

EVALUATION

Interchangeable back protectors

Do not turn your back to the protection

Mandatory on most circuits around the world for years, back protectors are interchangeable democratize and gradually used on the road. And we're not talking about sheets of foam built into most jackets of trade, but autonomous models sold separately. We also present a comparison of seven high-end models that we have had the opportunity to test, on road circuit. In the meantime, here are some concepts you should know about these essential safety equipment to make an informed choice ...

Text: Didier Constant - Photos: Didier Constant, OEMs and DR



Ridge, a recent invention

For the record, the first dorsal known is the work of Barry Sheene, the legendary British driver of 70-80 years, 500 cc World Champion in 1978 and 1979 on a Suzuki RG. Falls victim to many during his career and multiple fractures, Barry would have designed a ridge from that helmet visors worn superimposed so that the dorsal piat in one direction but not in another. After successfully used in the race, he would have sold the rights to his invention to Dainese, the Italian supplier today leader in protective equipment so that the latter refines the concept.



According to legend, Barry Sheene was the inventor of the ridge.

Very quickly, back in the paddocks spread of circuits around the world for the sake of protection, at first, then obligation thereafter. From the early 90s, many organizations made them mandatory. Today, they are required almost everywhere, apart from the road, competing as in the days of driving.

If the first craft were back and offered a degree of protection debatable, recent models are real safety

MODELS TESTED

ALPINESTARS BIONIC RACE SHIELD



Manufacturer's website:

<http://www.alpinestars.com>

Country of origin: Italy

Made in China

Construction: Polyurethane articulated plates

Weight (size L - with chest protector): 1085 g

Sizes: S, M, L, XL, XXL

CE: EN1621-2 Level 2

Residual energy transmitted: 7.4 kN

Price: \$ 229.95

Overall rating (out of 10): 8.25

Ergonomics: 8 - Protection: 8.50

Track - Road - Two

Presentation: [click here](#)

Specifications

- Meets the most rigorous standards
- European standards EN1621-2 Level 2
- DFD technology (dispersion of the momentum) specific to Alpinestars for excellent impact absorption with a thickness and weight.
- Chest protector included.
- Protective odds included.
- Kidney protector included.
- Slim, compact and flexible.
- Padded waist belt, low waist, adjustable Velcro and elastic bands.

Reviews Testers

Slim and compact, the Alpinestars Bionic Race Shield for the heaviest, however, this Comparo, partly because of his chest protector included, which alone weighs 180 g. It is also the most expensive of the group. The Bionic Race Shield fits easily under a jacket or a combination, without you having to contort. It also offers protection of the kidneys and advanced scores in the form of padded straps. Its low profile makes it comfortable to wear. Thanks to its articulated plate polyurethane, she married well the shape of your back and comply without embarrassment. The absence of ramps is a handicap for road use, but, on circuit, in combination adjusted, it's almost a good point. One of our testers has been preferred for use on circuits and particularly liked his chest protector. A very good buy.

equipment showing a technicality more pointed. Governed by strict standards, they offer a wide range of technologies to each manufacturer, which seek to combine the qualities sometimes antagonistic, as the protection, comfort, lightness and ventilation.

Today, there are two main types of interchangeable back, they made a sandwich of foam of different densities, a single piece and those made up of articulated parts, with a plastic shell and protective padding. Sometimes found these two types of construction from the same manufacturer. Those of the first family are gaining popularity because of their lightness, comfort and ergonomics. Some may even suffer more impact and be used again. This is not the case for others who must be replaced after an impact. The advantage of those of the second family is their greatest adaptation to the morphology of our backs. Indeed, as they are articulated - in several directions for some, such as Feel Tryonic 3.7 - they follow the movements of our best spine.

The vast majority of modern-type back "full length". That is to say they cover the back of the neck to the tailbone. Of course they come in different lengths to accommodate a large sample of drivers. Models for children and women are also available in some brands.



*In case of fall, there is a tendency to slide on the back, as evidenced by Lorenzo, and a good back protector is then appreciated.*



#### Standards and protection

Considered personal protective equipment (PPE) in accordance with European Directive 89/686/EEC, the back must be submitted to an EC type examination, conducted by an independent notified. To be approved, the ridges must comply with EN 1621-2, defined by the European Union. The standard of January 2004.

Under this standard, a ridge is subject to a minimum of five impacts each of 50 joules at strategic points, including two on points chosen for their apparent vulnerability. An impact of 50 joules is the force transmitted by a trapezoidal weight of 5 kg on the back dropped from a height of one meter.

