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Ducati ST FAQ

Revision 1.4

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Please email ducati_st_faq@bike-gizmos.com with additions, corrections or queries
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Legend:

Text in blue italics indicate that more information is required.

Text in red identifies possible difference between the ST2 and ST4

Text in green identifies possible difference between ST4 and ST4s

Text in black italics indicates an extract from the Owner's Manual.

Normal sized text in bold and black indicates a direct quote from a list contributor.

[Underlined text in blue indicates a link](#)

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0 Dedication

The Ducati ST FAQ is dedicated to the memory of Leah Oliver, who was one of thousands tragically and senselessly killed on September 11th, 2001.

Leah was the daughter of Walter Oliver – a contributor to the FAQ, a father, a husband and ST2 owner. Walter's red 2000 model ST2 now has a name: "LEO", for "Leah Elizabeth Oliver". Some words from Walter appear below the photographs.



"It's been a year since that surreal day of September 11, 2001. The passage of time has not made it any easier to deal with the senseless loss of our beautiful Leah, or to speak about her in the past tense—to know that I won't again see that wonderful smile or that cute wink in my doorway for the remainder of my time on this earth.

For a time we shared one of my passions – motorcycling. We'd head out on beautiful Sunday mornings to tour the countryside of northeastern New Jersey and up into New York State. We had an intercom on the bike that allowed us to share our thoughts about the ride as we passed interesting things along the way. We both enjoyed the way motorcycling or even driving a convertible with the top down can make you a more active participant in the modern mechanical world – closer to the smells and textures of the outdoors. We felt so free. She was a wonderful passenger and it was always my pleasure to have her along—on the road, as well as in my life."

1 Introduction

1.1 About the FAQ

This FAQ was constructed to assist both existing and potential owners of one the finest series of Sport Touring motorcycles ever built. This document covers the Ducati ST2, ST4, ST4s, ST4s ABS and ST3.

The first draft of this document was created on the 20th July 2001 by Perry Rosenboom, with the essential assistance of the members of the YahooGroups ST2 Owners List.

Special thanks go to Stephen Gendle for creating the ST2 Owners list, and for his input, feedback and assistance. Thanks also go to the many contributors, and those who gave permission for extracts of their personal web sites to be used in this document. These people are acknowledged in [section 1.1.2](#)

The format is a bit different from conventional FAQs, which have a question-and-answer structure. Instead, we've taken things which you want to know and put in more of a referency style. This means that we can sneakily add in things which aren't "frequently asked" but which we think you ought to know anyway!

Q: "Hey, why aren't there any pictures in this?"

A: "Because the Author wanted a detailed document which could be loaded quickly from a web site. Where necessary, links are provided for pictures or further information."

This is *your* FAQ, so please email ducati_st_faq@bike-gizmos.com with additions, corrections or queries.

1.1.1 Revision History

Version	Posted Date	Updater	Comment
0.0	20 th July, 2001	Perry Rosenboom	Original draft document, compiled from information on the ST2 Owners List.
0.1	7 th September, 2001	Perry Rosenboom	First published draft
0.2	8 th September, 2001	Perry Rosenboom	Cleaned up some formatting. Incorporated some liSTer feedback
0.3	10 th September, 2001	Perry Rosenboom	Added section "What to look for when buying a used Duc"
0.4	23 rd September, 2001	Perry Rosenboom	Added heaps of new info - too much to list!
0.5	24 th September, 2001	Perry Rosenboom	Updated table of contents and formatting
0.6	4 th October, 2001	Perry Rosenboom	Various things - reduced the file size, released a PDF version
0.7	12 th October, 2001	Perry Rosenboom	Extra tips in a few areas, and a couple of corrections
0.8	12 th November, 2001	Perry Rosenboom	Added Trivia section. Included ScottOiler info, and updated lots of other bits
0.9	14 th December, 2001	Perry Rosenboom	Lots of things from clever people!
1.0	30 th August, 2002	Perry Rosenboom	Major update and many items added – accumulated from feedback over 6 months.
1.0a	30 th August, 2002	Perry Rosenboom	Corrected an error in the credits!
1.1	2 nd September, 2002	Perry Rosenboom	Added a few other gems I found which should have gone into 1.0
1.2	11 th September, 2002	Perry Rosenboom	Dedication added in memory of Leah, and many others who died a year ago
1.3	13 th June, 2004	Perry Rosenboom	Updated various bits – it's been a while!
1.4	4 th May, 2005	Perry Rosenboom Robert Mohns	A big update, because it's been so long (sorry!). In this edition I've included the supplemental FAQ compiled by Robert Mohns from the ST_Owners list.

1.1.2 Credits

The information within this Ducati ST Frequently Ask Questions (FAQ) is given in good faith and the authors, contributors, YahooGroups ST Owners List members, and those listed below or anywhere else in this document are not liable in anyway to advice given or taken from its content, or for any modifications carried out according to information

contained herein.

The following people are known to have contributed to this FAQ, in no particular order! If I've forgotten to include you, [then let me know!](#) This table is now sorted by name, just so I don't offend anyone!

