

Suzuki Katana Superbike
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Table of Contents

Introduction:	2
Build Notes:.....	2
Frame/Bodywork:	2
Wheels and Tires:	3
Front forks:.....	3
Rear suspension:	4
Engine and Drive Train:	6
Handlebars and Controls:	9
Drive chain:	10
Other:	11
Paint:.....	13

Introduction:

This bike is the second in a series of Canadian based racing motorcycles that I am building. This bike is owned by Bar Hodgson, who runs the Motorcycle Supershow in Toronto, and the bike is currently a part of the Canadian Motorcycle Hall of Fame Museum. The bike was ridden by Wes Cooley in the United States and then by Art Robbins in Canada

Most of the details came from photographs and measurements I took of the actual bike. Many thanks to Bar Hodgson for giving me access to the bike.

Build Notes:

These notes are organized into various components of the bike. The starting kit was the Tamiya 1/12 scale 14065 Suzuki GSX1100S Katana Custom Tuned.

Frame/Bodywork:

There were only a few modifications done on the frame. The bike had a custom built swingarm and the rear shocks were mounted at a position differently than the stock bike. The rear peg tubes were removed and a new section of frame tube, from 2.5 mm (0.100") diameter rod was attached. Some 0.5 mm (0.020") styrene strip was also used.

All the bolt heads were removed from the frame, to be replaced later on with hex head styrene bolt heads. Some extra mounting brackets for the footpegs and the chain idler wheel were also added.

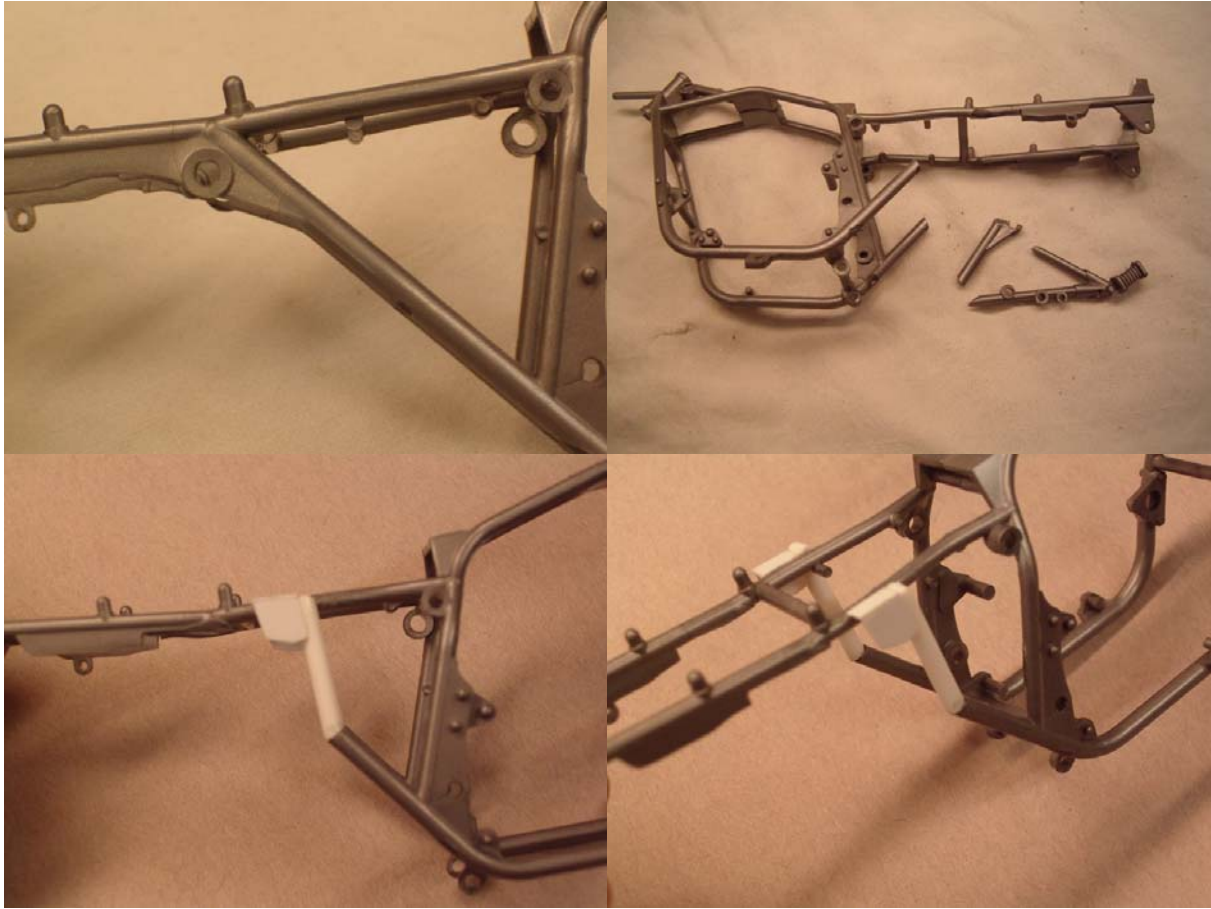


Figure 1 – Frame modifications

Wheels and Tires:

The racing wheels were a three spoke design used by many racing bikes. Both wheels, and racing slicks, from a Tamiya Kawasaki 500 Endurance racing bike were used.

