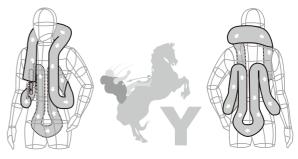
AIRBAG SYSTEM Manual

*Read carefully before use.



AIRBAG JACKET **ALL-IN-ONE AIRBAG USER'S GUIDE**



For Horseback Riding < Y-type Key Box >

www.hit-air.com

The size (capacity) of the cartridge varies from model to model. Make sure that the size(capacity) shown on the seal attached to the CO2 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"

2 If the CO² 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 CO² cartridge is screwed into the key box loosely, it may cause a malfunction. (See "Re-assembling Key Box" in page 25)

A CO² 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 CO² 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** Is there any deterioration of the wire loop or the coiled wire?

If so, replace it with a new one. Its replacement in every 1 to 2 years is recommendable.

A 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.

5 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.



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HAM-HR-AIO-Y-E210511

CO2

gas cartridge

Key Box

Key Ball

It will be activated when the key ball

A 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 jacket, make sure that items **1**-**3** are confirmed before use as follows:

- O Unless the Hit-Air is set correctly, it may not work or may cause a malfunction Caution A O Unless the Hit-Air is set correcuy, it may not not a constant of the constant of t key box without fail. ○ Use a Hit-Air CO² cartridge only. Do not use any other one. A CO² 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 CO2 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 unuse CO2 cartridge of the correct size is properly installed to the key box.
- The right size (capacity)cartridge for the model is installed. A CO² cartridge is tightly screwed into the key box.
- An used/empty cartridge should not be installed.
- Caution A. Re-assembling after the activation must be done in accordance with "Re-assembling Key Box"(see page 22 to 25)
- B Is there any deterioration of the wire loop or the coiled wire?

4 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 Saddie" (page 17 to 19)

(1)

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The jacket 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).

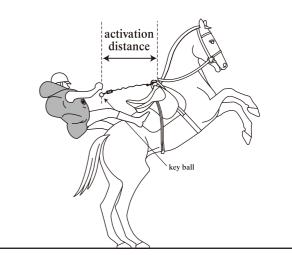
This causes the gas cartridge to release the CO² gas into the air cushions to inflate them immediately.

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.

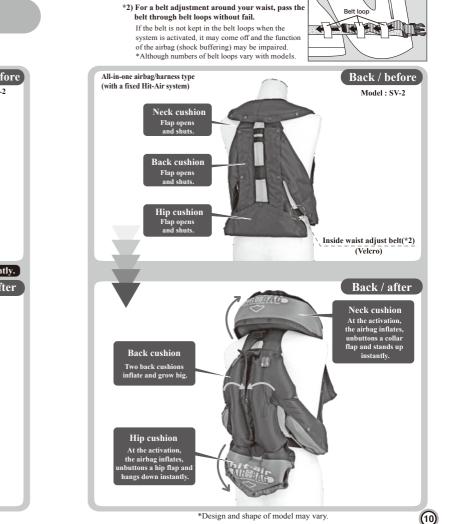
- (*1) The "activation distance" is defined as the length of the coiled wire stretched to its full length from the horse to the rider's key box on the Hit-Air without any obstacles in between.
- Name and Shape 3 **3-1** Name and Shape Front / before All-in-one airbag/harness type (with a fixed Hit-Air system) Model : SV-2 Key Box CO₂ gac cartridge Key Box Key Ball One-touch Relea (Connecter female Key ball to be pulled out to release the gas into the airbag instantly. Front / after Neck Chest cushion Chest cushio Side body cushio



- If the "coiled wire" running from the "key box" to the saddle holder touches an obstaclesuch 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.
- O 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 23) P12) may activate and inflate the Hit-Air. Connect or disconnect the "one-touch release" while you are on the horse.

(8)

Once a gas cartridge is used, it cannot be used again. Buy a new one from an authorized dealer.



(7)



4-1 Function

- As soon as the "activation distance" is reached, the Hit Air is activated and the CO² 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 . At the back of CO² cartridge and the key box, a key box plate (made of plastics) or a buffer material is placed to protect the rider's chest 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 damage to the Hit Air, fabric the garment, air cushion, Velcro, fastener, 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 (*3).
- *3) 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 urethane film to absorb and reduce the shock of impact as much as possible when they are inflated.
- The maximum pressure is about 20 kpa (0.2 kg/cm²) 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 (urethane) 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 $\rm CO^2$ gas is sent from the key box to each air cushion (urethane 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.

(11)

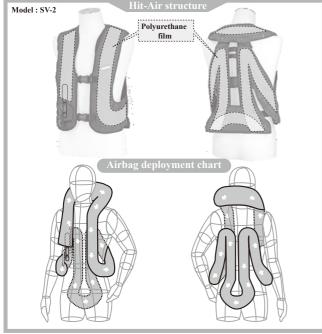
4-4 Key Ball (Y-type)

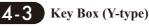
The key ball holds a compression spring and an interlocking needle in the key box. When the system is activated, the key ball comes out of the key box and a needle in the key box is released and punctures the seal of the gas cartridge to inflate the Hit-Air immediately. Key Ring Wier Loop One-touch connector (Female) Key ball set (Y-type)

The key ball and the key ring are integrated parts.