Whodunnit?	Waffor?	Wotseride?
Alain Borie	Electrical tip	
Brad	Providing info on the Dzus fasteners	01 ST4
Chris Kirk	Various bits as acknowledged through this document, and another great ST site.	ST2
Dan C	Various bits, including aftermarket exhaust mounting warning. Supplied some info on brake pads.	01 ST4
Dave Harhay	Provided a list of changes between the ST4s of 2003 and 2003	ST4s
David Harvey	Some information was used (with permission) from David's excellent web site.	97 ST2 92 Superlight 88 Paso
David Porter	Info in the 907ie and Paso	
Denis St. Amand	Feedback on various things	98 ST2 (Black)
Douglas Kendall	Providing info on Singapore delivered models, and other bits	98 ST2
Duncan Sargeant	Feedback on various items	98 ST2
Eric Schneider	Info on upgrading and cleaning the headlight	
Fariborz	Info on all sorts of things. A great contributor to the list and one of the Dzus gurus! Thanks Desmobee!	
Garry	Extensive research on the fastest color for an ST	
Ian Deary	Felt sorry for him, 'cause his bike wouldn't start, so thought he deserved a mention!	00 ST2
Ian Ellis	Provided feedback on a whole bunch of areas, scattered throughout. Provided some painting tips	'00 ST2 blue (no name)
James	Tips on checking belt tension	
John Clifton	Tip on removing sponginess from the brakes. Advice on fixing a running problem.	98 ST4
John Dean	Tip on checking the thermostat	
John Stockwell	Some tips for Ian!	
John Swiatek	For a great description of why the standard starter motor wiring sucks! Info on dual plug kits, and socket and plugs	
Justin Berth	Headlight fairing refitting instructions Steering lock adjustment tip Sprocket clip info Air filter info Vee Two clutch info	97 ST2
Kman	Instructions on rear panel removal	
Kyle Kirschenmann	Various pearls, spread throughout this document	97 ST2 01 ST4
Mark Trbojevic	Advice on clutch groan, clutch kit replacement	02 ST4s
Mark Whitfield	Info on fitting adjustable levers	
Mark Willburger	Provided tips on what to look for when buying a used ST and also provided spare key information	00 ST4
Michael Pagan	Tips on long distance travel	
Mike Mullen	Loads of corrections and additional information specific to the ST4s	ST4s
Mike West	Brilliant Dzus conversion article (linked from this document)	
Mike Wolf	What can I say about Mike? Contributor and creator of the Project ST. A legend! We are so unworthy, I even hesitated to use his name in the FAQ (Sorry about that Wolfie!) Thanks for the bearing part numbers.	
Patrick	Excellent description of how to put a heavy bike up on the main stand	

Ray C	Excellent perspective on the Clutch Slave Cylinder problem. Brilliant section on Battery Theory!	01 ST2 98 ST2
Richard Stryniewicz	An excellent web site, with loads of pictures of mods and tips, some of which I've used here. Take a look!	
Robert Mohns	Provided loads of assistance by compiling the supplemental FAQ. A very big thank you to Rob and all the ST_Owners liSTers.	
Ron	Tips for re-installing the rear wheel	00-ST4 01-KTM LC4
Ron Ginter	Providing his tyre pressure info	
Ruudje Koskamp	Alternatives on regulators for the ST	
Sean Sargeant	A very frank description about what can happen if you use the wrong oil filter.	
Stephen Gendle	Starting the ST2 list, and providing support and feedback	Yellow 97 ST2 – "The Duchess"
Steve Allen-Shinn	Provided a correction to an incorrect link	
Sue Diaz	Provided some words on the oil screen removal process	01 ST2
Tim Wren	Provided a host of feedback and corrections throughout.	00 ST4
Tom Melesky	Advice on tyre pressures	
Vincent Roussillat	Battery tip	ST2
Warren Walker	Provided the suspension setup section.	97 ST2

1.2 Model History

1.2.1 1997

ST2 released. The engine appears to be a descendant of Ducati's first fuel injected street bike, the 907ie, whereas the frame appears to have been derived from a 916 trellis frame.

The 907ie was a mixed bag with the old square-tube frame, 851 cases, bigger brakes, 17" wheels (thanks to David Porter for this)

Only a limited number of ST2's were available in the US in 1997 due to delays in obtaining certification for the necessary emission standards - it seems as though these bikes were 1998 spec (see below).

Cost of an ST2 was around \$12,000 in the USA. Luggage was available as an option.

1.2.2 1998

Colours available were silver and black, with the dull gold frame and wheels. Red was available in Europe, but one of the listers who tried to order a red 98 ST2 in the US was told "No".

Fully adjustable Showa forks and Showa shock (threaded preload adjuster), although it seems the ramp style preload adjuster made it onto some of the later 98 models.

Cost in the US was \$12,495 bags included. Engine is indeed a mix of water cooled 4-valve and air-cooled 2-valve, with a 2 mm bigger bore than 900SS motor for 944 cc. Engine colour is sort of brownish, goldish, grey. (Thanks to Kyle for this section)

Some earlier ST2's have "DUCATI" as stamped on part of the right side engine case cover

1.2.3 1999

1999 saw introduction of ST4 with all the suspension components of the ST2 for US\$14,495 (or \$14,995) but bags were an \$800 option for ST4 (later included since they couldn't sell too many 99's).

I believe the 1999 ST4 got the gold remote-reservoir master cylinders. 1999's had the ramp adjustable preload Showa shock, not threaded.

ST4's this year also got the same brake discs as the 996 (bright gold aluminium carrier, not steel. I know by 2001 they changed to the less expensive discs as found on the other bikes).

Most importantly (for those suffering 98 owners) the electrical system was changed to a 3-phase higher wattage output system. (Thanks to Kyle for this section).

Some 1999 model STs had their brake and clutch master cylinders changed to the new plastic type.

1.2.4 2000

Thanks to Ian Ellis for this material!