Front forks:

The front fork tubes were replaced with polished 3.2 mm (1/8") diameter aluminum as described on the tips section of my website (www.eajonesque.com/tips.html). The front brake calipers were removed from the original kit. All the chrome was stripped from the forks and the back was filled in with styrene strip. The replacement calipers were scratchbuilt using styrene sheet, rod and tubes. The front fender was modified to make it smaller and to incorporate a fork brace.

A new wheel axle bolt was made by threading a brass rod with a 0-80 screw thread on both ends and attaching a brass nut to one end. The nut was painted chrome silver after attaching the wheel. A similar process was used to create a new front steering pivot bolt.

Brake disks from an unknown GP bike were used. The Katana had a unique system to reduce front end diving under hard braking. Banjo joints from RBMotion, and braided line from the Detail Master were used to depict this system.

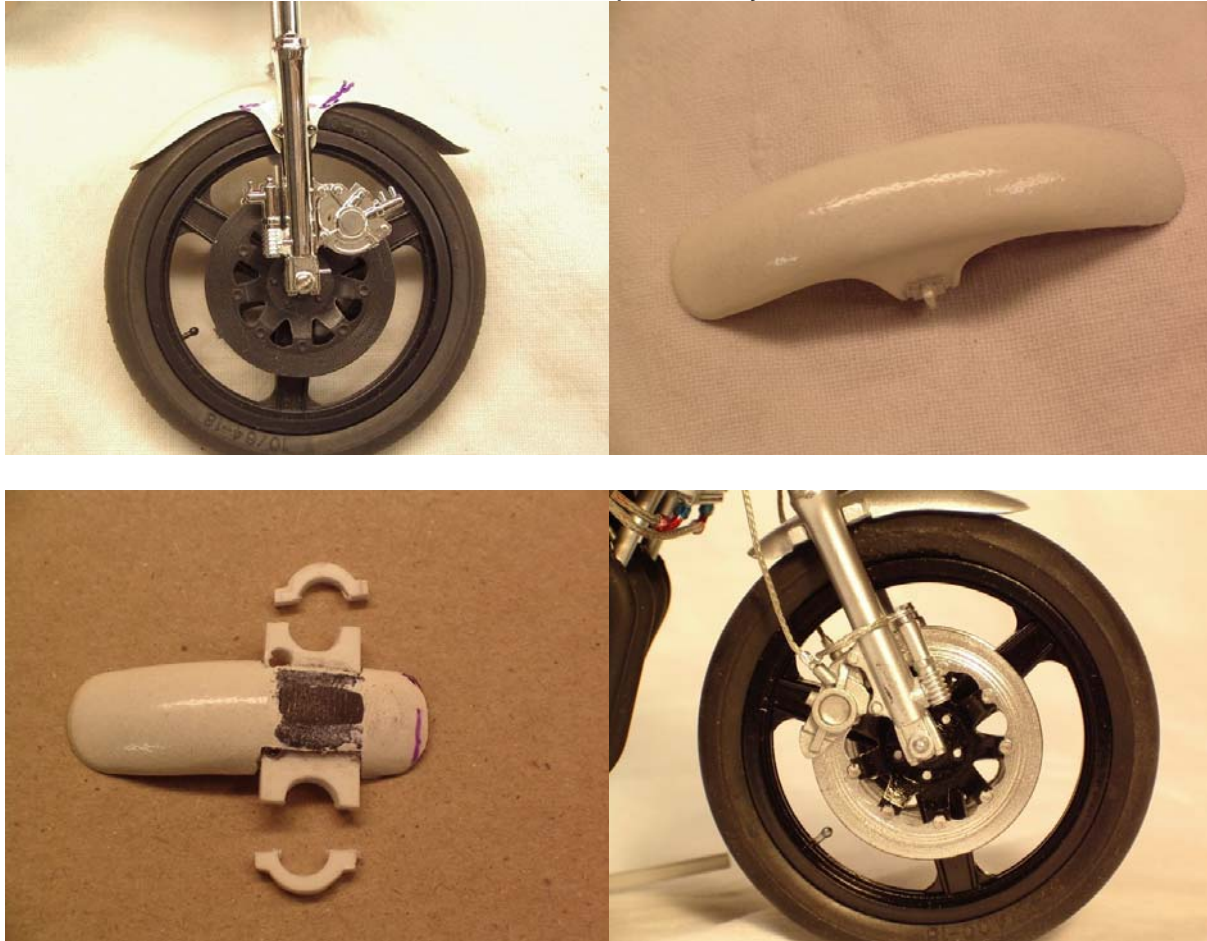


Figure 2 - Front fork, wheel and fender

Rear suspension:

The swingarm was scratchbuilt using various types of styrene stock. Welding seams were simulated using white glue. The mounting screw would eventually be replaced with 00-80 bolts and nuts. Chain adjusters and other parts were added later.



Figure 3 - Rear swingarm in comparison with stock version

The rear brake caliper was modified to add a mounting flange and the location for the brake line. A mounting arm was made of styrene sheet and an RB rod end added at the attachment point.