EN 1621-2 is offered in two levels. In the case of Level 1 - the less demanding - the average residual force transmitted to the pilot must be less than 18 kN (kN = kilonewton), with a one-time impact up to 24 kN. To meet level 2, the average residual force should not exceed 9 kN, with a maximum one-time 12 kN.

Many European brands (Alpinestars, Axo, BMW, Dainese, Forcefield, Knox, REV'IT!, Spidi, Tryonic, Vidal Sport ...) submit their tests back to the European Union, but also those of independent laboratories. One can find this information on the label that is sent with registered products. It displays a logo of a motorcycle with a number (it corresponds to the level of the standard set next to the CE) and a letter (B to back - the back -, L for lumbar belts). There are also the size of the dorsal (XS, S, M, L, XL, XXL) and its maximum length in millimeters.

Many products made in Asia, some countries in Europe (formerly Eastern), or the United States are not subject to tests of the European Union or those of independent laboratories, which does not their manufacturers say that their products are certified. They



**Manufacturer's website:**

<http://www.dainese.com>

**Country of origin:** Italy

**Manufacturing:** Tunisia

**Construction:** Sandwich Astronmemory and polypropylene extruded

**Weight (size L):** 590 g

**Sizes:** S, M, L, XL

**CE:** EN1621-2 Level 2

**Residual energy transmitted:** 6.5 kN

**Price:** \$ 119.99

**Overall rating (out of 10):** 8.75

**Ergonomics:** 9 - **Protection:** 8.5

Track - **Road** - Two

**Presentation:** [click here](#)

#### Specifications

- Meets the most rigorous standards
- European standards EN1621-2 Level 2
- Astronmemory sandwich plates and extruded polypropylene.
- Functionality and comfort of a very high level
- Excellent protection.
- Full-size model, protects the neck to tailbone.
- Large, well covers the shoulder blades.
- Ventilation.
- Flexible.
- Velcro adjustable waist belt.
- Adjustable straps.

#### Reviews Testers

2011 real novelty in the range Dainese, N-Frame is the lightest of this Comparo by a good margin. Well it conforms to the shape of your spine and makes you forget to use. Content despite its price, it is among the top four in this comparison and even exceeds the Wave from the same manufacturer, one of the most popular on the market. It offers good ventilation and a double clamping system performed well. He blamed only a stiffness greater than the average, which is offset by its light weight. Used on circuit, it is especially nice for road use. One of our testers has been adopted from the first essay. Un very good buy!

**FORCEFIELD PRO SUB 4**

recognize the lack of information and logos mentioned above. It is recommended to be extremely wary of these products whose safety and manufacturing quality is often questionable, if not dangerous.



*Some manufacturers, like here Knox, offer several different back designs, responding to different levels of standard and price.*

#### Constraints to their widespread

If the ridges were easily adopted by runners, for obvious security reasons, it is quite different for the lambda motorcyclist who sometimes goes to remove basic protections that come with his clothes on the pretext that they affect comfort. An argument that surely will review the day he will spend his days immobile due to a serious injury to the column.

However, there are good reasons to be optimistic. For a year or two, a growing number of motorcyclists seem to be more concerned with their protection. In Europe, during the annual trip to motoplus.ca, I had the opportunity to see that many users were back they showed a conspicuous manner when they did not roll, bar, restaurant or in some places public. This trend is especially prevalent among the drivers of sport bikes is the hype, but it also betrays a growing concern for security.

Still, the dorsal part of the accessories that we buy and hope we do not have to use it, such as helmets, for example. Many motorcyclists believe wrongly that they should therefore pay the least possible for the equipment or do without when they are not mandatory. The main criticism that is made back to their high price. While some are detailed under \$ 100, most techniques can cost several hundred dollars. A high tariff, certainly, but our security there a price beyond which it is no longer essential? You decide. For my part, I adopt protective equipment for the same rule as when buying a helmet, a pair of boots or a pair of gloves. I try to get the best possible protection at the right price.

If the first back were stiff and often cumbersome, it is no longer the case today. Most top models are extremely flexible and compact, and we forget that the door after an adjustment period. In addition, all back in our survey, with the exception of the Bionic Race Shield Alpinestars and Knox Aegis, weigh less than a kilo, some less than 600 grams. Admit that it's perfectly reasonable.

Finally, it was often accused of being hot back and cause a high transpiration. Especially on hot summer days. If this is still true for some basic models, others incorporate sophisticated ventilation systems that significantly reduce this problem.



