For Motorcyle BB-type Key Box
Specifications, shapes and how to use may change without prior notice.

If there is no hole - it is an unused cartridge to be installed in the key box for use.
If there is a hole at its bottom, it is a used/empty one and not usable. Replace it with a new one.

A Hit-Air CO2 gas cartridge with a hole at its bottom is unusable.

Make sure that the red guard is not in the “locked(down)” position. The red guard 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)

Make sure that an unused cartridge is installed straight and firmly.
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 22 to 23 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.

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

*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 on our website, https://www.hit-air.com

A Hit-Air CO2 gas cartridge with no hole at its bottom is usable.
The activation while the red guard is in the “locked(down)” position may cause damage or a malfunction to the Hit-Air.

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

If a Hit-Air CO2 gas cartridge is screwed into the key box loosely, it may cause a malfunction. (See “Re-assembling Key Box” in page 23)

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

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.

Tie a knot tightly to fix a coiled wire to the motorcycle. A knot works as the stopper to prevent the wire from coming off when the Hit-Air is activated.

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.
Safety Precautions

Be sure to read this User's Guide carefully before using the jacket with the Hit-Air (shock-buffering system) for proper use and safety and keep it in the place you can reach anytime (e.g. in the motorcycle).

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.

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### 1. How to dismantle the Hit-Air inner system

1. Disconnect the Hit-Air from the "coiled wire" at the "one-touch release (connector)" before dismounting the motorcycle. Otherwise, it may cause an accidental activation.

2. Inspect the Hit-Air to determine if there is any damaged prior to wearing. If there is any damage, consult with an authorized dealer.

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

1. Make sure the "coiled wire" is securely attached to the motorcycle. Improper attaching may prevent the function of the Hit-Air.

2. Keep open flames and cigarettes away from the jacket with the Hit-Air as holes or tears caused by them will prevent the function of the Hit-Air. Keep and use at temperatures below 40°C/104°F as the gas cartridge may burst at a high temperature.

3. Disconnect the Hit-Air from the "coiled wire" at the "one-touch release (connector)" before dismounting the motorcycle. Otherwise, it may cause an accidental activation.

4. Inspect the Hit-Air to determine if there is any damaged prior to wearing. If there is any damage, consult with an authorized dealer.

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### 3. How to store

1. Do not fold or lay anything on it. Avoid high temperature and high humidity.

2. Keep the jacket with the Hit-Air by hanging up on a coat hanger. Do not wash a Hit-Air inner system. Remove it from the vest or jacket and wash the vest or jacket only.

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### 4. Change

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

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### 5. How to store

1. 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.

2. Disconnect the Hit-Air from the "coiled wire" at the "one-touch release (connector)" before dismounting the motorcycle. Otherwise, it may cause an accidental activation.

3. Inspect the Hit-Air to determine if there is any damaged prior to wearing. If there is any damage, consult with an authorized dealer.

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### 6. Dismantling and Assembling of Hit-Air inner system

1. When getting on the motorcycle, connect the male connector at the end of the coiled wire attached to the motorcycle with the female connector attached to the jacket.

2. Key ball to be pulled out to release the gas into the airbag instantly.

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### 7. Using Hit-Air

1. 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.

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### 8. Protect a motorcycle and a coiled wire against damage.

1. Protect a motorcycle and a coiled wire against damage.

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### 9. Key box (B-type)

1. CO2 gas cartridge

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### 10. One-touch release (Connector) (See P.20)

1. When getting on a motorcycle, connect the male connector at the end of the coiled wire attached to the motorcycle with the female connector attached to the jacket.

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### 11. Tools for Re-assembling

1. Hexagon wrench (9mm)
The jacket with the Hit-Air (Shock-buffering Protection System) is to be worn as an outerwear when riding a motorcycle. It will be activated/inflated immediately after a distance from the rider to the motorcycle exceeds the “activation distance” (*1) when the rider falls off or thrown off the motorcycle. It will be activated at the moment the key ball is pulled out from the key box (see 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 motorcycle. 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 strength 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 motorcycle 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 motorcycle touches an obstacle such as the rider’s body, any part of the motorcycle, 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 motorcycle, 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 motorcycle farther than the “activation distance”, a force of approximately 30kg-35kg (see P12) may activate and inflate the Hit-Air. Connect or disconnect the “one-touch release” while you are on the motorcycle.