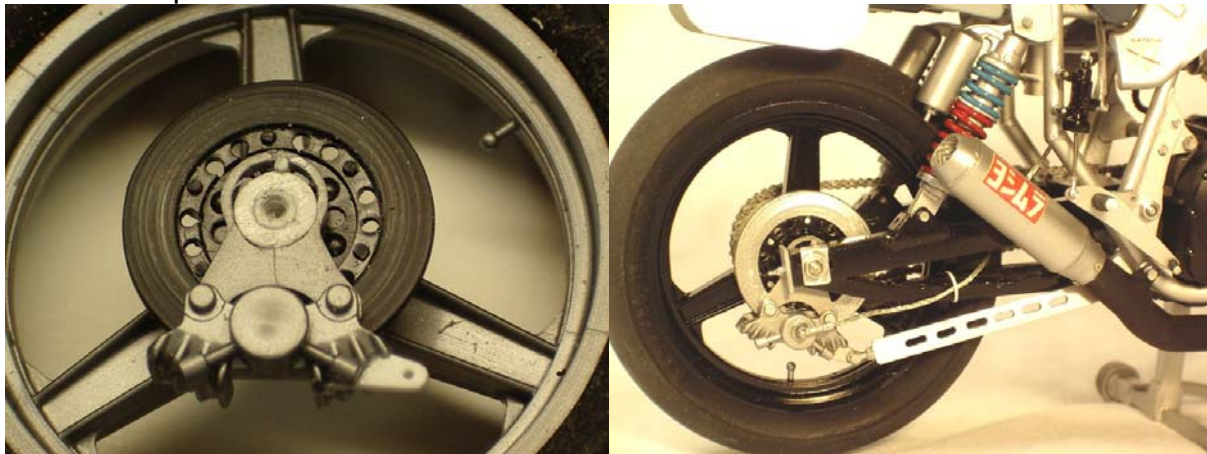


Figure 4 - Rear wheel, brake and mounting arm

The lower parts of the swingarm on the real bike had thin pieces of foam wrapped around to protect from the chain. Facial tissue was used for this, white glued in place and then wrapped with white electrical tape cut into thin strips for the tie wraps.

The springs from the kit were cleaned up of molding marks. The inner shaft was covered with chrome foil. The springs were made by wrapping aluminum and brass wire around the appropriate diameter rod, cutting them to length, then flattening and filing the ends. The springs were turned so that the end of the wire was turned inwards and hidden from view. A spacer was made from aluminum sheet.

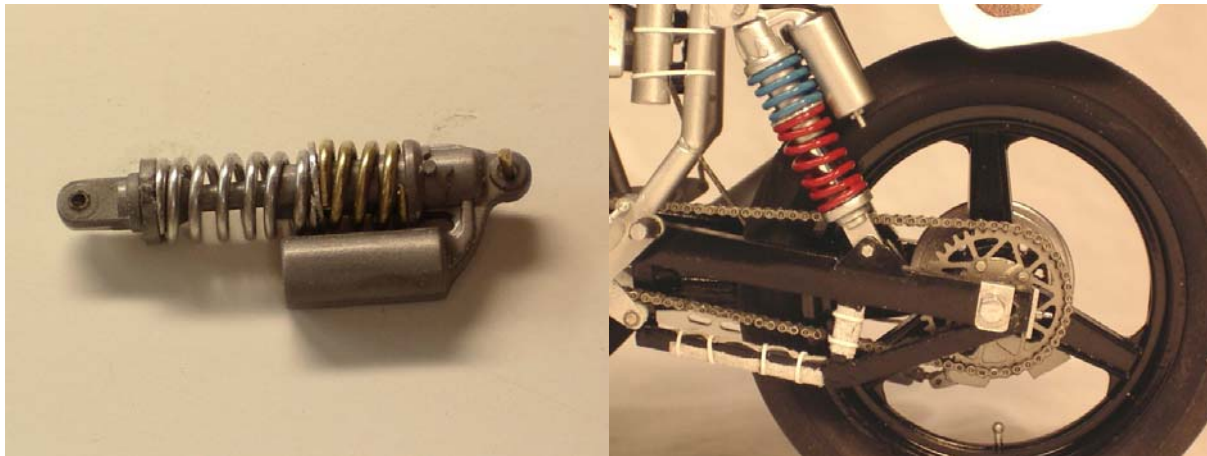


Figure 5 – Rear shock absorber with scratchbuilt springs, swingarm with protection

Engine and Drive Train:

The engine was built basically stock. There were three major changes made:

The left side engine cover was scratchbuilt using sheet styrene using the kit cover as a template to get the location of the holes correct. Some slotted photoetch screw head from Renaissance were sunk into the location holes. Some Scotch Brand magic tape was cut into a thin strip and wrapped around a wire for the electrical wire coming out of the alternator behind the cover. A small Yoshimura logo, from a custom made decal, was added to the top on the one piece.

