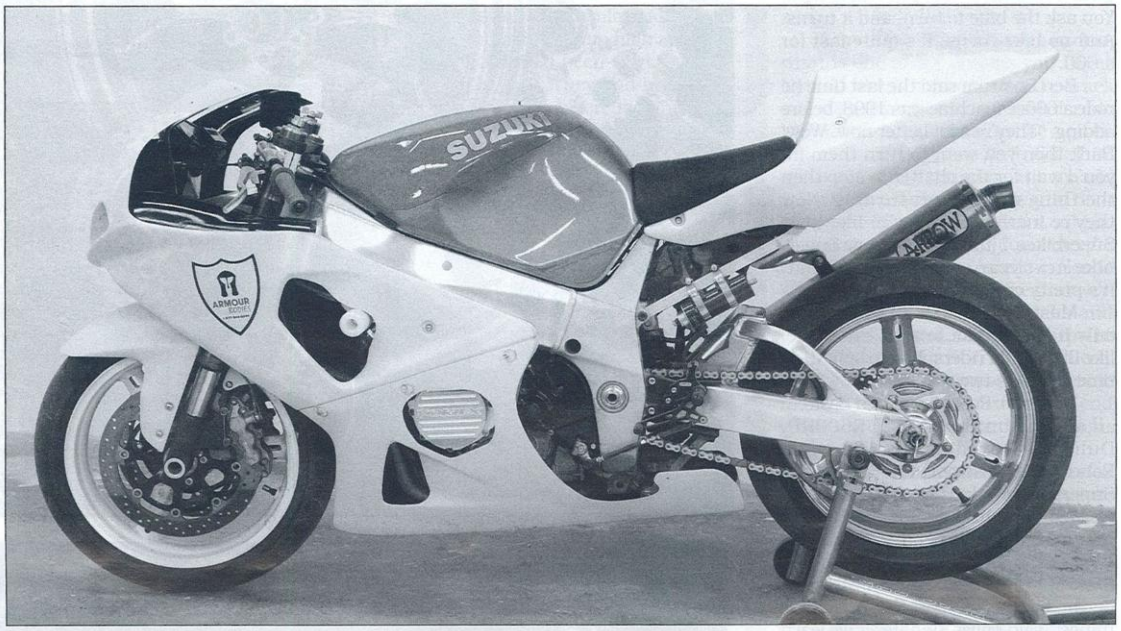
How Bodywork Compares

By Scott Morse

Editorial Note: Scott Morse runs Morse Custom Fiberglass, a shop in Colorado Springs, Colorado that sells, installs, paints and customizes new bodywork, as well as repairing used bodywork. When he called and proposed writing up a guide to bodywork for Roadracing World, *we said we'd look at the finished product and then decide whether or not to run it. This is the finished article, it contains useful information, and obviously we have decided to run it.*

Not every brand of bodywork available in the United States is included. A total of seven bodywork companies participated in this buyer's guide. Beasley Fiberglass and Racers Dream declined to participate, and Vortex sells bodywork made by Cheetah Racing Bodies. As Morse tells it, Multi-Tech Bodyworks did not respond to a FAXed invitation to participate; Multi-Tech Bodyworks says it never received any invitation. In the case of Body Double, the company says it was too busy making already-ordered custom parts for customers to participate.

From the beginning, Roadracing World *requested that some bodywork companies not be invited to participate due to various parts delivery, customer service or bill payment issues, on the theory that we didn't want to encourage readers to do business with a company we wouldn't do business with.*



Armour Bodywork as test-fitted on a Suzuki GSX-R1000. Armour ranked first in finish and second in fit. Photo by Brian J. Nelson.

Inevitably, every other phone call or e-mail I get involves the same question: "What is the best fiberglass race bodywork on the market?"

The answer is always the same: "It really depends on what you are looking for in a race body."

This statement is met with a significant pause while the customer thinks about it. After a few seconds, I start to feed them criteria. Everyone who buys fiberglass race bodywork has criteria on which they base many of their race-related purchases. Some focus only on price, others on durability, others on aesthetics, and others on a combination of several of these factors. Any manufacturer, dealer, or retailer who states that they market the best bodywork in the industry is really saying that they have incorporated several quality criteria that they deem important into their bodywork.

In order to assist our customers, and racers in general, we decided to work with *Roadracing World* putting together this buyer's guide.

"Why a buyer's guide, and not a shoot-out?" you ask. Well, a shoot-out has an overall winner at the end of the article. If we did that, then we would not be practicing what we preach. A buyer's guide allows us to compare several sets of fiberglass bodywork and rate them per category. This way, a racer can focus on the categories that matter most to them, and make an informed purchase of which bodywork is the best for them.

The categories that we will be addressing in this article are:

Finish: What finish does the bodywork have on it out of the box? What will it take to prep the bodywork for paint?

Fit: How does the bodywork fit on the motorcycle that it was made for?