ST2:

- updated graphics
- equipped with Kryptonite anti-theft padlock
- auxiliary power socket (takes BMW plug)
- new clutch master cylinder
- standard equipment includes colour matched saddle bags
- non-self-retracting side stand (fix a problem and call it an upgrade!)
- gold coloured frame retained

ST4:

- updated graphics
- equipped with Kryptonite anti-theft padlock
- auxiliary power socket
- new clutch master cylinder
- standard equipment includes colour matched saddle bags
- non-self-retracting side stand
- Ducati Racing gun metal grey frame and wheels

From the Ducati UK website (no longer on line):

All Versions:

- Change in logo on fairing.
- Ducati Sport touring logo on the fuel cap.
- Rear splash guard removed.
- New design aluminium carrier for disc brakes.
- Anti theft lock under seat.
- Power take-off for accessories.
- Protective treatment with double transparent layer on the fairing.
- Brembo PSC 12 clutch master cylinder with higher hydraulic ratio.
- 320mm Brembo front discs.
- Brembo P4 30-34 front calipers with 4 pistons and new PSC master cylinder with Radial technology.
- Steel braided brake lines.
- Brake pads of sintered, high friction material.
- Side stand without automatic return, with fully extended lock and anti engine start-up sensor.

ST4:

- front disc increased to 5MM (probably to address warping of rotors)

Owner observation: Clutch and front brake reservoirs change from metal “coffin” style to plastic cylinders mounted above the bars - late in the model year plastic tank guard got ST logo added

In US ST2 colour was red or blue metallic. ST4 was red or yellow

MSRP ST2 - \$12,495

MSRP ST4 - \$14,695

1.2.5 2001

2001 was the last year the ST4 was imported into the US, although they were still being sold in Europe and Australia during 2002.

A redesigned, sealed clutch slave cylinder was released in 2001 and should be fitted to all 2001 model STs. (Note there was a recall for some 2001 model STs – check with your dealer to see if this applies to you.) See “Clutch” section below for details.

ST2:

- Lower spec Sachs rear shock replaces the Showa.
- Yellow introduced for the ST2.
- Frame changed to metallic grey colour. Engine is metallic silver grey.
- Enlarged 12mm engine to frame linkages.
- Lighter sealed-for-life battery.
- New timing belt rollers with stepless adjustment on hub for fine timing.
- Showa front forks with inverted chromium plated 43 mm legs and spring preload adjustment.

Colours available: Red, Metallic Blue, Red. Metallic Silver

Frame Colour: Metallic Grey

ST4:

- Frame changed to metallic grey colour. Engine is metallic silver grey.
- Enlarged 12mm engine to frame linkages.
- Lighter sealed-for-life battery.
- New oil cooling pipes with double o-ring.
- New Sachs rear shock absorber.
- New, lighter front brake discs.

Colours available: Red, Metallic Blue, Red.

Frame Colour: Metallic Grey.

ST4s:

Designated as a Model year 2002, these 996 based Sport Touring Ducatis were released in 2001.

Colours available: Matt Grey, Yellow, Red.

Frame colour: Metallic Grey

- New graphics, new Asahi-Denso switchgear
- Special hi-torque version of the Desmoquattro 996 engine, integrated injection-ignition CPU incorporating immobiliser, specific sprocket ratios, fuel pump with new lighter, more compact flange.
- Ohlins rear shock absorber with spring preload, compression and rebound adjustment, aluminium swing arm, Brembo 5 spoke wheels.
- MSRP on release was around \$15,000 (in the USA)

1.2.6 2002

ST2:

- Sealed clutch slave cylinder fitted

Colours available: Red, Yellow, Metallic Silver
Frame Colour: Metallic Grey

ST4:

- Sealed clutch slave cylinder fitted

Colours available: Red, Yellow.
Frame Colour: Metallic Grey.

ST4s:

-

Colours available: Matt Grey (titanium), Yellow, Red.
Frame colour: Metallic Grey

1.2.7 2003

ST2:

- It is reported that no ST2 models were produced in 2003, although they existed on the Ducati web site.

Colours available: Red, Yellow, Metallic Silver
Frame Colour: Metallic Grey

ST4:

- Final year of availability for the ST4

Colours available: Yellow, Red.
Frame Colour: Metallic Grey.

ST4s:

- Upgraded 20A power socket
- Clutch has a micro switch, if in gear you must hold in lever to start machine.
- Side stand can be down and engine will start and run.
- Immobilizer is a variant of the original on the 2002. Hopefully better.
- Starter solenoid has revised leads preventing the wire connector from coming off. Also the leads to battery and starter are now facing outboard and are covered so nothing can touch them.
- Factory-supplied tires are Michelin Pilot Sport (in the USA, at least)
- Tank/Key cover is color-matched to bodywork (not dark grey plastic as in all previous models)

Colours available: Matt Grey (Titanium), Red, and Metallic Grey with red wheels.
Frame colour: Metallic Grey

ST4s ABS:

In 2003, Ducati introduced ABS, adding an ABS variant of the ST4s. Ducati claimed that its ABS, made to its spec by Bosch, was a true sporting ABS designed not to hinder the aggressive sports rider. Motorcycle Consumer News objectively confirmed this in their test of the 2004 ABS model, recording the shortest stop of any motorcycle they ever tested.

MCN observed that BMW and Honda ABS systems limit braking force to 1 G of deceleration, which artificially increases their stopping distances from their potential. Ducati ABS, in contrast, never activates until the wheel sensor and ABS

computer believe that the machine actually is losing traction.