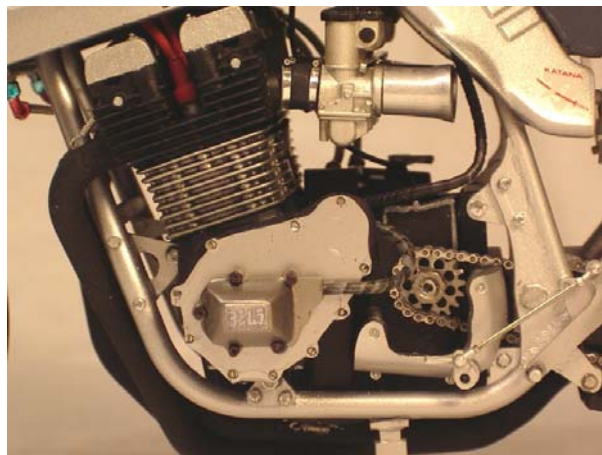


Figure 6 – Left side engine cover

The engine does not have a starter, so the existing starter was removed, turned upside down and glued back into the engine half. Putty was spread into the seams and then sanded down.

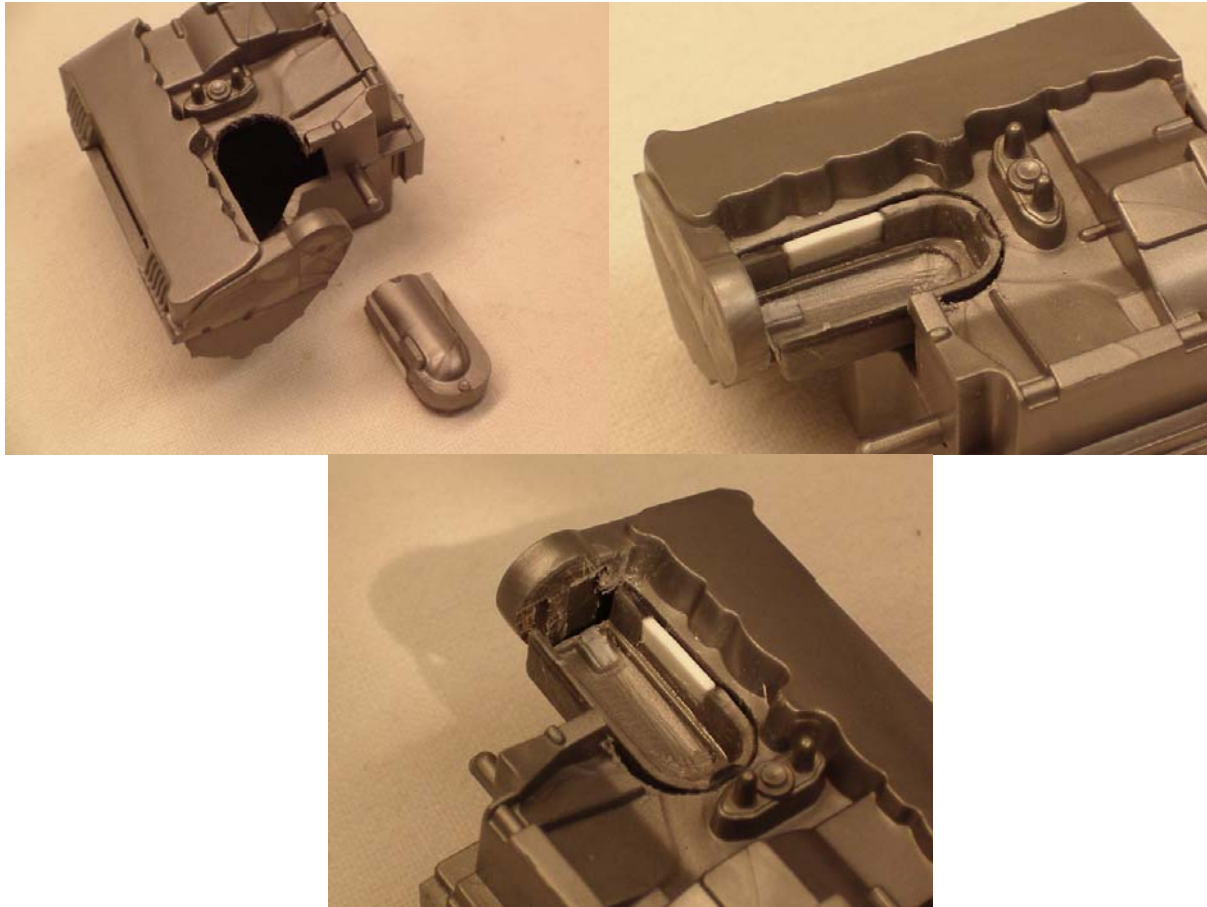


Figure 7 – Removal of starter motor

The carbs on the real bike are not stock and exact replacements from my parts box couldn't be found. A set of carbs was used as a starting point, however. These were modified by cutting the top off and using styrene rod and sheet to fashioning new pieces. The kit carb connectors were detailed with chrome foil and thin solder to simulate hose clamps.

Velocity stacks were made by lightly hammering a scribing tool into a 4.8 mm OD (3/16") diameter aluminum tube. These weren't perfectly symmetrical, but by selecting the best ones for the outside carbs and turning them to give the best profile, they turned out okay.



Figure 8 – Before and after pictures of the carbs, hose clamps on intake tubes

The exhaust pipes from the kit, which is a 4 into 1 system, were used. Exhaust joint springs were made using 34 gauge wire and a hanger bracket added. The last part of the pipe was heated over a flame and bent to get the right routing. A muffler was scratchbuilt from 7.1 mm OD (9/32") diameter aluminum rod. The real muffler has a mesh inside it. This was simulated using aluminum mesh, bent around a rod, slid into place and CA glued. It was left aluminum to be more visible, on the real bike it is a bit rusty. Aluminum was used for the muffler joint and taper at the end and photoetched rivets added for detail.