Weight: How much does the entire set of bodywork weigh? How does it compare to other brands of bodywork?

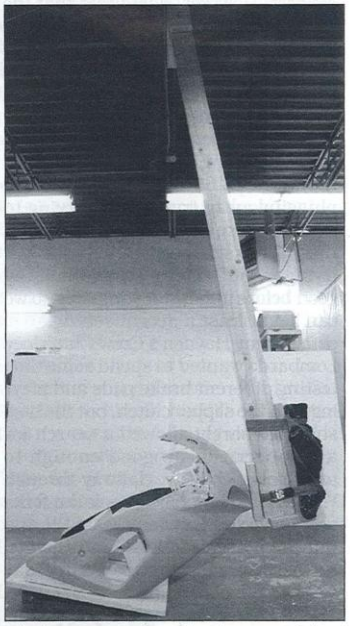
Price: What will it cost to purchase a set of bodywork for your bike?

Durability: How does the bodywork stand up to impact and burn-through tests?

Flexibility: What will flexing of the bodywork do to the finish, structural integrity, and fit of the bodywork?

Someone else may try and explain to you what all the different race bodies are made out of. Do you really care? Even a bit? I thought so. My belief is that it could be made from burlap and paste as long as it fits my purchasing criteria. I believe that from a racer's viewpoint, bodywork construction is fairly

The nine sets of bodywork included in this comparison. Photo by Brian J. Nelson.



The impact test rig, with a large, weighted pivoting arm rigged to smash into the nose of a fairing. Photo by Brian J. Nelson.

irrelevant as long as it fits the needs of the consumer in terms of weight, flexibility, price, durability and fit.

Finish:

When Joe Racer receives a huge box full of fiberglass racing bodywork from the shipping company, it feels just like the holidays. He just knows that inside that box is going to be something really cool for his racebike. He brings it into the middle of his living room, sits on the floor next to it, mutes the television (most likely tuned to motorcycle racing), and starts unpacking.

The manufacturer's chance to make a first impression usually lies with the initial look and feel of the parts directly out of the box. A good finish will invoke a feeling of money well spent in the consumer. If the part comes out of the box with bumpy primer, visible air pockets, seam lines, or cracks, the customer may feel a bit cheated out of his hard-earned cash.

In order to make the judging in this category as objective as possible, I relied on my absolute best local source for paintwork. Fat Boyz Auto Body in Colorado Springs, Colorado has been in the business of painting custom show cars and motorcycles for many years. The shop's attention to detail and perfectionism has won awards and recognition from the local market of enthusiasts. Evan Locke from Fat Boyz spent several hours judging each set of bodywork inside and out, focusing on what it would take to paint the bodywork out of the box. The scale is from 1 to 10, with 1 being the highest possible quality of finish, and 10 being the lowest. The following is his evaluation:

Armour Bodies – Finish Rating: 2

The Armour Bodies entry was really a showstopper. The finish is a buff urethane primer with a black painted interior. The lay-up of the bodywork boasts clean lines due to the use of one large piece of cloth in each laminate layer as opposed to many smaller pieces.

- Very minor fill work is needed.
- Good amount of primer for blocking.
- Inner surfaces excellent.

SharkSkinz - Finish Rating: 3

SharkSkinz has been in the business long enough to know that a good finish is very important. The SharkSkinz entry was extremely clean and well finished in a gray urethane primer. The only difference in finish between the Armour Bodies entry and SharkSkinz entry was the interior finish and lay-up. SharkSkinz did paint the interior of the bodywork black, but it was over-sprayed by the gray primer.

- Very minor fill work is needed.
- Good amount of primer for blocking.
- Inner surfaces acceptable.

AirTECH Grey Line – Finish Rating: 4

AirTECH's Grey Line showed up very clean. This set is manufactured in Mexico and is shipped from the main AirTECH office in California. The finish is a white gel coat. Some edge clean- up work was needed prior to shipping.

- Minor fill work is needed.
- Primer is needed for painting.
- Inner surfaces good.

Cheetah Racing Bodies – Finish Rating: 4

Cheetah with its "go get em" attitude and new corporate image sub-

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	Name/Address	Web Url
Manufacturers	AirTECH 2530 Fortune Way Vista, CA 92083 (760)598-3366	http://www.airtech-streamlining.com
	AK Composites 7522 Slater Ave, Suite 108 Huntington Bch, CA 92647 (714) 841-2155	http://www.akcomposite.com
	Armour Bodies 4355 Hwy 11 North North Bay, Ontario P1B 8G3 Canada (877) 944 - 8244	http://www.armourbodies.ca
	Cheetah Racing Bodies 5575 Doug Taylor Circle Saint James City, FL 33956 (941) 283-5700 (888) 388-7066	http://crbodies.com
	GP Composites 5090 93rd Ave. N. Pinnellas, FL 34666 (813) 477 - 2181	http://www.gpcomposites.com
	Hot Bodies Racing 12600 Stowe Dr. Poway, CA 92064 (800) 555-2805	http://www.hotbodiesracing.com
	SharkSkinz 300-50 Industrial Park Blvd. Sebastian, Florida 32958 (772) 388 - 9621	http://www.sharkskinz.com

Bodywork

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mitted a very quality bodywork set. The Cheetah bodywork is finished in a gray urethane primer, and sports a raised cheetah paw logo on each piece. The primer could have been thicker for blocking, but was just fine for scuffing and shooting with paint.

