

Restoration Details

This restoration project was started in October 2003. As of June 26th, 2007, the initial restoration was complete. On the initial restoration, I spent 847 hours of my own time. Including other family members' time for doing things that I wasn't able to (chroming, some sandblasting, 4 sets of hands) there is a total of 887 hours that has gone into the initial restoration.

Subsequent restoration work;

2008 – Complete teardown and re-build of carbs. 10 hours for a personal total of 857 hours. A complete total of 897 hours.

2009 – Re-textured rear signal bodies. Replace gaskets and seals on clutch cover. Rebuilt turbocharger. Re-sanded and re-polished windshield (with an improved system), for a sub-total of 31.75 hours for a personal total of 888.75 hours. A complete total of 928.75 hours.

All restoration work, including artwork for decals and stripes was done by me, with the following exceptions;

- Sandblasting of frame, seat pan and drive shaft housing done by Striptech in Cambridge, Ontario.
- Powdercoating done by Aegis Custom Powder Coaters in Guelph, Ontario.
- Fairing painting done by Automotive Refinishing in Waterloo, Ontario.
- Decal artwork done by BDesigns in Kitchener, Ontario.
- Decal printing by McDougall Signs and Graphics in Waterloo and Andesign in Kitchener, Ontario.
- Ceramic coating of exhaust headers done by Fireball Performance Coating in Erin, Ontario.
- Zinc plating of toolkit parts by Waterloo Electroplating in Waterloo, Ontario.
- Turbocharger rebuild by G-Pop Shop of Springdale, Arizona, USA.
- Special thanks to Bill Dallner for sandblasting most small components and milling brake caliper surface as well as a number of other special “favours” (what are brothers for?).
- Special thanks to my Brother-In-Law, Tim Hamilton for chrome favours.
- Special thanks to Jerry Shippet for his contraptions/jigs/etc.
- Thanks to my son’s Tyler and Matthew for their help.

A special thanks to Brian Shorney at Tri-City Cycle in Waterloo, Ontario for his enthusiastic help at sourcing parts and for watching over my “babies” (parts), while in for various mechanical work.

Brake, Clutch & Wheel Parts

Axles and Nuts/Washers	Polished rough ground ends and scratches, re-chromed
Brake Calipers	Disassembled, sandblasted, powdercoated, rebuild piston kits, new pads. Polished bolts and shims, rubber restorer applied to large boots. Small boots replaced with NOS. Polished Banjo bolts. Replaced bleeders.
Brake Line Rubber Grommets	Cleaned and applied rubber restorer.
Front Brake Lever	Sandblasted, powdercoated, polished bare aluminum
Front Brake Line Brackets	Cleaned and polished.
Front Brake Line	NOS not available. Replaced with vinyl coated stainless steel lines.
Front Brake “T”	Cleaned and repainted with Polyurethane.
Brake Disks	Polished mounting bolts. Sandblasted bolt retainers and re-nickel plated. Cleaned brake discs and milled surfaces approximately .002” each side. Masked and sandblast inner “circle” to re-create “coarse machined” appearance. Fully masked, mask on hole/slot openings trimmed open and re-painted all edges of brake discs.
Master Cylinder	Fully dismantled, sandblasted, polyurethane painted. Replaced diaphragm, NOS

Assembly	cover screws and hole plug, rebuild kit. Vinyl restorer applied to wires. Polished Banjo bolt. Applied rubber restorer to Banjo bolt cover and lever boot. Repaired brake light switch.
Rear Brake Pedal	Sandblasted and repainted with polyurethane.
Rear Brake Plate Strut	Sandblasted, powdercoated
Rear Brake Pivot Arm	Polished arm and indicator clip, re-chromed
Rear Brake Plate	Sandblasted, powdercoated
Rear Brake Rod Ass'y	Sandblasted & polyurethane painted pivot shaft. Sandblasted & polished brake rod, adjuster nut, spring and barrel with 120, 150, 180, 220, 400, 600 grit and re-chromed.
Rear Brake Switch	Cleaned. Applied vinyl restorer to wires
Clutch Lever Assembly	Disassembled, sandblasted, powdercoated, polished bare aluminum, NOS boot, polished clutch cable adjuster, re-assembled, applied vinyl restorer to switch wire.
Drive Shaft Cover	Sandblasted, painted, polished.
Front and Rear Wheel Rims	Masked all bare aluminum and sandblasted old paint from centre of wheel and hub area. Cleaned and re-masked for painting. Primed then painted and clear-coated centres of rims with custom colour match to original paint. Hand sanded bare aluminum to remove oxidization using grits 120, 150, 180, 240, 320 and 400. Polished bare aluminum areas with 2 applications of Mothers and one topcoat of wax. Replaced tires. Replaced bearings and seals.
Speedo Cable	Cleaned, oiled cable and applied vinyl restorer to cable.
Speedometer Pickup	Disassembled, sandblasted, powdercoated, re-packed grease and re-assembled.
Security Chain Holder	Polished and applied Forever Black.
Security Chain	Polished chrome and ends of chain. Vinyl restorer applied to plastic sheath.