Manufacturer's website:

<http://www.forcefieldbodyarmour.com>

Country of origin: Great Britain

Manufacture: Taiwan

Construction: Nitrex

Weight (size L): 980 g

Sizes: S, M, L, XL

CE: EN1621-2 Level 2

Residual energy transmitted: 3.9 kN

Price: \$ 199.95

Overall rating (out of 10): 9.5

Ergonomics: 9 - Protection: 10

Track - Road - **Two**

Presentation: [click here](#)

#### Specifications

- Meets the most rigorous standards
- European standards EN1621-2, Level 2 and EN340: 2003
- Wide. Adequately protects the shoulder blades.
- No moving parts.
- Protect kidneys included.
- Protection unaltered even after several impacts, through technology RPT (Repeat Performance Technology).
- Thick, solid, flexible.
- Velcro adjustable waist belt.
- Adjustable straps.
- Perfect fit.
- Full-size model, protects the neck to tailbone.
- Is forgotten in stock.
- Molds to your body heat.
- The best protection on the market.

#### Reviews Testers

Superlative, the Forcefield Pro Sub 4 is the backbone of reference, one to which all others must be measured. In independent tests, it paid the luxury to save a note of impact better than that announced by the manufacturer. An example! Despite being one of the heaviest of the lot, it is nevertheless one of the most comfortable to wear, track and on the road. It perfectly matches the shape of your back and breathe well. Its design and Nitrex foams of different densities trust. Its dual clamping system is well thought out. We regret only occasional discomfort caused by the straps which pass blouse adjustment under the armpits, in the setting. It is the backbone that offers the best protection on the market. Best



*If "Highside" a good back cushion the impact and protect your spine.*

#### What to look back?

Contrary to what common sense suggests, back thicker and heavier is not necessarily the best ... except in the case of Sub Pro Forcefield Pro L2 and 4. Indeed, the British are back at the present time the best on the market, along with the 3.7 Feel Tryonic designed in Italy. They offer the best absorption of impacts (less than 4 kN for Sub Pro 4 and less than 6 kN for the L2 and Feel Pro 3.7). However, despite their greater weight and thickness, the three ridges are very comfortable to wear, track and on the road where they are forgotten.

The reputation of the manufacturer is not necessarily a guarantee of absolute performance. Thus, the models, Back Shield Air 7-8, BAP and Dainese Back Space mainly for the road, are certified Level 1 only. The Wave, one of the most popular on the circuit, narrowly passed level 2. The same goes for some models of Alpinestars (Bionic Back Protector Air, Air Bionic Back Protector Insert ...) that are limited to level 1. As shown, the major manufacturers offer different models with different levels of protection, at prices ranging from simple to triple. It is therefore advisable to clearly define their needs and budget and to read the labels to get the best possible product, the one that best meets the purpose for which you are targeting.



*Some ridges are well ventilated and are comfortable to wear at all times.*

However, the best back on the market do not adequately protect you if it is the right size. Do not order your back lightly. Switch to the store and try it first. Under your jacket or your combination to see if it fits easily in and is not too large. Try it also with additional layers of clothing to make sure it will be comfortable in any season, regardless of temperature.

Also check the cover offered by the ridge on which you set your heart on. She protects the column properly? Cover well does the shoulder blades, tailbone and collarbone ...? Make sure it does not hinder your movement (bending forward, rotating at the swaying), especially in the neck. If it comes into contact with the base of your helmet, it does not suit you and you could cause serious inconvenience in case of fall,

Buy, in our opinion. Four team members have adopted a daily basis.

#### FORCEFIELD PRO L2



**Manufacturer's website:**

<http://www.forcefieldbodyarmour.com>

**Country of origin:** Great Britain

**Manufacture:** Taiwan

**Construction:** Nitrex

**Weight (size L):** 970 g

**Sizes:** S, M, L, XL

**CE:** EN1621-2 Level 2

**Residual energy transmitted:** 5.6 kN

**Price:** \$ 149.95

**Overall rating (out of 10):** 9

**Ergonomics:** 9 - **Protection:** 9

Track - Road - **Two**

**Presentation:** [click here](#)

#### Specifications

- Meets the most rigorous standards
- European standards EN1621-2, Level 2 and EN340: 2003
- Wide. Adequately protects the shoulder blades.
- No moving parts.
- Protect kidneys included.
- Protection unaltered even after several impacts, through technology RPT (Repeat Performance Technology).
- Thick, solid, flexible.
- Velcro adjustable waist belt.
- Adjustable straps.
- Perfect fit.
- Full-size model, protects the neck to tailbone.
- Is forgotten in stock.
- Molds to your body heat.
- Second best in protection, tied with the Tryonic Feel 3.7.