- Minor fill work is needed .
- More primer needed for blocking.
- Inner surfaces good.

AirTECH Standard – Finish Rating: 6

AirTECH's standard line uses a white UV protective coating that shares similar properties to gel coat, with a twist. AirTECH has changed the formula of the topcoat to help combat the undesirable properties of straight gel coat. This set of bodywork appeared to have imperfections in it that came from the mold itself. This means that AirTECH may have to refine this particular mold, or make a new one to combat this small issue. As with the Grey Line bodywork, some edge work is needed.

- Major fill work is needed.
- Primer is needed for painting.
- Inner surfaces rough.

GP Composites – Finish Rating: 6

GP Composites is finished in a gray urethane primer. A few visible air pockets were discovered that would need repair, fill, and primer prior to painting.

- Fill work is needed.
- Spot primer may be needed.
- Inner surfaces good.

AirTECH Premium – Finish Rating: 7

AirTECH's Premium bodywork is designed to be the company's highest-quality bodywork. The finish is a form of gel coating that AirTECH has changed drastically. The coating does not seem to share many of the properties of the traditional gel coat. In fact, we couldn't figure out what it was and had to call the boys over at AirTECH and ask them. The primer on the parts was not thick enough to block or scuff-and-shoot, and a complete prep and primer is need prior to painting.

- More than minor fill work is needed.
- Primer is needed for painting.
- Inner surfaces rough.

AK Composites – Finish Rating: 7

The AK Composites entry was the most interesting set out of the entire group. AK sells bodywork in two states, primer, and no primer. When asked why the company sent a set for this guide with no primer, the owner of the company said very confidently that AK has been selling more of the bodywork without primer than with. He felt that even his un-primered bodywork would hold its own in the finish comparison. Well, he was right. The parts that we received were very clean and nicely presented. Obvious finish work was needed prior to painting, but this was expected.

- Major fill work is needed (mostly seams).
- Primer is needed for painting.
- Inner surfaces good.

Hot Bodies Racing – Finish Rating: 7

Hot Bodies (not to be confused with GP Composites Hot Bodies) came to us finished in a gray urethane primer. A complete coat of primer should be applied for a quality paint foundation prior to painting; mounting points are clean and well-formed.

- Fill work needed.
- Primer is needed for painting.
- Inner surfaces dry and rough.

Finish
1=Best Possible , 10=Worst Possible
Listed Best To Worst
(Listed In Alphabetical Order In Case Of Tie)

Armour Bodies	2
SharkSkinz	3
ArtTECH Gray Line	4
Cheetah	4
AirTECH Standard	6
GP Composites	6
AirTECH Premium	7
AK Composites	7
Hot Bodies Racing	7

WEIGHT

The weight of bodywork is quite often an issue of concern for racers. Some even go as far as to spend thousands of dollars on carbon-fiber or carbon-Kevlar race bodies to save ounces in weight that might make the difference at the finish line. I have had the pleasure of evaluating some of the industry's carbon and carbon-Kevlar race bodies and have found only small weight savings, compared to the lightest fiberglass race bodies. The real value is that you can outfit your bike with fiberglass for a fraction of the cost of carbon or carbon-Kevlar. I will agree that some of the strength properties of carbon-fiber and Kevlar are certainly appealing, but at what price? In fact, manufacturers such as Armour Bodies and AK Composites have added Kevlar to fiberglass bodies, to reinforce mounting and impact points. In the same respect, AirTECH's premium-line bodies and Hot Bodies Racing bodies are reinforced with carbon-fiber at mounting and impact points.

On the other hand, weight at the club level may not be quite as important. The top five racing bodies have roughly a pound difference between them. This could be the difference of utilizing the Port-O-Can before your race, or giving up snack cakes for a month.

Each set of bodywork was weighed on a shipping scale. The following are our findings, listed from lightest to heaviest:

Note: AK Composites gained a relative weight advantage by submitting bodywork without primer. If the AK Composites bodywork had been primered, it would have been slightly heavier.