Electrical System Parts

Battery Box	Wet sand 600, 800, 1200, 1500, 2000 and 2500. Polished with 3 grits of rubbing compound and coated with Forever Black. Rubber restorer applied to all rubber. Replaced battery band with NOS.
Boost Sensor	Cleaned, applied Forever Black to cable boot, polished metal valve tip
Left Front Signal	Replaced with NOS signal assembly.
Right Front Signal	Fixed scrapes in plastic, re-textured and applied Forever Black. Replaced signal lens screws. Signal lens wet sanded to 600, 800, 1200, 1500, 2000. Polished with 3 grits of rubbing compound
Handlebar Control – Signal Side	Disassembled, sandblasted, primed and painted casings with polyurethane. Applied lettering decals, then applied 1 clear coat. Filled over decals and applied 2 final topcoats. All plastic parts cleaned and embossed lettering re-painted. Applied Forever Black to plastic parts. Applied forever black to handlebar grip.
Handlebar Control – Throttle Side	Disassembled, sandblasted, primed and painted casings with polyurethane. Applied lettering decals, then applied 1 clear coat. Filled over decals and applied 2 final topcoats. All plastic parts cleaned. Applied Forever Black to plastic parts. Cleaned, oiled cable and applied vinyl restorer to throttle cable casing. Replaced throttle grip with NOS.
Headlight	Cleaned, waxed, rubber restorer applied to rubber boot. Reproduced decal on backside of light pod.
Headlight Trim Ring	Sandblasted, polyurethane painted. Reproduced decal on bottom of rim.
Headlight Bucket	Cleaned, waxed and rubber restorer applied to rubber components.
Horn Assemblies	Fully dismantled, metal parts sandblasted, mounting brackets and horn plates powdercoated. Main horn unit polyurethane coated. Forever Black applied to plastics. Decals reproduced.
Ignition Coils/Wires	Cleaned and applied vinyl restorer.

Ignition Control Unit	Cleaned and waxed. Applied vinyl restorer to all rubber parts.
Ignition Switch	Cleaned. Wet sanded center with 600, 800, 1200, 1500, 2000 and polished with buffing compound. Decal reproduced. Applied vinyl restorer to wires.
Instrument Cluster	Fully dismantled and cleaned. Forever Black applied to textured plastic areas and black plastic knobs. Applied vinyl restorer to wires
License Plate Light Ass'y	Metal sandblasted and powdercoated. Rubber restorer applied to rubber. Plastic... light body and lens wet sand 600, 800, 1200, 1500, 2000. Polished with 3 grits of rubbing compound. New bolts and spacers.
Rear Signal Assemblies	Fully dismantled and cleaned. Re-textured plastic bodies and applied Forever Black. Replaced lens screws. Signal lens wet sanded to 600, 800, 1200, 1500, 2000. Polished with 3 grits of rubbing compound.
Rear Signal Light Mounting Brackets	Sandblasted, polyurethane painted
Stop/Tail Light Assembly	Fully dismantled. Forever Black applied to rubber trim gasket. Inside of pod repainted. Lens wet sand 600, 800, 1200, 1500, 2000. Polished with 3 grits of rubbing compound. Created restoration decals for the "Yamaha" chrome lettering.
Relay Rubber Mounts	Cleaned and applied rubber restorer
Side Stand Switch	Cleaned. Applied vinyl restorer to wires. Clean and polished switch. Replaced guide bushing in frame. Built moulds and re-cast switch bellows with Liquid RTV Rubber.
Wiring Harness	Washed and scrubbed with Fantastic. Applied Armour-All to all surfaces and polished. All rubber parts treated with rubber restorer. Polished all relays, etc. Fixed broken fuse holder. Replaced Diode connector.
Battery Sensor	Managed to purchase NOS from Yamaha but the threads were missing - defective part. Used existing battery cap to capture threads from the cap by melting wax and casting around the cap. Carefully backed out cap from wax. Used epoxy and brushed into the threads in the wax. Put film of epoxy on shaft of battery sensor to bond to material in threads in the wax plug. Inserted battery sensor into hole and allowed to set. This re-created the threads on the battery sensor with the epoxy.