There are two stages of ABS activation:

Stop further rider input: The ABS unit closes a valve between the lever/pedal and the brakes, preventing an increase in stopping power. (This feel like a “kick” at the lever and/or pedal.) This first stage is designed to prevent wheel lock-up without reducing braking pressure at the time.

Reduce braking power: The ABS unit momentarily releases pressure on the brakes. (This feels like the bike “jumps forward” as braking pressure and deceleration force decrease. Some riders find this unnerving, but the system is designing as intended.) This ends as soon as possible.

The ABS computer senses deceleration during a braking operation (eg, from level pull/pedal push until you release). If either stage 1 or 2 activates, the computer remembers how much deceleration force the bike was exerting before it started to lose traction, and limits braking to that limit for the remainder of the event. The computer resets (forgets this limit) as soon as the braking event ends – eg, you release the brakes, indicating that no further braking is required.

Front and rear wheel antilock are handled independently. However, if the front and rear wheels show very, very different speeds – for example, if you ride an extended wheelie and the front wheel slows or stops spinning – the ABS computer decides it does not have enough information to make an intelligent decision, and deactivates ABS until the data looks sane again.

Also in 2003, the accessory power socket was upgraded to support 20 amps. (The editor of this FAQ does not recommend trying to pull that much continuous power!). This may be because they had to run substantial power to the ABS unit under the seat, and it was easy to upgrade the socket wiring too.

Colours available: Matt Grey (Titanium), Red, and Metallic Grey with red wheels.

Frame colour: Metallic Grey

1.2.8 2004

For the 2004 series of Sport Touring the ST2 and ST4 were both dropped. A new 3 valve ST3 was added to the range, and fits in between where the ST2 and ST4 were. The ST4s and ST4s ABS complete the range.

The entire range was restyled with a new front fairing and better headlight which is adjustable from the instrument panel. Handle bars are height adjustable, the seat has been completely revised, and adjustable brake and clutch levers were introduced. New instrumentation was included.

Catalytic converters are included for non-USA models (according to the Ducati.com web site).

All ST models now allow the bike to warm up in neutral with the sidestand down.

Immobilizers are now standard across the entire ST range.

CAN Line electronics were added to all STs – essentially this means that many signals will share just two wires, greatly simplifying the wiring on the motorcycle.

ST3:

In 2004, Ducati introduced the replacement to the ST2: the 3-valve ST3. Producing more power than the ST2 and with better air intake at high engine speeds, the ST3 has made quite the stir. See any magazine review for more details. (Ducati mechanic and owner LT Snyder reviewed the ST3 for Motorcycle Consumer News in their February 05 issue. See <www.mcnews.com> for back issues.)

The ST3 also got CAN network electronics, improved multifunction instruments, a taller windscreen and much improved

headlamp as part of the restyled nose fairing, height-adjustable bars (1" higher than the original ST bars, can be lowered back to original position) and perhaps most significant of all, a *comfortable seat*. The ST3 also has the 2003 ST4's upgraded accessory power socket.

- All new three valve per cylinder
- Redesigned 'gel' seat
- 20A power socket
- CAN electronics
- New windscreen and headlamp design
- Height adjustable bars
- Remote headlight adjuster

Colours available: Red, Yellow, Metallic Silver
Frame Colour: Metallic Grey

ST4s and ABS models:

Many of the improvements for the new ST3 were also introduced to the ST4s

- Redesigned seat
- CAN electronics
- New windscreen and headlamp design
- Height adjustable bars
- Remote headlight adjuster
- Adjustable levers are stock and aluminium in color.
- Handle bars mount to fork tubes below the top triple clamp. (Previous models mounted onto the top of the triple clamp.)
- Top triple clamp is gullwing shaped to allow more room for the different handlebar mounting above
- Instrument cluster is shaped differently. It now holds the immobilizer components. The instrument surrounds are now eliminated.
- The clutch and front brake master cylinders are coffin shaped and similar in size.
- Rear tire hugger is now plastic—vs Carbon Fiber on previous ST4s models.
- New 5A accessory fuse in main fusebox. Listed for heated grips

Colours available: Yellow, Red, Metallic Silver.
Frame colour: Metallic Grey

1.2.9 2005

In the 2005 model year, the ST3 and ST4s got wet clutches. Controversial among many owners of previous model year ST's, Ducati says it changed to a wet clutch to decrease clutch effort and lower noise. LT Snyder's 2005 ST3 review for Motorcycle Consumer News noted that the clutch of his demo bike was slightly grabby, as though the plates were sticking due to hydraulic adhesion, and hard to find neutral.

2005 also saw the introduction of improved fairing fasteners, as a direct result of ST owner feedback.

ST3:

- Improved fairing fasteners
- Wet clutch
- Rubber trim on the windscreen gone.
- Seat improvements over 04.

Colours available: Gloss Black, Red, Metallic Silver

Frame Colour: Black, on the gloss black model, metallic grey on others

ST4s and ABS models

- Improved fairing fasteners
- Wet clutch
- Rubber trim on the windscreen gone.
- Preload adjusters of the forks are wing nut in style.
- Seat improvements over 04.

Colours available: Gloss Black, Red, Metallic Grey with red wheels

Frame Colour: Black, on the gloss black model, metallic grey on others

1.3 Special Editions

No special editions known of, although some owners proudly refer to the Metallic Grey model with red wheels as a "Senna". This is because the colour scheme is similar to a limited edition "Senna" 916 which was released by Ducati in 1995.