Weight
Listed Lightest To Heaviest
(Listed In Alphabetical Order In Case Of Tie)

AirTECH Premium	7 pounds, 6 ounces
Armour Bodies	7 pounds, 12 ounces
AK Composites	7 pounds, 13 ounces
Hot Bodies Racing	9 pounds, 10 ounces
Cheetah	8 pounds, 10 ounces
SharkSkinz	8 pounds, 11 ounces
GP Composites	8 pounds, 12 ounces
AirTECH Standard	9 pounds, 11 ounces
AirTECH Gray Line	14 pounds, 6 ounces

FIT

Fit might possibly be one of the most important categories for many racers. How much is bodywork worth if it doesn't fit? Well, if you are good with your hands, and handy with certain fiberglass modifying tools and methods, then it is not that big of a deal and you can adjust your bodywork. For the rest of the racing public, a good fit out of the box is vital.

Fit is actually one of the main priorities for all of the fiberglass bodywork manufacturers as well. Once a set of bodywork is out of the shop, they want it to be trouble-free for the customer. Otherwise, time spent on the phone walking the customer through the fitment process will reduce the actual profit margin of the particular set.

A set of bodywork is said to fit well if you can drill a hole in the center of the designated mounting point, and line it up with the corresponding mounting point on the motorcycle. This philosophy only works with a bike that does not have a bent frame.

In order to evaluate each bodywork manufacturer against this category, we fit each set of bodywork to the applicable motorcycle. In doing so, we could rate which bodywork fit best, and which fit worst. In general, most of the bodywork fit very well, as it should. Some just fit a little better than others due to differences in flexibility and design. The rating is broken down into a four-category rating scale.

Perfect Fit includes an effortless fit with bodywork design characteristics contributing to trouble-free installation.

Exceptional Fit consists of no fitment issues, flexibility contributing to the fit, and good aesthetics.

Good Fit encompasses fit with some issues that do not impair bodywork installation and good aesthetics.

Poor Fit includes significant effort to ensure a decent fit, with all of the designated mounting points not lining up with mounting points on motorcycle.

The following are our findings:

Rating – Perfect Fit

AK Composites

AK Composites is nice enough to drill a few holes in the bodywork before shipping the parts. Usually, I would disagree with drilling the mounting holes, but it made installation just so darn easy. There is a catch: The AK workers only drilled the holes that should be drilled. Places where the ¼-turn fasteners go and the mirror mount holes were left alone. These holes can vary from bike to bike. AK even precut the hole to accommodate the GSX-R left frame slider. Installation was a breeze with this set of bodywork.

Rating – Exceptional Fit

AirTECH Premium

With a name like premium, this bodywork had better fit well, and it did. No surprises, and no issues. As with Cheetah, I would like to see the windshield holes punch-marked. All of AirTECH's GSX-R bodywork has additional mounting points on either side of the lower. Most manufacturers do away with these mounting points because they are not really necessary for a one-piece lower. However, I feel that they are a nice touch, and add options when fitting bodywork to a racebike. Use them or not,

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they are there if you want them.

Armour Bodies

Super flexibility made the Armour Bodies entry fit nice and clean, as we expected. The holes for the windscreen were punch-marked for easy locating and drilling.

Cheetah Racing Bodies

Over the past year, we have fit several sets of Cheetah Bodywork, and we have enjoyed it each and every time. The Cheetah bodywork lines up just how it should with no surprises. If there was one thing that I could ask Cheetah to do, it is punch-mark the spots that should be drilled for the windscreen.

Hot Bodies Racing

The Hot Bodies entry fit well with no real surprises. As with Cheetah and AirTECH premium, the holes for the windscreen need to be marked to facilitate easy location and drilling.

SharkSkinz

SharkSkinz has had many years to perfect the way it makes bodywork. We were not surprised that the SharkSkinz set fit really well. As with Armour Bodies, the holes for the windscreen were punch-marked for easy locating and drilling.

Rating – Good Fit

AirTECH Standard

AirTECH's standard line bodywork fit well. We found that we had to slightly drag (offset) a few of the mounting holes to make it fit without putting undue stress on the bodywork. This alone is not that big of a deal. By taking your time and drilling your holes only after you have set the bodywork on the motorcycle and marked your mounting points, you can make this set of bodywork fit very well.

GP Composites

GP Composites is well known in the industry and goes that extra step to drill out the mounting holes in the bodywork. However, the company may have gone a step too far. First, the mounting points that connect the upper to the lower were drilled. This worked out perfectly for the fasteners that we were using, but could have easily gone the other way. We've found that racers use all different kinds of fasteners to connect the upper fairing to the lower fairing. Drilling these ahead of time may leave a racer with some very large holes to compensate for.

Second, the four large holes for the mirror mount studs (two on each windshield post) were drilled, and the top windshield hole is drilled oversize to accommodate the larger bolt needed for the stock fairing stay. If you are running a stock fairing stay, this bodywork will fit without issues. If you are running an aftermarket fairing stay, you will have to drill several new holes, and use washers at the top of the windshield posts. After doing this, you will still be left with the four large holes where the mirror would normally be.