Engine Parts

Engine Side Caps	Removed "YICS" plates, Sandblasted, primed, and paint topcoat. Mask off letters and "ring" for gold. Painted gold details, seal gold. Wetsand gold creep and black to 800, 1200, 1500, 2000, 2500 and polished with fine glaze. Repaint red and black areas of "YICS". Created new adhesive rubber backing for YICS plates and re-installed.
Engine/Driver Peg Mounting Bolts	Polished bolts and washers for peg bolts. All other engine mounting bolts and nuts replaced with NOS.
Oil Cooler	Flushed, cleaned, straightened fins and painted. Rubber parts treated with rubber restorer.
Oil Cooler Line Brackets	Sandblasted and powdercoated.
Oil Cooler Lines	Flushed, polished plated portion of lines and ends. Black died outer woven sheathing, Re-painted crimpings and lower lines.
Oil Check Valve	Cleaned complete and polished head.
Oil Cooler Line Mount	Cleaned, sandblasted and re-painted.
Oil Filter Cap	Original had chipped fins. Replaced with NOS, sandblasted and painted to match other parts of engine.
Engine	Capped off openings. Pressure washed. Walnut Shell Abrasive blasted loose paint. Repainted with VHT Barrel Paint. Sanded and polished edges of fins and YICS on top of rocker covers. Applied vinyl renewer to wires. Reproduced starter decal. Rocker cover gasket replaced. Clutch cover seals and gasket replaced.
Shifter Lever and Linkage	Sandblasted lever and pivot arm, painted with black polyurethane. Re-painted adjuster nut and axle. Cleaned and applied rubber restorer to linkage boots.

Polished bolts.

Exhaust Parts

Exhaust Caps	Sandblasted and repainted. "Ribs" sanded 120, 180, 220. Mothers applied to raw aluminum for protection.
Header Collars	Sandblasted and repainted.
Header Collector	Cleaned and polished
Header Collector Hanger	Cleaned, applied rubber restorer to rubber mounts. Replaced bolts.
Headers	Sandblasted, sanded 150, 180, 220. Ceramic coated black and semi-gloss clear.
Muffler/Waste Gate	Sandblasted, sanded 100, 120, 150, 180, 220. Filled dents with braze weld on left side pipe. Filled right side pipe dents with JB Weld. Ceramic coated Muffler side. Painted both sides with VHT High Temp Black Caliper Enamel overcoat, wetsanded 800, 1000, 1200, 1500, 2000 and polished with automotive finishing compound.