1.4 Model differences between countries

1.4.1 Australia

Australian delivered ST bikes are wired so that headlight will come on when the ignition is turned on. The headlight on/off switch has been replaced by a black plastic plate.

1.4.2 USA

All bikes came to US as California Spec with CA EPROM and charcoal canister fitted

Headlight wired as per the Australian model (above).

1.4.3 UK

No specific UK features known of.

1.4.4 Other Countries

1.4.4.1 Singapore

Points on a bike bought in Singapore for a 1998 ST2 (provided by Doug Kendall):

- 12 month warranty
- No headlight switch--always on. Plate where switch is normally.
- Standard with Metzeler MZ4.
- Importer is Distributor is Agent is dealership.

1.5 Warranties

The details in this section are with regards to the Australian supplied and owned ST bikes. Details may vary from country to country. Email ducati_st_faq@bike-gizmos.com if you would like to add specific information for your country.

Original details come from an Owner's Service Manual from an Australian delivered 2001 model ST2.

In the USA, it may be possible to extend the warranty on your new bike through a program called DFS Advantage (Motorcycle Plus) @ 1-800-228-0662

1.5.1 Warranty period

Ducatis are covered by a factory warranty for the period of 2 years from the purchase date of the motorcycle.

The actual warranty says:

“Ducati Motor S.p.A – warrants all new motorcycles intended for road circulation for a period of twenty-four (24) months without any mileage limit.

This warranty consists in the free replacement or repair of any parts found to be defective or inefficient due to a manufacturing fault ascertained by Ducat Motor S.p.A – Bologna on an ex-works basis. Any defective parts replaced under warranty become the property of Ducat Motor S.p.A. Any new parts used as replacements or repaired under warranty are covered by warranty for the remaining warranty period applicable to the motorcycle.”

1.5.2 Exclusions

As with most vehicle warranties, the warranty offered by Ducati does not cover the following:

- motorcycles used in any kind of contest;
- motorcycles used for hire-service;
- tyres, as their warranty is granted by the relevant manufacturer;
- parts subject to wear in the normal course of operation (final drive, belts, Bowden cables, spark plugs, brake pads, clutch plates);
- regular maintenance operations as well as the material required for this purpose (oil, spark plugs, filters, etc.)
- defects caused by oxydization or weather conditions.

1.5.3 Owner’s Obligations

There are some obligations which owners have.

- Ensure that the Warranty and Pre-Delivery certificate is returned to the Ducati Factory (usually this is done by your dealer);
- Ensure that services are carried out at the specified intervals at an authorised Ducati Dealer (this one is sometimes the cause of some debate!);
- Notify defects to the dealer within 8 days from the time such defects are or should have been found if ordinary diligence is exercised;
- Notify Ducati of the transfer of title using the suitable form in the service booklet.

1.5.4 Limitations of warranty

These are the general escape clauses that can be used. Your warranty can be declared null and void under the following conditions:

- The motorcycle is disassembled or repaired at unauthorised workshops;
- Defects due to accidents, negligence or overloads;
- Non-original parts are used;
- Motorcycles are not used in compliance with the recommendations of Ducati;
- Maintenance is not carried out according to the provisions contained in the owner’s manual. And any other technical bulletins issued by Ducati.

1.5.5 Repairs outside warranty period

Occasionally Ducati North America (DNA) will stand up for repairs past the warranty period, however the dealer needs to be involved or the owner needs to be very assertive.

Your case is obviously strengthened if you have reported problems with the defective item through out the warranty period. If in doubt, record a potential problem with your dealer at service time..

1.6 Recalls

Over the years a number of recall notices have been issued for the ST models

- 1998 ST2 had a recall for an anti-vapour lock cup to be attached to the fuel pump.
- A recall to replace the short (916 part) shift lever with a longer one. This part was changed for 1999-later and now looks like the fat Monster part, not the sleek 916 part.
- A certain VIN range of ST2s also fall under the alternator/shim recall. This recall did nothing for the longevity by my experience.
- Some '98 owners got their headlight shells replaced too since the sealed units would off-gas badly, and caused a lot of bulb burnouts due to heat I suppose. 1999 and later models have vented headlight shells to help prevent this (although they just fog at a slower rate).
- The infamous bad batch of sprocket retaining clips that only seemed to make it on ST2s in 1998. Replaced with a hardened and much more expensive piece. The hardened item is black in colour.
(Thanks to Kyle for all of the above info).
- Replaced internal fuel lines due to stock ones splitting on some 98 models. (Thanks to Denis for this one)
- Slave cylinders were recalled on 2001 ST models. The factory fitted unit was junk, and allowed grit into the unit. The replacement unit was sealed, and was standard fitment to the 2002 models. No problems were reported with the replacement units.

1.7 What to look for when buying a used Duc

Want some tips on what to look for when buying your new used ST? Here's a list of things to check. Don't be put off – your prospective purchase may have none of these things wrong. More details on some of these individual items can be found in the ["Known Problems"](#) section....

- Slave cylinder leak
- Front and rear wheel bearing slop
- Steering head bearing slop
- Disk warpage
- Chain wear
- Light housing fogged up (easily fixed by rinsing with alcohol)
- Tire condition
- Ask about service intervals
- Ask about rocker arms
- Look for cracks in frame
- Look for broken engine mount bolt.
- Check all lights
- Ease of starting when cold (although most Dukes are a temperamental to start from cold).

Thanks to Mark Willburger for starting this list off.