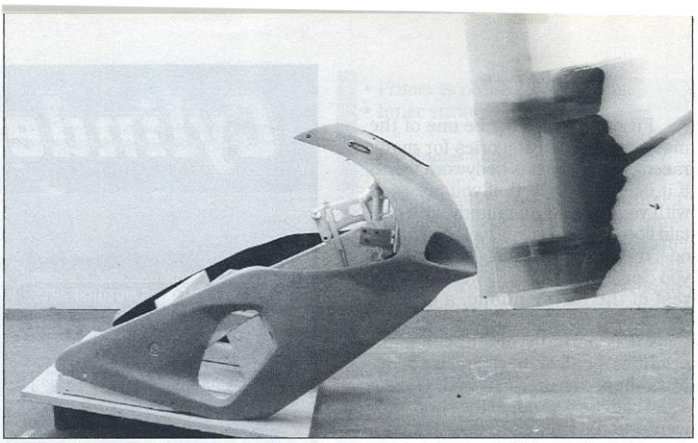
Fit
Listed Best To Worst
(Listed In Alphabetical Order In Case Of Tie)

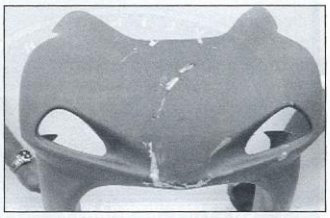
AK Composites	Perfect
Armour Bodies	Exceptional
AirTECH Premium	Exceptional
Hot Bodies Racing	Exceptional
Sharkskinz	Exceptional
Cheetah	Exceptional
AirTECH Standard	Good
GP Composites	Good
AirTECH Gray Line	Poor

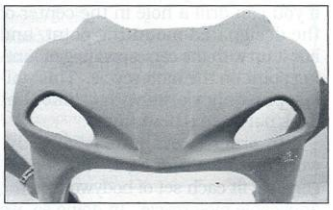
Rating – Poor Fit

AirTECH Gray Line

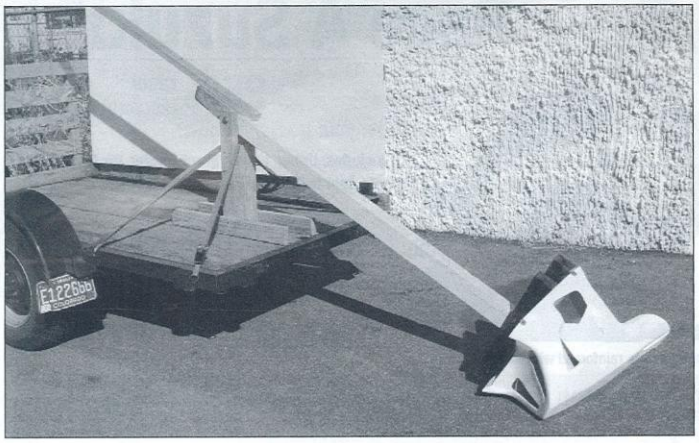
AirTECH Gray Line fit the bike, but only if you don't pay attention to the set mounting points. We were able to fit the upper with small issues (we had to drag mounting holes), but when we got to the lower, some of the mounting holes did not line up well. When we tried to stretch the bodywork to reach the lower mounting holes, we started hearing quite a bit of cracking, and we stopped. This does not mean that the bodywork can't be made to fit, because it can, you will just have to be creative where some of the holes are drilled. Do not drill your holes ahead of time. Mount the bodywork, and mark and drill the holes as you go.