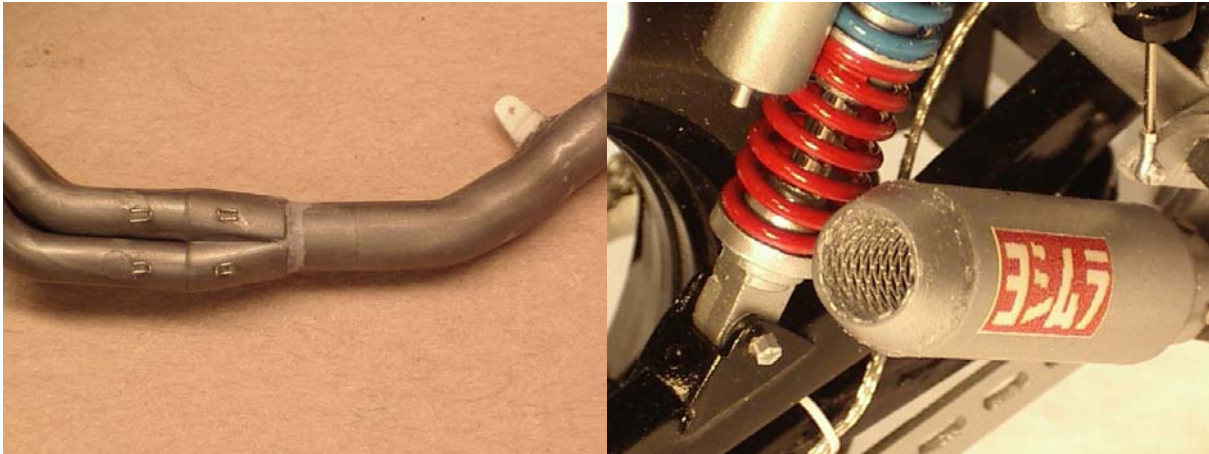


Figure 9 – Exhaust pipe with spring clips and added hanger, muffler with interior mesh

Another engine modification was to cut some material away from the cover over the drive sprocket and chain. Some styrene rod and strip was added to give some of the interior detail.



Figure 10 – Chain cover modifications

The top engine cover was slightly different from the stock engine. Small tabs were removed and two holes drilled in each side. Styrene sheet and half round pieces were used to replace the stock pieces.

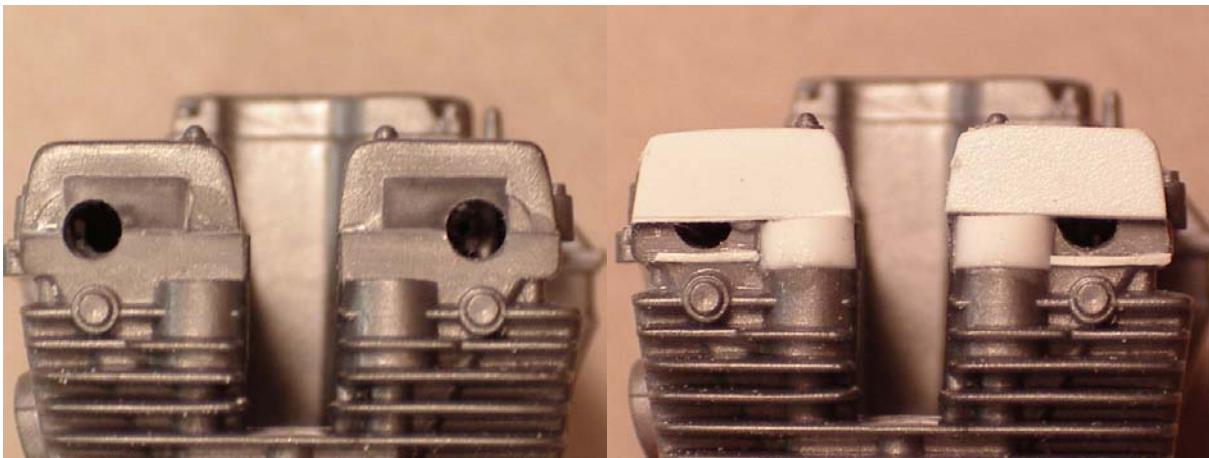


Figure 11 – Changes to top of engine block

Handlebars and Controls:

The smaller details on the handlebar were modified and/or replaced to be more accurate compared with the real bike.