#### Reviews Testers

The Forcefield Pro L2 is relatively heavy. However, it is very comfortable to wear, track and on the road to the point that we forget that the door after a few minutes. Like its big sister, she perfectly matches the shape of your back, breathe

or simply to use.

Promote preferably a model dual clamping system, that is to say with a lap belt and adjustable straps. Especially if you do use it on road and track.

Avoid plastic ridges that display sharp edges that may be, visible metal rivets or other accessories that can hurt you. In regard to the construction, focus on the back of a piece made to those with many moving parts. These could possibly come off if you fall and hurt yourself.

Finally, choose a model with adequate ventilation. Because if you do not wear because it keeps you too hot, it will be of no use whatever quality or level of protection.



**Several backbones include protection of the shoulder blades and sometimes the clavicles.**

Many models can receive an optional chest protector. Think about it when buying. Note that these Chest plates are used to protect against perforation (broken levers or other sharp objects), as well as against shocks.

As you can see, it is important to learn and to be a good decision before buying a ridge. There is no point to choose according to its looks - no one will see under your jacket - or its brand. The important thing is that you do well and protects you adequately.

and displays the same qualities. It offers the second best protection on the market, tied with the Tryonic Feel 3.7. One of our testers has made a ridge of choice. He had the opportunity to test its efficacy in a severe fall at high speed. Verdict of the doctor: "your spine owes a debt of gratitude!". An excellent purchase.

#### KNOX AEGIS



**Manufacturer's website:**

<http://www.knox-armor.co.uk/>

**Country of origin:** Great Britain

**Manufacture:** Taiwan

**Construction:** plastic plates hinged honeycomb structure

**Weight (size L):** 1050 g

**Sizes:** 4, 5, 6, 7, 8 and 9 plates

**CE:** EN1621-2 Level 2

**Residual energy transmitted:** 6.8 kJ

**Price:** \$ 81.99 to \$ 150.99

**Overall Rating:** 8.5

**Ergonomics:** 9 - Protection: 8

Track - Road - Two

**Presentation:** [click here](#)

#### Specifications

- Meets the most rigorous standards
- European standards EN1621-2 Level 2
- Wide. Adequately protects the shoulder blades.
- Construction-channel bending.
- The shape of the back.
- Protect kidneys included.
- Light, flexible and well ventilated.
- Full-size model, protects the neck to tailbone.
- Velcro adjustable waist belt.
- Adjustable straps.

#### Reviews Testers

The Aegis is the second heaviest of the Comparo, yet its unique design makes it very efficient and easy to wear. Thanks to its channel and bending plates articulated it perfectly matches the shape of your column that it follows the every move. It has an excellent dual clamping system. The straps attach to the front rather than on the side and with their adjustment loop removable and can be crossed for a better place. The lap belt can be adjusted in six different heights for a perfect fit. Well ventilated and well padded, it is pleasant to



*A good back can forget in a leather suit or jacket.*

#### COMPARISON OF MATCH 7 BACK PREMIUM

In the right column you will find the comparative trial of high-end back in September we had the opportunity to test, on road circuit, in recent weeks.

For the record, they all conform to European standard EN1621-2 Level 2, the most demanding in force at present. Although all are usable on the track and on the road, we indicate the environment in which they will perform best, in our view. The quality of these ridges is reflected in the notes that they have obtained, which take into account ergonomics, quality manufacturing, construction and protection they bring. With respect to their capacity to absorb shocks, the value of residual energy transmitted indicated is an average of results obtained by these back in independent tests. This is not the figures provided by manufacturers, which are often more flattering. All ridges were weighed on a precision balance food. You see from the information provided below that the material is very high bill. To choose according to personal preference, because in regard to protection, they are all recommended ...