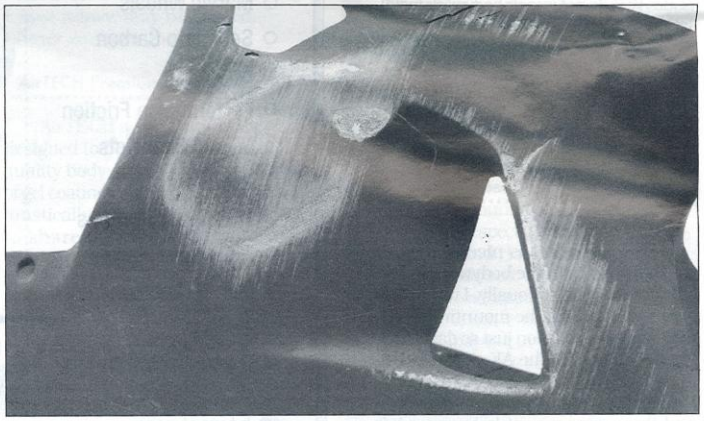






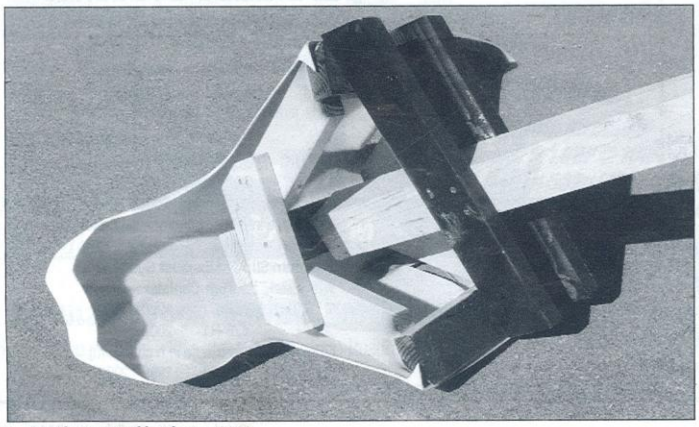
(Above) The impact test rig about to hit a set of bodywork. (Below, left) Hot Bodies bodywork, which sustained the most damage in the impact test. (Below, right) GP Composites bodywork, which sustained the least damage in the impact test. Photos by Brian J. Nelson.

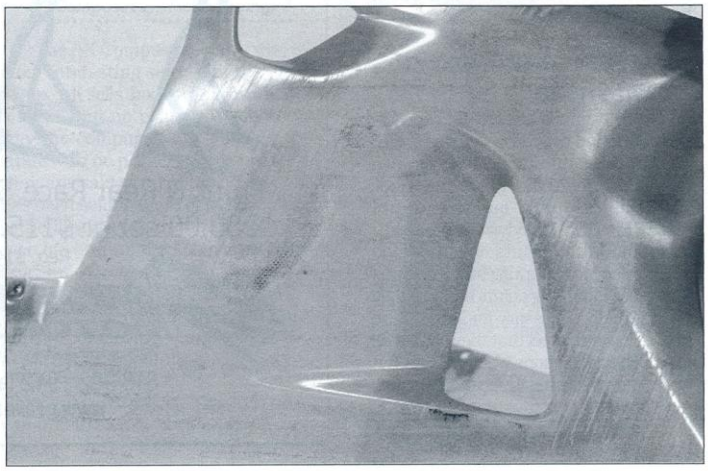




(Above) The abrasion test rig, with a weighted, bodywork lower attached to a cantilever arm on a trailer. The rig allowed each bodywork lower to be dragged along the same section of pavement, at the same speed. (Below) Close-up of the body-mount end of the test rig. Photos by Brian J. Nelson.

(Above) The Hot Bodies Racing lower, after the abrasion testing. (Below) The AK Composites lower, after the abrasion testing. Photos by Brian J. Nelson.





PRICE

There are two ways that a set of bodywork can be priced: By the piece or with a discounted set price. Several of the manufacturers' full set-prices are simply a sum of all the parts within the set (i.e. AirTECH, SharkSkinz). Others will offer a discount for purchasing a full set (i.e. Armour Bodies, Cheetah, AK Composites, GP Composites and Hot Bodies). This portion of the buyer's guide is a simple statement of fact. The following is a listing (from least expensive to most expensive) of the participating manufacturers' full-set prices.

A full set includes:
1 Piece Upper fairing
1 Piece Lower fairing
Race solo tail that uses the stock seat
Front fender

Price
Listed Least Expensive To Most Expensive
(Listed In Alphabetical Order In Case Of Tie)

AirTECH Gray Line	$495.00
AK Composites	$550.00
Hot Bodies Racing	$600.00
GP Composites	$655.00
Armour Bodies	$715.00
Cheetah	$759.00
AirTECH Standard	$855.52
Sharkskinz	$879.00
AirTECH Premium	$1283.28

IMPACT TESTING

The next couple of tests were conducted in a controlled environment. The impact tests were conducted in the Morse Custom Fiberglass shop. The test was designed to simulate one particular impact crash similar to driving straight into a wall (hopefully the rider jumped off). This is only one possible scenario; all bodywork tested may behave differently if given a different crash simulation.

On a side note, this was the most fun that we have had in a very long time. How often do you get to beat the heck out of several thousand dollars worth of fiberglass bodywork? Our usual days are spent putting race bodywork back together, not smashing it!

The testing apparatus consisted of two parts, a weighted swinging arm, and a testing jig. The arm was a beam fastened to the 12-foot shop ceiling with a simple pivot bolt to allow it to swing freely without varying its trajectory from left to right. A 25-pound weight was added to the end of the arm for added punch. The test jig was modeled after the frame of a GSX-R and was weighted down with 50 pounds in order to provide some resistance to the impact, while still allowing a certain amount of give. This would simulate the rebound that a motorcycle would experience after an impact crash.

The jig positioned the upper at the angle that it would take if it were mounted on an actual motorcycle. Accommodations were made to duplicate the front fairing stay, and the fiberglass intake tubes which are normally connected to the upper. Each upper fairing was hit only once, directly in the center of the front panel (where the number plate would be) one inch above the nose.