Fairing Parts

Decals/Stripes	Re-created all decal and stripe artwork using CorelDraw. Reproduced decals.
Air Scoops	Cleaned and applied Forever Black
Chain Lock Holder	Cleaned, polished and applied Forever Black
Fairing Mounting Bolts	Large head bolts sanded and re-chromed (no longer available). Other bolts replaced with new. Placed clear plastic washers under the main washer or bolts to protect paint from fastener damage.
Gas Tank Cover Pad Assembly	Plastic parts cleaned and applied Forever Black. Catch re-chromed. Springs sandblasted and painted. Bracket cleaned.
Glove Boxes	Cleaned, polished and applied Forever Black. Reproduced decal. Wet sanded lock center with 600, 800, 1200, 1500, 2000 and polished with buffing compound.
Instrument Cluster Cowl	Repaired fractures and cracks with fibreglass. Epoxy primer and polyurethane top coated. Hardware polished.
Instrument Cluster Trim Piece	Cleaned and applied Forever Black
Left Lower Fairing Piece	Repaired 2 major cracks in side. Rebuilt shattered front and rear bottom corners. Epoxy primer and polyurethane top coated. Applied NOS vibration damper. Reproduced decal.
Left Upper Fairing Piece	Repaired 2 minor cracks in side. Epoxy primer and polyurethane top coated. Replaced chrome "YAMAHA" emblem with NOS. Reproduced decal.
Left Gas Tank Fairing	Epoxy primer and polyurethane top coated. Reproduced decals.
Right Lower Fairing Piece	Repaired 2 major cracks in side. Epoxy primer and polyurethane top coated. Applied NOS vibration damper. Reproduced decal.
Right Upper Fairing Piece	Repaired 1 major and 5 minor cracks in side. Epoxy primer and polyurethane top coated. . Replaced chrome "YAMAHA" emblem with NOS. Reproduced decal.
Right Gas Tank Fairing	Repaired 1 minor chip on edge. Epoxy primer and polyurethane top coated. Reproduced decal.
Headlight Nacelle Ring	Epoxy primer and polyurethane top coated. Replaced nose clip with NOS clip.
Rear Fairing Surround	Epoxy primer and polyurethane top coated. Reproduced decal.
Fairing Rubber Trim	Cleaned and applied Forever Black
Rear Inner Fender	Wet sand 600, 800, 1200, 1500, 2000. Polished with 3 grits of rubbing compound. Applied Forever Black on faces.
Rear Outer Plastic Fender	Cleaned and applied Forever Black
Steering Head Cover	Fixed small gouges in plastic. Cleaned and applied Forever Black. Machined a new metal fastener post from steel to replace broken plastic one.
Steering "650" Cap	Replaced with NOS

Steering Head Trim	Fixed small gouges in plastic. Cleaned and applied Forever Black.
Windshield	Sanded with 240, 320 and 400 grit dry to remove all scratches, gouges and inside detailing (decal/paint). Sanded with wet sandpaper, 400, 600, 800, 1000, 1500, 2000, and 2500 grit. Sanded with Micro-Mesh abrasive system 2400, 3200, 3600, 4000, 6000, 8000 and 12000 grit wet. Polished with HUT Ultra-Gloss Plastic Polish, then polished with automotive finishing glaze and followed with Turtle Wax. Sanded and polished windshield trim. Applied turbo Restoration Decal and re-painted black on inside.
Mirror – Plastics	Fixed scrapes in plastic. Wet sanded for high polished areas. Re-textured inside area. Applied Forever Black in textured areas (5 coats). Polished gloss areas with 3 grits of rubbing compound and applied Forever Black (3 coats).
Mirror, Right – Rubber	Built moulds and re-cast with Liquid RTV Rubber for boot and pad.
Mirror, Left– Rubber	Built moulds and re-cast with Liquid RTV Rubber for boot and pad.
Front Fairing Reflectors	Lens wet sanded to 1200, 1500, 2000. Polished with 2 grits of rubbing compound.
Side Fairing Seca Turbo Emblems	Polished chrome areas and repainted black background. Created new adhesive rubber backing.
Toolkit	Applied Forever Black to kit bag. Sandblasted tools and re-zinc plated.
Toolkit Holder	Polished and applied Forever Black. Replaced toolkit band with NOS.

Frame Parts

Motor Mount Brackets	Sandblasted and powdercoated.
Handle Bar Brackets	Sandblasted and powdercoated.
Handle Bars	Sandblasted, epoxy primer and polyurethane coated.
Center Stand	Sandblasted and powdercoated.
Centre Stand Bumper	Cleaned, rubber restorer applied
Driver Foot Pegs	Sandblasted and powdercoated. Replaced rubber with NOS
Frame	Sandblasted and powdercoated.
Triple Tree	Sandblasted and powdercoated.
Fork Brace	Sandblasted and powdercoated.
Passenger Grab Bars	Sandblasted and powdercoated.
Rear Metal Inner Fender	Sandblasted and powdercoated.
Instrument Cluster Mounting Bracket	Sandblasted and powdercoated.
Steering Head Bearings	Replaced.
Passenger Pegs	Rubber cleaned and applied Forever Black. Applied rubber re-newer. Metal parts polished. Replaced mounting bolts with NOS.
Side Stand	Sandblasted and powdercoated. Replaced mounting bolt, nut and spring with NOS.
Rear Reflector Assembly	Metal parts sandblasted and powdercoated. Reflector wet sanded to 600, 800, 1200, 1500, 2000. Polished with 3 grits of rubbing compound.
Helmet Locks	Cleaned and repainted. Wet sanded center with 600, 800, 1200, 1500, 2000 and polished with buffing compound.
Tail Light Mounting Bracket	Cleaned and polished. Rubber treated with rubber restorer.