Once a gas cartridge is used, it cannot be used again. Buy a new one from an authorized dealer.
Function
1. 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. The CO₂ 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 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 key ball and the key ring are integrated parts.
5. 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 punctures the seal of the gas cartridge to inflate the Hit-Air instantly.

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

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 swollen.
2. The maximum pressure is about 30kpa(0.3kg/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 gas is sent from the “key box” to each air cushion through urethane tubing.

CO₂ Gas Cartridge
1. The gas cartridge contains CO₂ gas.
2. 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.
3. Screw the CO₂ cartridge fully into the bottom until it cannot go any further. Do not over tighten.
4. Confirm that the used gas cartridge is empty of gas before disposing. Install the designated size (capacity) for the model.
5. The gas cartridge varies from model to model. Install the designated size (capacity) for the model. Visit https://www.hit-air.com/ for more information.

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.
2. Do not give the cartridge a strong shock.
3. Do not heat the cartridge.
4. Do not let corrosion form on the surface of the cartridge. If corrosion is noticed, replace it immediately.
5. Confirm that the used gas cartridge is empty of gas before disposing.
6. Do not cut or punch the gas cartridge.
7. The size (capacity) of the gas cartridge varies from model to model.

Key Box
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 punctures the seal of the gas cartridge to inflate the Hit-Air instantly.

WARNING
1. 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.
2. If the red slide cover is not set in the hole properly, the red slide cover will not come down.

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

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.

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.

Hit-Air inner system
Hit-Air inner system is attachable to or removable from the jacket or vest in the same way with buttons, zipper or Velcro.
**4-6 Hit-Air Structure**

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.

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**4-7 Dismantling and Assembling of Hit-Air inner system**

Take the responsibility for correct dismantling and assembling.

In case of washing or mending of the vest/jacket, 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/jacket on a flat surface.

   2. Unscrew the CO₂ cartridge to remove.

   **CAUTION**

   Never attempt to turn, loosen or remove the CO₂ cartridge except for reassembling.

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

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

   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/jacket.

   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/jacket.

   *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.

   *Shape of model may vary.

2. How to assemble the Hit-Air inner system

(Reverse of dismantling)

   9. Unfasten Velcro around the key box opening to separate from the vest/jacket.

   Take the Hit-Air system and shoulder, elbow and back protectors out and wash or launder the vest/jacket only in accordance with the washing instructions.

   1. Spread out the vest/jacket on a flat surface, with the inside up, and open the zipper across the lower part of the inside of the vest/jacket

   2. Place the key box of the Hit-Air in the opening of the right-hand side of the vest/jacket and fasten it with Velcro on all sides.

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*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.

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

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

9. Lastly, install a CO₂ 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 CO₂ cartridge)

5-1 One-touch Release
Use the “one-touch release” for easy connection or disconnection of the “coiled wire” attached to the motorcycle and the “key ball” inserted in the “key box”.

CAUTION
1. The one-touch release may come in contact with and cause damage to the tank or other part of the motorcycle. If such situation is expected, putting a seal around such parts for protection is recommended.

2. Hold the female connector and insert the male one.

3. Change it for a new one if/when the insertion is not made properly.

Using force to connect the one-touch release may cause its malfunction.

3. When getting off the motorcycle, make sure that the male part does not touch the hot part of the motorcycle, such as the engine or muffler, because the heat could damage the optimal shape of the male part.

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

- Hold both sides of the female part of the “one-touch release” into which insert the male connector (Photo 1).
- Before getting off the motorcycle, press the press button of the “one-touch release” for disconnection (Photo 2).

5-3 Attaching Coiled Wire to Motorcycle

Where and how to attach the “coiled wire” to the motorcycle varies with the motorcycle.

The rider’s movement when riding also varies. Taking these into consideration, decide the length of the “coiled wire” and the part of the motorcycle where it is to be attached (see page 17 to 18). Improper attaching may cause an accidental activation of the Hit-Air.

WARNING
1. Fix the “coiled wire” not in use on the part of the motorcycle, to avoid the “coiled wire” touching the heated engine etc., obstructing rider’s movement, causing damages to it or it the motorcycle.

CAUTION
2. Due to the elastic nature of the “coiled wire”, the “key ball” or the “one-touch release” may hit the fuel tank or other part of the motorcycle causing damages when the Hit-Air is activated.