The results were rated from least damage to most damage. The damage we were evaluating was cracking and breaking of the fiberglass structure as well as the top coating of the bodywork. The more cracks, breaks, splits, and

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layer separation we found, the higher the damage rating.

Impact Testing
1=Best Possible, 10=Worst Possible
Listed Best To Worst
(Listed In Alphabetical Order In Case Of Tie)

GP Composites	1
Cheetah	2
Armour Bodies	3
Sharkskinz	4
AirTECH Standard	5
AirTECH Gray Line	6
AK Composites	7
Hot Bodies Racing	8
AirTECH Premium	9

ABRASION TESTING

The abrasion test was designed to simulate a lowside slide at 60 mph for a distance of 60 feet. This test was pretty simple, and so are the results. It either burned a hole in the bodywork, or it didn't. We found that increased flexibility built into the bodywork spread out the energy to a larger area on the fiberglass, which actually kept it from burning through as fast.

In order to simulate a low-side crash on an asphalt road race track, we constructed a cantilever arm with a cradle attached at the far end. The cradle was made to support the one-piece race lower in the same manner that it would be supported on the motorcycle, and applied about 40 pounds of weight to the bodywork. The cantilever arm was fixed to a trailer, which was then attached to a tow vehicle. Each set of bodywork was put through the exact same testing by bringing the test vehicle up to speed and then lowering the cantilever arm so that the bodywork would contact the pavement, and then drag for a set period of time. The same length of track was used for each test to retain consistency.

Abrasion Testing
No Burn Through Vs. Burn Through
(Listed In Alphabetical Order In Case Of Tie)

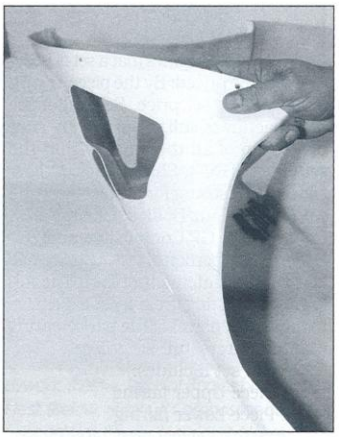
No Burn Through
AK Composites
Armour
AirTECH Gray Line
Cheetah
GP Composites
Sharkskinz
Burn Through
AirTech Premium
AirTECH Standard
Hot Bodies Racing

Note: An actual low-side slide may force a hole in any bodywork due to pressure from a crankcase cover, or another hard part.

FLEXIBILITY

The flexibility of a fiberglass race body is usually determined by the formulation of the composite used by each manufacturer. The flexibility of a race body is important because it affects how the bodywork will handle impact and abrasion. In other words, how bodywork crashes and takes a hit is usually due to its flexibility or lack thereof.

One of the things that we noticed about the flexibility of a race body, was that the flexibility is only as good as the topcoat. We found some bodywork that was very flexible, but the topcoat cracked severely when flexed. So we focused on the combination of topcoat flexibility as well as composite flexibility.



Flexibility testing of fairing lowers. (Above) AirTECH Gray Line. (Below) Armour Bodies. Photos by Brian J. Nelson.

We analyzed each race body to see which was the most flexible. The test was conducted by flexing the side of the one-piece lower in on itself until it touched the inside of the pan—or, if it wouldn't flex that much, as far as it would bend. An overall evaluation of every piece of bodywork was also taken into account. The rating is from 1 – 9, with one being the most flexible, and 9 being the least flexible.

Armour Bodies:	Zero Damage
GP Composites:	Minor spider-cracking
Cheetah:	4 cracks along edges
SharkSkinz:	6 cracks along edges
Hot Bodies Racing	Major spider-cracking
AirTECH Premium	Heavy cracking of the top coat along edges
AK Composites	Creased
AirTECH Standard	Creased
AirTECH Gray Line	Could not flex that much

Flexibility
1=Best Possible, 10=Worst Possible
Listed Best To Worst
(Listed In Alphabetical Order In Case Of Tie)

Armour Bodies	1
GP Composites	2
Cheetah	3
Sharkskinz	4
Hot Bodies Racing	5
AirTECH Premium	6
AK Composites	7
AirTECH Standard	8
AirTECH Gray Line	9

Special thanks to John Fabac, Will Mitchell, Mike Saxbury, and Courtney Mitchell for their help in making this article possible. **RW**

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attached to the ends of those fork legs that has everyone talking.

Kawasaki is the first manufacturer to introduce a streetbike with radial-mounted brake calipers, although the not-yet-introduced 2003 Suzuki GSX-R1000 will also feature radial calipers, which are more rigid than conventional calipers on conventional mounts. More rigid brake calipers flex less, theoretically reducing misalignment with the rotor, which can put more pressure on the leading edge than on the trailing edge of a brake pad, which can cause increased pad heat, wear, fade and inconsistent performance on the racetrack.