[\[Table of Contents | Intro | Specs | Maintenance | Characteristics | Probs | Mods | Suppliers | Contacts\]](#)

2. Specifications

2.1 Colour Specifications

Colour	Paint Code
Red	473.101
Yellow	473.201
Metallic Silver (ST2 only)	291.601
Metallic Blue (ST2 only)	291.800
Matt Grey (ST4s only)	291.600
Metallic Black (ST2 only)	291.500
Metallic Dark Grey (ST4 model with red wheels)	653.6047
Gloss Black (introduced 2005)	248.514

Thanks to Ian Ellis for the following info, and applies to the USA:

- Colour codes are manufacturer code
- Colour Rite touch up pens can be purchased from Fast by Ferracci <http://www.ferracci.com/>
- Gold frame and wheel colour is F99835
- Clear coat is TFCC(U)
- Blue is 7570U
- Yellow listed as F99815 (not tried)
- Red 94-new listed as F99805 (not tried)
- Dark Anthracite/Metallic Gray listed as F99820 (not tried)
- Light silver is listed as F99825 (not tried)

Additional information available at <http://www.color-rite.com/>

The following information on the Matt Grey (no - it's NOT bat barf!) kindly supplied by Brad:

"While researching the painting of my (soon to be ordered) 4S, I learned that the grey bikes (as are all "matte" finish Ducs) are in fact clear coated. It has a "dulling" clear coat applied over the grey paint which is why the decals have to be applied to the outside, rather than under, the clear coat otherwise the decal colours wouldn't look right.

Furthermore, I was told that using Honda polish or other wax product WOULD NOT harm the finish, or alter the colour, since there is the same amount of clear coat layers on all the colours. Plus, use of these products are, actually, recommended as it would help preserve the decals (both colour and adhesion). FYI, this information is from Autobody Dynamics in Crest Hill, IL."

2.2 ST2 General Specifications

Dimensions		
1997 - 2001		
Length	2070 mm	
Width	910 mm (mirrors are the widest point on each side of the bike)	
Height	1180 mm	
Ground clearance	165 mm (lowest point is the exhaust going under the bike from the forward cylinder)	
Weight	Dry	212 kg
	Loaded	420 kg
Wheelbase	1430mm	
Engine		

1997 - 2001

Type	Twin cylinder, four stroke, 90 degree "L" type, longitudinal, 944 cc
Valve Gear	2 per cylinder, Desmodromic, operated by four rockers (2 opening rockers and 2 closing rockers) and a single overhead camshaft. It is operated by the crankshaft through spur gears, belt rollers and toothed belts.
Compression ratio	1 : 10.2 ± 0.5
Power	61 kW, 83 HP at 8500 rpm
Torque	82 Nm at 6500
Max rotation speed	9000 rpm
Bore x Stroke	94.0 mm x 68.0 mm
Fuel Grade	95 – 98 RON Unleaded

Frame

Type	Tubular trellis with upper section made of high strength steel
Steering angle	30 degrees
Headstock angle	24 degrees
Trail	102 mm

Transmission

Type	6 – speed gearbox with constant mesh gears, gear change pedal on left side of motorcycle. Drive is transmitted from the engine to the gearbox main shaft via spur gears.	
Total Gear Ratios	1st	15 / 37
	2nd	17 / 30
	3rd	20 / 27
	4th	22 / 24
	5th	24 / 23
	6th	28 / 24
Clutch	Dry clutch operated by control lever on left handlebar.	
Sprockets	Front	15 teeth
	Rear	42 teeth
Chain	Make	DID
	Type	525 HV
	Size	5/8" x 1/16" (Chain specifications supplied in inches by Ducati)
	Links	102

Wheels

Type	Brembo Three-spoke, light-alloy rims	
Dimension	Front	3.50 x 17"
	Rear	5.50 x 17"

Tyres

		1997	1998	1999	2000	2001
Size	Front	120/70 – ZR17				
	Rear	170/60 – ZR17				
Type	Front	Metzeler ?	Metzeler ?	Metzeler ?	Metzeler ?	Dunlop ??
	Rear	Metzeler ?	Metzeler ?	Metzeler ?	Metzeler ?	Dunlop ??

Brakes

		1997	1998	1999	2000	2001
Front	Type	Double floating drilled disc, hydraulically operated by a control lever on right handlebar. Brake calipers with separate 30/34-4 pistons				
	Disc diameter	320 mm				
	Braking surface	88 sq cm				
	Make	Brembo				
	Friction material	FERIT I/D 450 FF				
	Master Cylinder					PS 16
Rear	Type	Fixed drilled steel disc, hydraulically operated by a pedal on the right side.				
	Disc diameter	245 mm				
	Braking surface	25 sq cm				
	Make	Brembo				
	Friction material	FERIT I/D 450 FF				
	Master Cylinder					PS 11
Electrical						
Headlamp	12V-55W low beam unit, poly-ellipsoidal with capacitor; 12V-55W high beam unit; 12V-5W parking light.					
Instrument Panel	12V-1.2W warning lights; 12V-2W and 3W instrument lights (<i>Anyone know which is which?</i>)					
Turn Indicators	12V-10W bulbs					
Tail light	12V-5/21W double filament bulb for stop light and parking light; 12V-5W bulb for number plate light					
Battery	12V-10 Ah					
Generator	12V-520W					
Starter motor	12V-0.7kW					
Electronic voltage regulator protected by a 40A fuse.						
Spark Plugs	Champion RA 4 HC					
Suspension						
Front	Type	Hydraulic upside-down fork provided with outer adjuster for rebound, compression and preload (for inner springs of fork legs)				
	Stanchion Diameter	43 mm				
	Travel	130 mm				
	Type	Progressive, with a rocker arm connecting frame and upper pivot point of the shock absorber and an arch connected at the bottom to the swingarm. Shock absorber allows adjustment of compression damping and rebound, and spring preload. <i>Is this still true?</i>				
Rear	Travel:	65 mm				
	Rear wheel travel:	148 mm				