Fuel, Carb and Turbo Parts

Airbox	Wet sand 600, 800, 1200, 1500, 2000. Polished with 3 grits of rubbing compound. Applied Forever Black.
Carb and Surge Tank Mounts	Cleaned, rubber restorer applied to all rubber parts and plugs. Polished all metal and clamps
Carburetors	Fully dismantled and deep cleaned. All seals, gaskets and O-Rings replaced.

	Chrome diaphragm caps polished and re-chromed. Replaced diaphragm cover screws with new screws. Replaced vacuum hose lines.
Fuel Pump	Sandblasted and polyurethane painted mounting bracket. Cleaned all hardware and treated rubber with rubber renewer. Polished fuel pump and hardware.
Fuel Tank	Disassembled, treated with Kreem kit, sandblast rusted areas, sanded, re-paint with polyurethane. Decal reproduced. Polished and rebuilt petcock (new seals, etc.). Cleaned and polished fuel level sensor and applied vinyl restorer to wiring. Applied vinyl restorer to overflow catch and drain hose. Wet sanded center of gas cap lock with 600, 800, 1200, 1500, 2000 wet paper and polished with buffing compound. Applied Forever Black to gas cap body. Reproduced foam fairing supports.
Fuel Tank Mounting Hardware	Polished metal washer and bolt. Rubber cleaned and applied Forever Black. Applied rubber re-newer.
Surge Tank	Fully dismantled, cleaned, painted. Replaced foam in drain valve
Turbocharger	Unit completely rebuilt. Cast iron colour of ceramic coating applied to the exhaust housing body. Wastegate port sandblasted and re-painted. All mounting bolts replaced. Wastegate, flange and exhaust pipe gaskets re-created by hand and replaced.
Turbo Oil Supply Line	Cleaned and applied rubber restorer to rubber areas. Polished all other areas. Replace Scavenge Hose with NOS. Replaced gaskets with NOS.
Turbo to Airbox Junction	Cleaned, waxed
Turbo Junction Duct	Cleaned, waxed
Turbo Vacuum Hoses	Replaced lines, replaced spring clip clamps with NOS.
Turbo Duct Hose	Cleaned, rubber restorer applied, cleaned 1 clamp, replaced other.

Suspension System and Drive Train Parts

Drive Shaft Housing Assembly	Sandblasted and polyurethane coated. Oil breather cap and filler bolt replaced with NOS.
Drive Shaft Joint Boot	Rubber cleaned and applied Forever Black. Applied rubber restorer.
Fork Assemblies	Replaced all seals and dust caps. Cleaned rubber plugs and applied rubber restorer. Reproduced decal on left fork.
Fork Air Ports	Sandblasted and powdercoated. Replaced o-rings.
Outer Fork Tubes	Sandblasted, deburred and polyurethane coated.
Passenger Peg Mounting Brackets	Sandblasted inside faces. Sanded out scrapes on outside 120, 150, 180, 240, 400, 600. Wiped with thinner to remove residue. Polyurethane clear coated.
Passenger Peg Bolts	Replaced with NOS.
Pivot Arm	Sandblasted, deburred and powdercoated. Decal re-produced.
Pivot Arm Caps	Polished and re-chromed.
Rear Shock Mounting Nuts, Washers, Bolts	Polished and re-chromed.
Rear Shock Assemblies	Cleaned and polished chrome with Mother's Chrome Polish. Polished ends of airlines. Rubber bellows and air lines cleaned and applied Forever Black. Applied rubber re-newer. Decals re-produced.
Seat Assembly	Separation in cover re-sewn and Forever Black applied. Seat pan sandblasted and powdercoated. Grab handles cleaned and applied Forever Black. All rubber bumpers on bottom of seat cleaned and applied rubber restorer. Latch mechanism polished. All bolts, washer and nuts replaced. Plastic cover wet sanded to 600, 800, 1200, 1500, 2000. Polished with 3 grits of rubbing compound. Decals re-produced.