4-5 Hit-Air structure

Hit-Air of polyurethane film is attached directly to theinside of the cover inflates and absorbs the shock of impact.





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

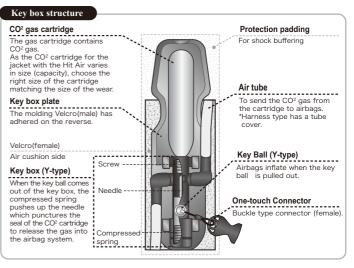
CAUTION

any direction (Photo 1).

1. Do not take the "key box" a part or remove any part.

CAUTION

 Screw in the gas cartridge fully until it seats firmly but do not over tighten If anything wrong, consult with an authorized dealer.



_eft

about

35kg

ront

about 30kg

(12)

Down

about 35kg

4-6 CO² Gas Cartridge

○ The gas cartridge contains CO² 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 CO² 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 CO² 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 **1** 2. Do not give the cartridge a strong shock.
- WARNING **A** 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 "Replacement Gas Cartridges list" to find out the right size for the jacket.
- CAUTION A 8. Use the gas cartridge for the Hit-Air only, and not for any other purpose.

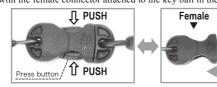
CAUTION \land 9. Use a Hit-Air CO² gas cartridge only. Do not use any other one.

- CAUTION \land 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 CO² cartridge fully until it seats firmly in the key box but do not over tighten.



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.



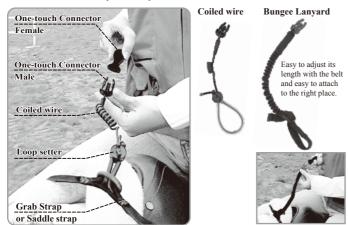


Hold the female connector and insert the male one. A clicking sound confirms that a connection has been made. Pull the male connector lightly to make sure that the connection has been made properly.

Male

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

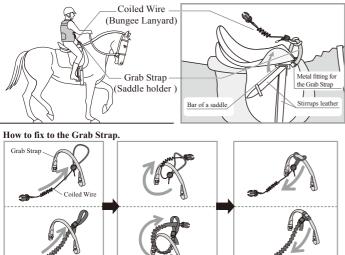
CAUTION A 3. Change it for a new one, if the insertion cannot be made properly. Insertion by force may cause a malfunction of the one-touch release.



Buy an additional coiled wire/bungee lanyard for each additional saddle

5-3 Attaching Coiled Wire/Bungee Lanyard to Saddle

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



Bungee Lanyard 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.

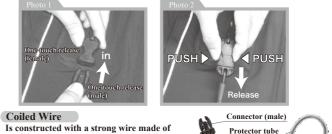
CAUTION 4. Activation of the system may delay if a coiled wire/bungee lanyard is not fixed firmly to the proper place of the center of the grab strap and is moving around.

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.



5-2 Connecting Coiled Wire and Hit-Air

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





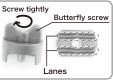
CAUTION If cracks, peelings, burns or wear is found or the Kevlar cord's inner core becomes visible, replace it immediately. Otherwise, it may break or come off the loop setter. Each user must take responsibility for maintenance and replacement of the coiled wire.

Loop setter

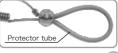
- The Loop Setter is used to secure the coiled wire after its length is adjusted.
- CAUTION A When you get on the horse, be sure that the butterfly screw has been screwed tightly.
- CAUTION A Place the coiled wire between the loop setter's groves, and tighten the butterfly screw firmly Leave about 2cm (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

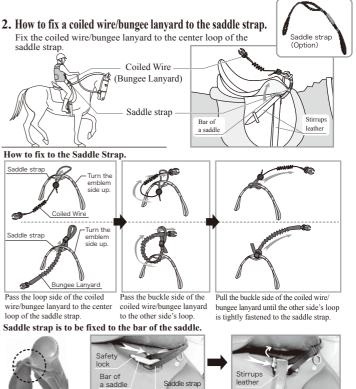
Made of such non-slippery materials as rubber or silicon to avoid abrasion of the part where the wire is tied.







(16)



Fix loops at both ends of the Saddle strap deeply and firmly to the bar of a saddle.

ar of a saddle.

Put stirrups leather in place

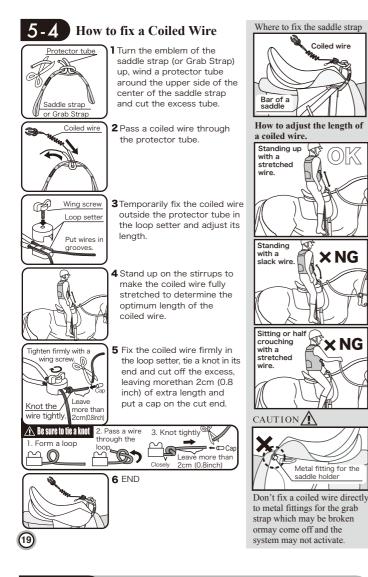
CAUTION 1. If the "coiled wire/bungee lanyard" is not attached to the saddle strap properly, it may come off when it is stretched then the Hit Air will not be activated.