Capacities

Fuel	21 litres, including 4 litre reserve
Engine oil	3.4 litres, Shell Advance Ultra 4
Front fork	0.492 litres (each leg), Shell Advance Fork 7.5 or Donax TA
Front / Rear brake and clutch circuits	Shell Advance Brake DOT 4
Cooling Circuit	3.5 litres, Antifreeze Shell Advance Coolant or Glycoshell 35-40% + water

2.3 ST2 Part Numbers and Service Specs

The following information comes from publicly available Ducati information. Data related to Model Year 2000.

Item	Part Number	Other Data
Timing Belt	73710011A	Service Tension: 2.5 with gauge 887650999 (+ KIT 887651086)
Valve clearances • Opening: Intake Exhaust • Closing: Intake Exhaust		assembly / inspection - mm (from cold) 0.10, 0.12 / 0.05, 0.12 0.12, 0.15 / 0.05, 0.15 0.03, 0.05 / 0.03, 0.20 0.03, 0.05 / 0.03, 0.20
Valve lift: Intake / Exhaust	mm (0 clearance)	11.8/11.4
Chain • Front and rear sprocket/chain kit no.	525 HV 67620291A	
Clutch Kit no.	19020013A	
Air filter	42610091A	
Fuel pump intake filter	42540081A	
Fuel filter	42540041B	
Throttle opening (idling)	(degrees)	2.4 (EU) 2.95 (USA) 3.5 (CH)
CO rate \pm 0.5 (standard)	% Vol.	From 3% to 6%
Spark plug (type) • Part No.	RA 4 HC 67040071A	
Electrode gap	mm	0.5, 0.6
Pick-up air gap	mm	0.6, 0.8
12V battery	39540011A	

2.4 ST4 General Specifications

Items in RED indicate differences between the ST2 and ST4

Dimensions	
	?? - 2001
Length	2070 mm
Width	910 mm (mirrors are the widest point on each side of the bike)
Height	1180 mm
Ground clearance	165 mm (lowest point is the exhaust going under the bike from the forward cylinder)

Weight	Dry	215 kg			
	Loaded	420 kg			
Wheelbase		1430mm			
Engine					
?? - 2001					
Type	Twin cylinder, four stroke, 90 degree "L" type, longitudinal, 916 cc				
Valve Gear	4 per cylinder, Desmodromic, operated by eight rockers (4 opening rockers and 4 closing rockers) and a single overhead camshaft. It is operated by the crankshaft through spur gears, belt rollers and toothed belts.				
Compression ratio	1 : 11.0 ± 0.5				
Power	78.6 kW, 107 HP at 9500 rpm				
Torque	84 Nm at 7250				
Max rotation speed	10,000 rpm				
Bore x Stroke	94.0 mm x 66.0 mm				
Fuel Grade	95 – 98 RON Unleaded				
Frame					
Type	Tubular trellis with upper section made of high strength steel				
Steering angle	30 degrees				
Headstock angle	24 degrees				
Trail	102 mm				
Transmission					
Type	6 – speed gearbox with constant mesh gears, gear change pedal on left side of motorcycle. Drive is transmitted from the engine to the gearbox main shaft via spur gears.				
Total Gear Ratios	1st	15 / 37			
	2nd	17 / 30			
	3rd	20 / 27			
	4th	22 / 24			
	5th	24 / 23			
	6th	28 / 24			
Clutch	Dry clutch operated by control lever on left handlebar.				
Sprockets	Front	15 teeth			
	Rear	43 teeth			
Chain	Make	DID			
	Type	525 HV			
	Size	5/8" x 1/16" (Chain specifications supplied in inches by Ducati)			
	Links	102			
Wheels					
Type	Brembo Three-spoke, light-alloy rims				
Dimension	Front	3.50 x 17"			
	Rear	5.50 x 17"			
Tyres					
		??	??	2000	2001

Size	Front	120/70 – ZR17				
	Rear	170/60 – ZR17				
Type	Front	Metzeler ?	Metzeler ?	Metzeler ?	Metzeler ?	Dunlop ??
	Rear	Metzeler ?	Metzeler ?	Metzeler ?	Metzeler ?	Dunlop ??
Brakes						
			??	??	2000	2001
Front	Type	Double floating drilled disc, hydraulically operated by a control lever on right handlebar. Brake calipers with separate 30/34-4 pistons				
	Disc diameter	320 mm				
	Braking surface	88 sq cm				
	Make	Brembo				
	Friction material	FERIT I/D 450 FF				
	Master Cylinder					PS 16
Rear	Type	Fixed drilled steel disc, hydraulically operated by a pedal on the right side.				
	Disc diameter	245 mm				
	Braking surface	25 sq cm				
	Make	Brembo				
	Friction material	FERIT I/D 450 FF				
	Master Cylinder					PS 11
Electrical						
Headlamp	12V-55W low beam unit, poly-ellipsoidal with capacitor; 12V-55W high beam unit; 12V-5W parking light.					
Instrument Panel	12V-1.2W warning lights; 12V-2W and 3W instrument lights (<i>Anyone know which is which?</i>)					
Turn Indicators	12V-10W bulbs					
Tail light	12V-5/21W double filament bulb for stop light and parking light; 12V-5W bulb for number plate light					
Battery	12V-10 Ah					
Generator	12V-520W					
Starter motor	12V-0.7kW					
Electronic voltage regulator protected by a 40A fuse.						
Spark Plugs	Champion RA 59 GC					
Suspension						
Front	Type	Hydraulic upside-down fork provided with outer adjuster for rebound, compression and preload (for inner springs of fork legs)				
	Stanchion Diameter	43 mm				
	Travel	130 mm				