3. If the “coiled wire” is not attached to the motorcycle properly, it may come off when it is stretched then the Hit-Air will not be activated.

4. Replace the “coiled wire” when wear,burns,peeling or cracks are found.

*Do not use the coiled wire other than the one supplied by an authorized dealer.

Coiled Wire
A strong wire of Kevlar cord coated with urethane resin.

Loop setter
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 is fixed.

1. When getting on a motorcycle, confirm that the wing screw is tightly screwed down.

2. Place a coiled wire in the grooves of the loop setter and tighten it firmly with the wing screw. Leave more than 2cm of the wire outside of the loop setter, cut any excess wire and cap the cut end.

3. After the length of the wire is adjusted, tie a knot tightly.

Otherwise, a wire may come off the loop setter and the airbag will not be activated.

Protector tube
Protect a motorcycle and a coiled wire against damage.

Pass a coiled wire through a protector tube to protect the part of the wire wound round the frame or handlebar etc. of the motorcycle. Cut the excess tube depending on the part where the coiled wire is fixed.

5-4 Where and how to fix a coiled wire.

1. Wind the protector tube round a frame, adjust its length and cut the excess tube.

2. Pass the coiled wire through the protector tube.

3. Temporarily fix the coiled wire in the loop setter and adjust its length.

4. Determine the length of the coiled wire by standing on the pegs to make the coiled wire fully stretched.

5. Fix the wire firmly with the loop setter and tie a knot. After that, cut the wire at 2cm from the knot and cap the cut end. (See the image below.)

Caution
Don’t fix a coiled wire to any part where it would disturb driving the motorcycle, where it would lead to damage a part of the motorcycle, where it may come off when it is pulled and where it becomes hot (over 60°C) such as the engine or muffler.

A knot works as a stopper of the wire.

6. End
How to adjust the length of a coiled wire.
Stand up on the pegs so as to make the coiled wire fully stretched.

Standing with a stretched wire.

Standing with a slack wire.

This may cause a malfunction of the airbag.

This may cause a delay of activation.

Scooter example 1

Standing on the scooter and the handle.
A wire fixed to the neck of the handle. Standing on the scooter and the wire is at full stretch.

Where to adjust and fix a coiled wire may vary depending on the size and make of the motorcycle as shown above.

[Optional Accessory] Connector holder
To hold the free end of a coiled wire while it is not in use.

Scooter example 2

A wire fixed to the seat. Standing on the ground and the wire is at full stretch.

Scooter example 3

A wire fixed to the rear seat for a passenger. Standing on the rear step in a half crouching position and the wire is at full stretch.

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.

If the Hit-Air is inflated by yourself after it is activated.
1. The jacket with 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 it is difficult release the strap of helmet, take the Hit-Air off immediately.
2. Checking around the situation calmly, unzip and release the buckle to take off the jacket.
3. If the scene of accident seems to be dangerous, go to the safe area before taking off the jacket.
4. When the Hit-Air is inflated, a feeling of tightness may be felt, but the gas will leak out gradually. Therefore, calm yourself even if the body with the inflated jacket is pressed down by something.
5. If the air cushion is punctured when fully inflated, the gas in all the cushions will immediately escape and the cushions deflate.

CAUTION
6. If the Hit-Air inflates accidentally for some reason while riding, do not upset. Look for a safe place and take an appropriate action.
7. To continue to ride with the inflated Hit-Air may be dangerous due to the increasing wind resistance etc. Remove it first.

CAUTION
8. 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 25 to 29).

7-2 Re-assembling Key Box

1. Prepare a set of the hexagon wrench and setting bolt, unused Hit-Air CO2 gas cartridge.
   (Photo 1)
   (The hexagon wrench and setting bolt are provided with the Hit-Air)

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

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.

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.
### Re-assembling Key Box

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 8)

**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.

9. Remove all CO2 gas from the air cushion.
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.

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

**WARNING**

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

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### 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/jacket and wash or launder the vest/jacket 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 CO2 cartridge) and spray water with a hose or shower as trying not to wet the keybox part.

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### 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 System / Jacket
4. Leaving jacket within the reach of children, pets or other animals
5. Folded or rolled up (Hang up on a coat hanger is preferable)

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### Change

If a problem listed below is found on the jacket with 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 “coil wire” or the “wire loop” gets scraped and frays.
4. Considerable change of color or deterioration of material.