The Tokico calipers on the new Kawasaki each feature four, large (34mm) pistons and four individual brake pads. The individual pad setup provides consistent contact with the 280mm (11.0-inch), semi-floating rotors, which in turn provide indescribable stopping power and stability with increased pad life as an added bonus. The new bike's smaller (down from 300mm), non-offset rotors reduce rotating mass, and each new Tokico caliper weighs 0.5-pound less then a caliper on a 2002 model.

The 220mm (8.7-inch) rear rotor works with a conventionally mounted twin-piston caliper, but Kawasaki engineers say it has improved feel and better control thanks to a revised pedal ratio. Standard-sized cast aluminum alloy wheels (3.50 x 17.0-inch front, 5.50 x 17.0-inch rear) carried Bridgestone radials at the U.S. press intro even though some of the literature Kawasaki distributed states the ZX-6 line will come with Michelin Pilot Sports.

New, more aggressive styling starts with the more aerodynamic front fairing, which features a large, central ram-air intake duct which feeds straight through passages cast into the steering head of the frame and into the airbox. The Kawasaki men say that the location of the ram-air intake makes it more effective and also provides a new "aggressive identity" linked to the Kawasaki Ninja ZX-RR MotoGP bike. And, they said, the improvement in ram-air efficiency is much more noticeable when the bike is banked over in a sweeping corner or going straight through a crosswind. The single, central ram-air duct continues behind the fairing where it doubles as the mounting point for the upper fairing and the all-new digital instrument panel, reducing the number of parts and weight.

Kawasaki spokesmen say the new ZX-6R/ZX-6RR is the lightest middleweight supersport bike on the market at 355 pounds dry, or 22 pounds lighter than the claimed dry weight of the previous model.

A digital dashboard includes a radial, LCD bar tachometer; a digital LCD speedometer; temperature gauge; tripmeter; clock; shift light (programmable in 250 rpm increments starting at 12,000 rpm); adjustable brightness control; and a handlebar-operated lap timer with 99-lap memory. The forged aluminum clip-on handlebars are set nearly two inches lower than on the previous Kawasaki ZX-6R, combining with higher footpegs to produce a more sporty seating position. The LED taillight is lighter, brighter and lasts longer than taillights using standard light bulbs, a lightweight, aluminum subframe bolts on the main frame, and the ZX-6R/ZX-6RR comes with a color-matched passenger seat cowl.

The 636cc ZX-6R will be available in four colors, a new record number of choices for a Kawasaki model, including Black Pearl, Candy Lightning Blue, Passion Red and Galaxy Silver. The suggested retail price is $7999 and the bike should be at dealerships early in 2003. For those keeping track, that's $100 less than the previous ZX-6R.

The limited-production ZX-6RR homologation special for 600cc-class racing is $400 more ($8399) and comes in one color, Lime Green.

The 599cc ZX-6RR differs from the 636cc ZX-6R in several ways. The RR has a different bore and stroke, 67.0 x 42.5mm, uses forged pistons that are five grams lighter than the R's cast pistons, and has higher compression (13.0:1) than the R.

The RR's swingarm pivot position can be adjusted through a 4mm range using optional inserts available from Kawasaki. The RR has an adjustable, back-torque-limiting cam-type slipper clutch to help prevent rear-wheel hop under hard braking. According to Kawasaki Road Racing Team's Scott Stauffer, the slipper clutch is mechanically identical to the unit in Eric Bostrom's ZX-7RR factory Superbike. The center hub of the clutch rotates against ramps, and, under heavy deceleration, the hub will run up onto the ramps, push against the pressure plate to release itself and allow the clutch plates to slip. The gap between the hub and the pressure plate is adjustable with steel spacers, or tuners can control the gap by varying the thickness, but not the number, of the clutch friction plates. Return springs control the rate of release and return of the clutch pack back into its normal position. The number of return springs, spring rates and spring preload are all adjustable with optional parts.

The RR also comes with a threaded mounting boss for a steering damper welded onto the left frame spar.

Kawasaki also plans to sell race kit parts to anybody who wants them, and the company is working on a new contingency program for privateers. According to Kawasaki Accessory Product Specialist (and former racer) Jeff Hoeppner, racing kit parts will be available through the accessory department of any Kawasaki dealer in America by the end of January and will be competitively priced.

Racing kit parts that may become available include slipper-clutch tuning parts, swingarm pivot inserts, ride height adjuster shims, camshafts, valve springs, velocity stacks, quick-turn throttles, complete close-ratio transmissions or individual gears, brake pads and an ECU that can be programmed to change fuel injection and ignition maps, the rev-limit and the opening of the fuel-injection's secondary butterflies. To give an example of pricing, Hoeppner said a camshaft will be in the neighborhood of $200 retail. Kit parts will be available individually (not as part of a package-only deal), and the same parts should work with both the 6R and the 6RR. However, the kits parts aren't necessarily designed to be AMA Supersport-legal. **RW**