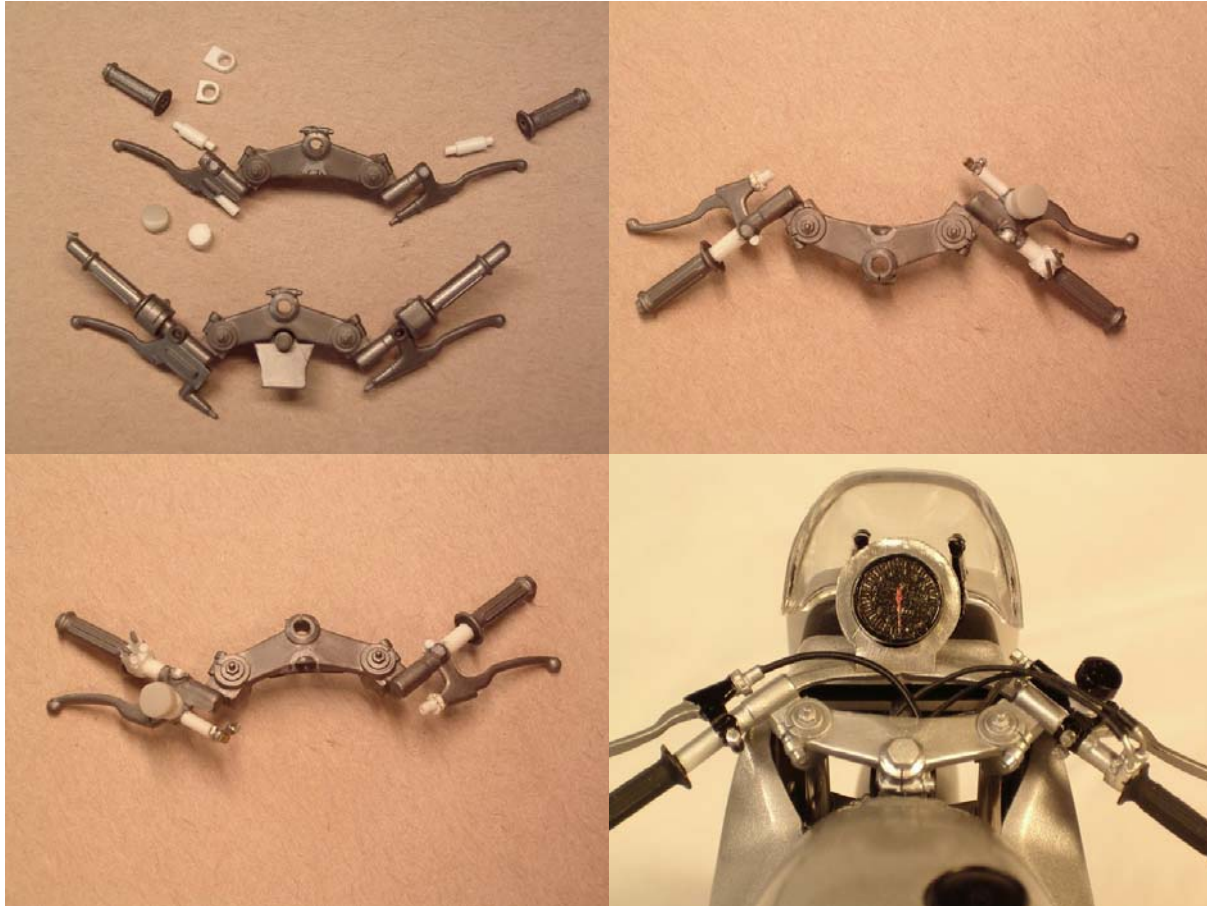


Figure 12 – Changes to handlebars and controls

Drive chain:

One of the drawbacks of motorcycle scale models is the chain. Most are just molded in one piece and to be presentable, usually only detail painting is done. Lion Roar makes a photoetch set for the Yamaha YZR-M1 GP motorcycle kit. The chain comes in four pieces. Two are joined together to get one side of the chain, with the other two pieces making up the other half. One link had to be cut out of the chain to make it fit properly in the Katana. Styrene rod of 0.5 mm (0.020") diameter was cut into many pieces of the correct lengths for use as rivets. These were glued into place on one half of the chain with CA glue. Then the other half was glued on. The Lion Roar photoetch sprockets were used, although they do not have the scale thickness. A 2-56 nut was filed down to make it thinner and attached to the drive sprocket.