#### CATEGORIZATION

##### Sort by Weight

1. Dainese N-Frame
2. Knox Contour
3. Feel Tryonic 3.7
4. Forcefield Pro L2
5. Forcefield Pro Sub 4
6. Knox Aegis
7. Alpinestars Bionic Race Shield

##### Ranking by impact resistance

1. Forcefield Pro Sub 4
2. Forcefield Pro L2
2. Feel Tryonic 3.7
4. Dainese N-Frame
5. Knox Aegis
6. Alpinestars Bionic Race Shield
7. Knox Contour

##### Sort by ergonomics

1. Forcefield Pro Sub 4
2. Dainese N-Frame
2. Feel Tryonic 3.7
2. Forcefield Pro L2
5. Knox Aegis
5. Alpinestars Bionic Race Shield
7. Knox Contour

##### Final

1. Forcefield Pro Sub 4
2. Forcefield Pro L2
2. Feel Tryonic 3.7
4. Dainese N-Frame
5. Knox Aegis
6. Alpinestars Bionic Race Shield
7. Knox Contour

##### AND THE WINNER IS ....

The big winner of the match comparison is the **Forcefield Pro Sub 4** that in addition to being the strongest impact is also one of the most comfortable to wear on road and track. Four of our employees have bought one from this trial and are delighted.

The other ridge that emerges with the honors of this is the **Tryonic Feel Comparo 3.7**. This ridge made in Italy is for the original fans of winter sports. It equips the Austrian team including alpine skiing and especially downhill - and more and more motorcyclists. Tryonic also has many followers in Europe in the worlds of motocross and enduro. Tied for second on protection, with the **Forcefield Pro L2**, it is also pleasant and comfortable to wear under a jacket. It has in addition an excellent ventilation system.

use while offering good protection. One of our testers the door every day. A great buy.

#### KNOX CONTOUR



##### Manufacturer's website:

<http://www.knox-armour.co.uk/>

**Country of origin:** Great Britain

**Manufacture:** Taiwan

**Construction:** 5 layers of different density foam, honeycomb structure

**Weight (size L):** 600 g

**Sizes:** S, M, L, XL

**CE:** EN1621-2 Level 2

**Residual energy transmitted:** 7.7 kN

**Price:** \$ 168.99

**Overall rating:** 8

**Ergonomics:** 8 - **Protection:** 8

Track - **Road** - Two

**Presentation:** [click here](#)

##### Specifications

- Meets the most rigorous standards
- European standards EN1621-2 Level 2
- Wide. Adequately protects the shoulder blades.



Finally, the **N-Frame Dainese**, the lightest of this Comparo and least expensive, we also amazed. It is the least intrusive to wear on the road and it ranks fourth in terms of protection. An excellent back at any point of view.

These seven are held back in a handkerchief and on overall performance and impact resistance - they are all below 9 kN required by the standard EN1621-2 Level 2.

Whatever you choose back from those that Comparo, you will make a great deal. All, without exception, have been adopted by at least one member of our team. In total, 10 people participated in this comparative trial.

- The shape of the back.
- Protect kidneys included.
- Light, flexible and well ventilated.
- Full-size model, protects the neck to tailbone.
- Velcro adjustable waist belt.
- Adjustable straps.

#### Reviews Testers

On paper, the contour represents the best compromise. Lightweight, contoured to fit the curvature of your back, well ventilated, it offers good protection and more. Moreover, it is wide at the top and covers well the shoulder blades. However, the use is one of the least comfortable to wear, especially in a leather suit. His lap belt which is not vertically adjustable top and back hair cause some discomfort. It is also the least flexible, one we feel most present. One of our testers the door every day. A good buy, despite these criticisms.

#### FEEL TRYONIC 3.7



Barry Sheene thank you!

**Price:** € 159

**Overall rating:** 9

**Ergonomics:** 9 - **Protection:** 9

Track - Road - **Two**

**Presentation:** [click here](#)

### Specifications

- Meets the most rigorous standards
- European standards EN1621-2 Level 2
- Wide. Adequately protects the shoulder blades.
- Polypropylene shell lined with expanded polystyrene and foam of different densities.
- Articulated vertebrae (5-7) cushioned by pads of thermoplastic polyurethane and nylon joints.
- Allows movement back and side before
- The shape of the back.
- Light, flexible and well ventilated.
- Full-size model, protects the neck to tailbone.
- Velcro adjustable waist belt.
- Adjustable straps.
- Second meilleure pour protection, on par with the Forcefield Pro L2.

### Reviews Testers

The Tryonic was a heart for several testers. Ergonomics makes it super comfortable to wear. Slightly shorter than its competitors, it is easy to put on a jacket attached to a pant, which is not the case with all back. Its construction articulated vertebrae cushioned by pads of thermoplastic polyurethane and nylon joints allows it to follow your movements without hindering. Even in extreme swaying. Flexible in all directions is the most versatile of the lot. The lap belt goes a bit high, which can become annoying after a while. Nevertheless, it is the second best in protection, tied with the Forcefield Pro L2. What does no harm. It is also perfectly suited for use on the track. Scope daily by one of our testers. A great buy.