CAUTION A 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 A. 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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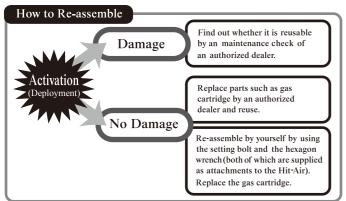


Re-assembling Hit-Air after Activation

7-**1** How to Re-assemble

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

- 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 can not be re-assembled if it is damaged by the previous activation.



Outline of re-assembling by yourself

Get an unused CO ² cartridge and tools for re-assembling	g ready.	See (P22)Chapter 1
Set a key ball in the key box by using tools	See (P22	to 23)Chapter 2 to 4
Unscrew the used cartridge.		See (P23)Chapter 5
Remove all CO ² gas from the air cushion.	See	e <p24>Chapter 7 to 8</p24>
Install an unused CO ² cartridge.		See (P25)Chapter 9
Put on the key box cover		See (P25)Chapter 10



Attention after Activation

Pay attention when 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 thecoil wire tapping a horse may excite the horse.
 - 2. 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 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 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 A 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 A 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 19. Be aware of the points listed below when attempting to re-assemble the Hit-Air by yourself after it is activated.
 - O Whether it has external damages (holes, scratches, tears, etc.)
 - O Confirm that the airbag is fully inflated when it is activated
 - \bigcirc 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 21 to 25).



7-2 Re-assembling Key Box

1. Get tools for re-assembling ready (Photo 1) Get an unused CO² cartridge, a hexagon wrench and a setting bolt readv

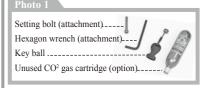
CAUTION As the CO² cartridge for the jacket with the Hit Air varies in size (capacity), choose the right size of the cartridge matching the size of the wear.

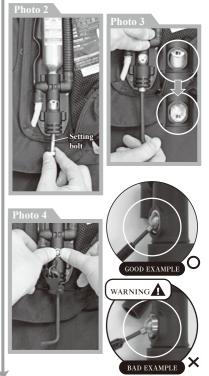
- 2. Insert a setting bolt into the hole at the bottom of the key box and tighten up by hand (Photo 2). (As tightening the bolt, the hole for the key ball goes down.)
- 3. When it becomes too tight by hand, tighten it further with the hexagon wrench until the inside hole is placed at the center of the outside hole. (Photo 3)
- 4. Set the key ball in the 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 Make sure that the key ring is completely settled down into the hole of the key box (See Good Example)

WARNING If not, (See Bad Example), the key ball may come out spontaneously or with a slight pull to cause unwanted activation of the Hit Air

P.T.O





(21)

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Re-assembling Key Box

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





 Remove the setting bolt. (Photo 7) Loosen the "setting bolt" by the 5 mm hexagon wrench to remove it.

WARNING Remove the "setting bolt" from the "key box" without fail. Otherwise the Hit Air will notbe activated.



WARNING

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7-2 Re-assembling Key Box

P.Ť.O.

 Install an unused CO2 cartridge (Photo 9) Screw an unused gas cartridge until it is firmly seated, do not over tighten. If there is a problem with fitment. consult with an



authorized dealer

Screw an unused cartridge as indicated on the seal attached to the cartridge

10. Take the female side of the one-touch connector out through the hole of the key box cover and close the key box cover. (Photo 10)





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



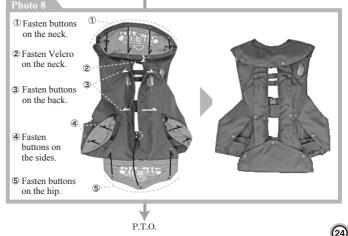
7. To remove all remaining gas from the air cushion, spread the Hit Air, face down on a flat smooth surface. By pressing down each cushion using your hands, knees and legs, remove gas completely. Do not fold or roll up the Hit Air to avoid damages inside. It may take time to release all the gas in the 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.



8. Re-pack all air cushions and fasten all buttons (Photo 8)



- 🕨 🎖 🛛 Was
 - Washing
- 1. Hit-Air all-in-one airbag/vest should not be washed/laundered.
- 2. It should not be dipped in the water.
- 3. It should be dried in the shade if it gets wet.

How to remove stains.

- Wipe with a wet towel.
- Hang it up together with a CO² cartridge, spray water on its surface with a shower except on the key box which should not get wet.

> 9)

How to Store

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 all-in-one airbag/vest
- 4. Leaving vest within the reach of children, pets or other animals
- 5. Folded or rolled up (Hang up on a coat hanger is preferable)

Change

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

- 1. The vest(cloth) or inner fabric becomes frayed or is torn and inner tubing (white polyurethane film) is exposed.
- 2. A crack or rust is found on the "key box" or on the gas cartridge.
- 3. The "coiled wire" or the "wire loop" gets scraped and frays.
- 4. Considerable change of color or deterioration of material.



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