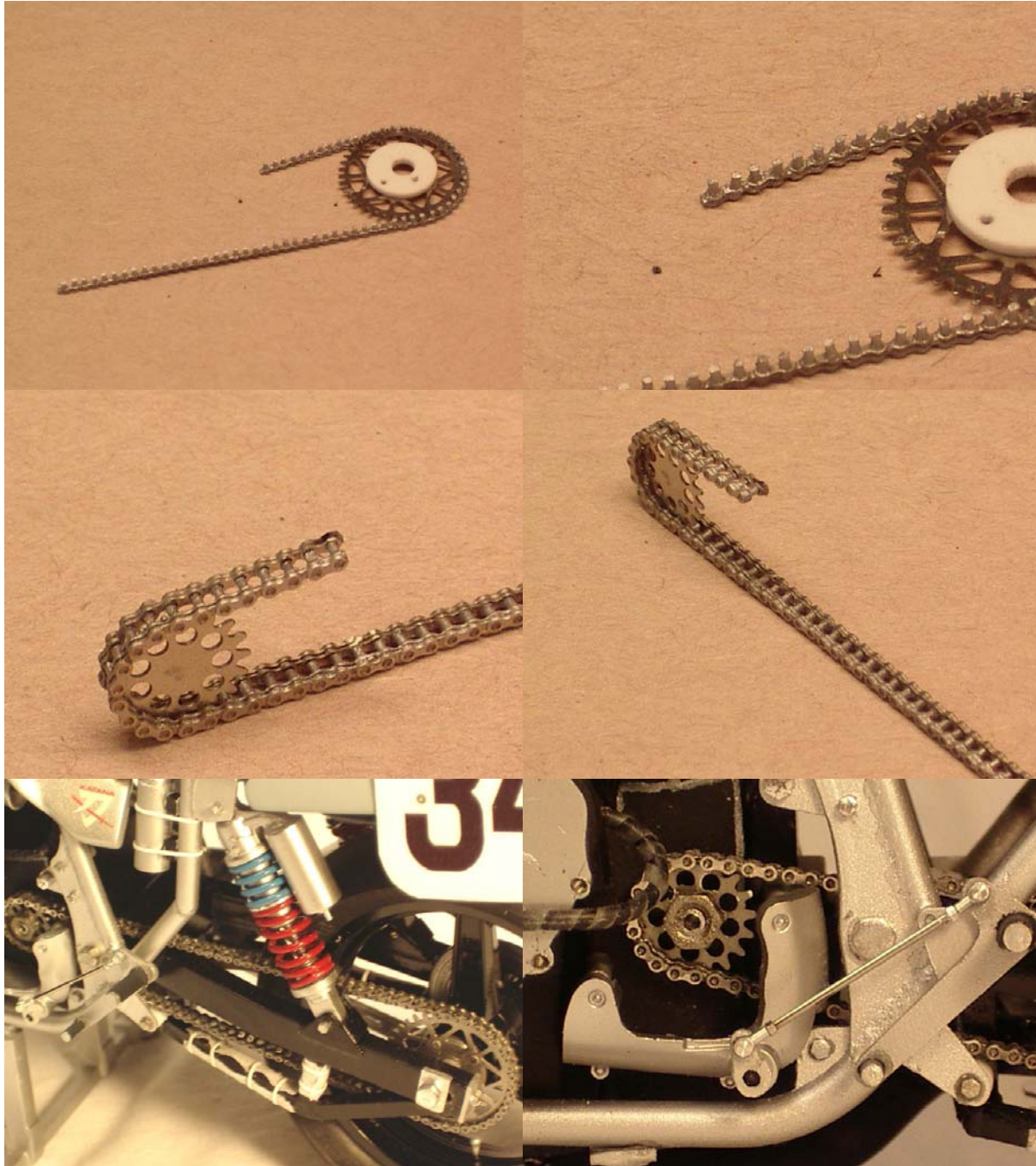


Figure 13 - Chain

Other:

The oil cooler from the kit was used, with Detail Master type 4 AN nuts and braided wire added. The rubber loops were made by cutting electrical shrink wrap to length, slipping over the braided wire and then heating to shrink.

A tachometer housing from an old Ducati was modified, inserted into an pop can aluminum bracket and added inside the small fairing.

A steering damper was made from thin diameter solder and styrene rod, attached to the lower triple clamp and tucked through a hole cut in the fairing.

Number plates were printed on photo paper and sealed with Krylon Crystal Clear. Photoetch rivets were added for the attachment points.

The kit rear brake master cylinder was removed and new mounting points added to the frame. Scratchbuilt banjo joints were added for the braided line and the clear tube that went to the reservoir (hidden under the seat). The brake lever and footpeg were scratchbuilt from styrene and RBMotion supplied the rod end.

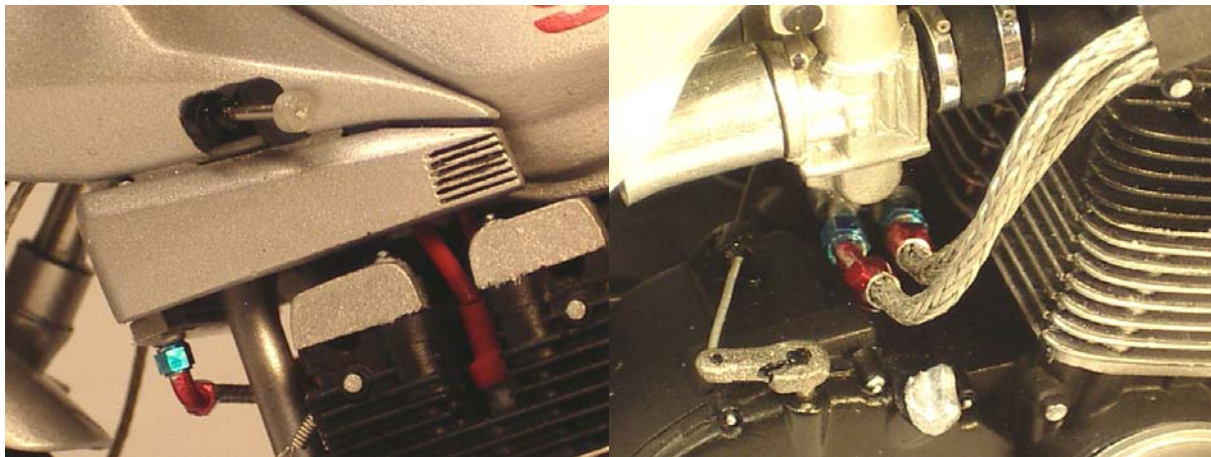


Figure 14 – Steering damper, clutch arm, oil dipstick

A mounting bracket for the clutch cable was added to the engine case and a clutch arm of styrene was made. The top of the oil dipstick was made from a styrene rod, with the tab filed into it.

