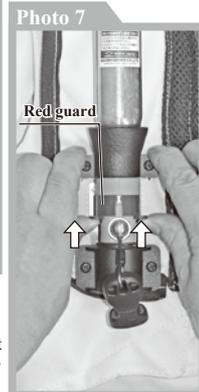
Unscrew the used cartridge to remove from the key box as indicated in the seal attached to the cartridge.

### CAUTION

After unscrewing the used cartridge, please check if the needle inside of the key box is not damaged. If there is any damage on the needle, please consult with an authorized dealer.

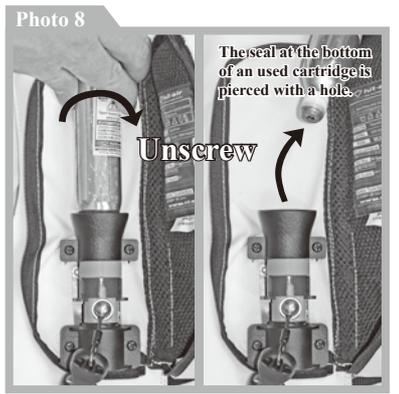


The airbag doesn't work nor inflate if the needle is damaged or deformed.



### WARNING

Remove the "setting bolt" from the "key box" without fail. Otherwise the Hit-Air will not be activated.



P.T.O.

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## 7-2

9. Remove air from the vest. (Photo 9)

To remove all remaining gas from the air cushion, spread the Hit-Air vest, face down on a flat smooth surface. By pressing down each cushion using your hands, remove gas completely.

Do not fold or roll up the Hit-Air vest to avoid damages inside. It may take time to release all the gas in the air cushion but it is necessary as it cannot be re-assembled with gas left remaining in any of the air cushion. (Photo 3)

### CAUTION

If the gas left remaining in any of the air cushion, it cannot be re-assembled.

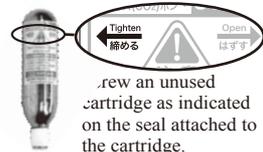
10. Re-pack all air cushions and fasten all buttons and Velcro. (Photo 10)

11. Screw a new CO<sub>2</sub> cartridge. (Photo 11)

Please confirm if the seal of the cartridge is not punctured and it's new.

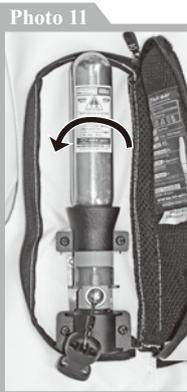
### CAUTION

If the cartridge is not seated completely and firmly, the Hit-Air may not be activated/inflated.



Insert a new unused cartridge as indicated on the seal attached to the cartridge.

12. Take the connector out through the hole of the key box cover. Close the zipper around the key box. (Photo 12)



END

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## 8 Washing

1. Hit-Air airbag system should not be washed/laundered.
2. Take the Hit-Air system and protectors (shoulder, elbow, back etc.) out from the vest and wash or launder the vest only in accordance with the washing instructions. (See. 4-7, page 16 to 18)
3. It should not be dipped in the water.
4. It should be dried in the shade if it gets wet.

How to remove stains.

- Wipe with a wet towel.
- Hang the Hit-Air (without detaching the CO<sub>2</sub> cartridge) and spray water with a hose or shower as trying not to wet the keybox part.

## 9 How to Store

Keep the Hit-Air by hanging up on a coat hanger. Do not fold or lay anything on it. Avoid high temperature and high humidity.

For longer life and safety, avoid the following conditions:

1. High temperature. (Under the direct sunlight, in the closed automobile, near the heater or open flames, etc.)
2. Exposure to rain or extreme moisture, including steam and high humidity
3. Storing items on top of the Hit-Air airbag system
4. Leaving Hit-Air within the reach of children, pets or other animals
5. Folded or rolled up (Being placed on a hanger is preferable.)

## 10 Change

If a problem listed below is found on the Hit-Air, consult with an authorized dealer to change or repair/replace.

1. Fabric part becomes frayed or torn. And/or the inner tube (white polyurethane film) is exposed.
2. A crack or rust is found on the "key box" or on the gas cartridge.
3. The attached parts are damaged. (e.g. Coiled wire/Bungee lanyard, Key ball set)
4. Considerable change of color or deterioration of material is found.

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