The gear shift lever, footpeg and final arm were made of sheet styrene, with RBMotion rod ends again used for the mechanism. The footpeg rubber was made using a ribbed tape used for bandages.

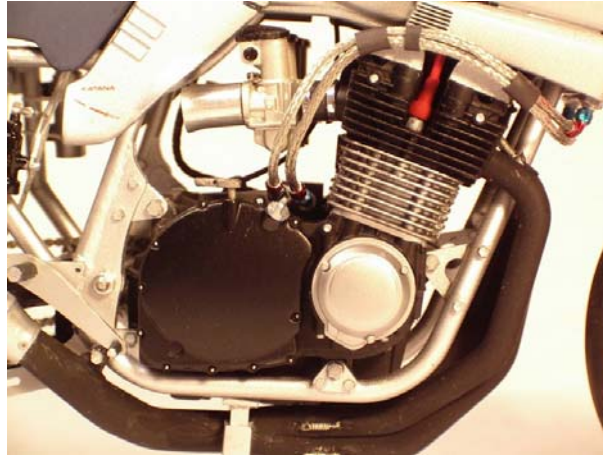


Figure 14 – Right side of engine

An engine vent reservoir was made from styrene rod and mounted near the rear shock using electrical tape tie wraps.

Paint:

The body was primed with Tamiya sandable primer. This was followed by 2 coats of Gloss Aluminum and then 2 coats of clear straight from the cans. No polishing was done on the body parts at all. The frame had the same gloss aluminum, but shot through an airbrush. Wheels were Tamiya gloss black right from the can.

The engine was painted with Tamiya black semi-gloss acrylic paint through an airbrush. This gives a very satin sheen to the main engine parts. The silver parts were painted with Alcad paints – chrome (brake disks), white aluminum (engine covers, muffler), aluminum (triple clamps), duraluminum (brake calipers) and steel (chain and sprockets). Smaller areas were brush painted with Tamiya flat aluminum or metallic grey and Testors acrylic silver. An enamel wash was done on the silver engine cylinders. The exhaust pipes were Tamiya acrylic black done by airbrush. Two custom acrylic mixtures were made up for the two tone seat.

The Suzuki decal on the tank came from the kit. The tachometer, Nippondenso and the Yoshimura name on the tank and the logo on the muffler were custom printed decals using an ink jet printer.

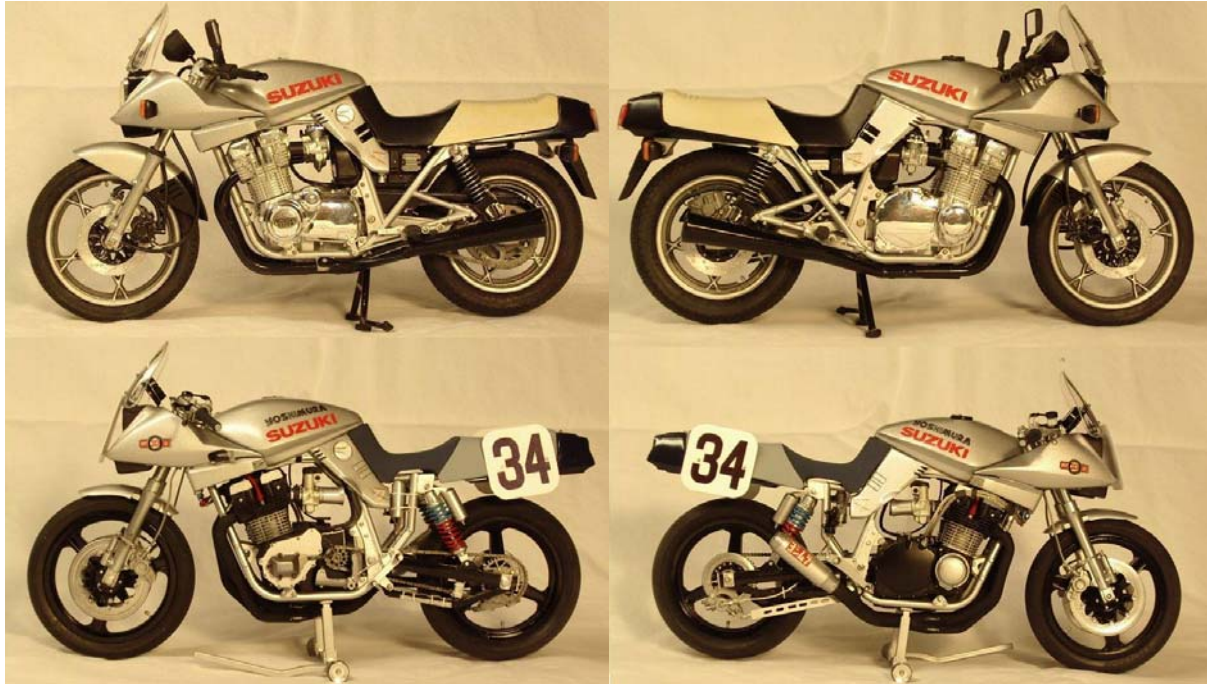


Figure 15 – Comparison of stock bike with superbike version