	Type	Progressive, with a rocker arm connecting frame and upper pivot point of the shock absorber and an arch connected at the bottom to the swingarm. Shock absorber allows adjustment of compression damping and rebound, and spring preload.
Rear	Travel:	65 mm
	Rear wheel travel:	148 mm
Capacities		
Fuel		21 litres, including 4 litre reserve
Engine oil		3.4 litres, Shell Advance Ultra 4
Front fork		0.492 litres (each leg), Shell Advance Fork 7.5 or Donax TA
Front / Rear brake and clutch circuits		Shell Advance Brake DOT 4
Cooling Circuit		3.5 litres, Antifreeze Shell Advance Coolant or Glycoshell 35-40% + water

2.5 ST4 Part Numbers and Service Specs

The following information comes from publicly available Ducati information. Data related to Model Year 2000.

Item	Part Number	Other Data
Timing Belt	73710041A	Service Tension: 2.5 (with gauge 887650999)
Valve clearances • Opening: Intake Exhaust • Closing: Intake Exhaust		assembly / inspection (mm from cold) 0.16, 0.18 / 0.05, 0.18 0.21, 0.23 / 0.05, 0.23 0.16, 0.18 / 0.16, 0.25 0.11, 0.13 / 0.11, 0.20
Valve lift: Intake / Exhaust	mm (0 clearance)	9.6/8.74
Chain • Front and rear sprocket/chain kit no.	525 HV 67620331A	
Clutch Kit no.	19020013A	
Air filter	42610091A	
Fuel pump intake filter	42710031A	
Fuel filter	42540041B	
Throttle opening (idling)	(degrees)	1.84 (EU) 2.39 (USA) 2.39 (CH)
CO rate \pm 0.5 (standard)	% Vol.	From 3% to 6%
Spark plug (type) • Part No.	RA 59 GC 67040121A	
Electrode gap	mm	0.5, 0.6
Pick-up air gap	mm	0.6, 0.8

2.6 ST4s General Specifications

Items in GREEN indicate differences between the ST4 and ST4s

Many items need to be verified.

Dimensions		
2001		
Length	2070 mm	
Width	910 mm (mirrors are the widest point on each side of the bike)	
Height	1180 mm	
Ground clearance	165 mm (lowest point is the exhaust going under the bike from the forward cylinder)	
Weight	Dry	212 kg / 467 lbs.
	Loaded	420 kg
Wheelbase	1430mm	
Seat Height	820 mm	
Engine		
2001		
Type	Twin cylinder, four stroke, 90 degree "L" type, longitudinal, 996 cc	
Valve Gear	2 per cylinder, Desmodromic, operated by four rockers (2 opening rockers and 2 closing rockers) and a single overhead camshaft. It is operated by the crankshaft through spur gears, belt rollers and toothed belts.	
Compression ratio	1:11.5 +/- 0.5	
Power	88 kW, 117 HP at 9000 rpm	
Torque	98 Nm at 7000 rpm	
Max rotation speed	10,000 rpm	
Bore x Stroke	98.0 mm x 66.0 mm	
Fuel Grade	95 – 98 RON Unleaded	
Frame		
Type	Tubular trellis with upper section made of high strength steel	
Steering angle	30 degrees	
Headstock angle	24 degrees	
Trail	102 mm	
Transmission		
Type	6 – speed gearbox with constant mesh gears, gear change pedal on left side of motorcycle. Drive is transmitted from the engine to the gearbox main shaft via spur gears.	
Total Gear Ratios	1 st	15 / 37
	2 nd	17 / 30
	3 rd	20 / 27
	4 th	22 / 24
	5 th	24 / 23
	6 th	28 / 24
Clutch	Dry clutch operated by control lever on left handlebar.	
Sprockets	Front	15 teeth
	Rear	38 teeth
Chain	Make	DID
	Type	525 HV
	Size	5/8" x 1/16" (Chain specifications supplied in inches by Ducati)
	Links	102
Wheels		

Type	Brembo Five -spoke, light-alloy rims	
Dimension	Front	3.50 x 17"
	Rear	5.50 x 17"
Tyres		
2001		
Size	Front	120/70 – ZR17
	Rear	180/55 – ZR17
Type	Front	Michelin Pilot Sport
	Rear	Michelin Pilot Sport
Brakes		
2001		
Front	Type	Double semi floating drilled disc, hydraulically operated by a control lever on right handlebar. Brake calipers with separate 30/34-4 pistons
	Disc diameter	320 mm
	Braking surface	88 sq cm
	Make	Brembo
	Friction material	FERIT I/D 450 FF
	Master Cylinder	PS 16
Rear	Type	Fixed drilled steel disc, hydraulically operated by a pedal on the right side.
	Disc diameter	245 mm
	Braking surface	25 sq cm
	Make	Brembo
	Friction material	FERIT I/D 450 FF
	Master Cylinder	PS 11
Electrical		
Headlamp	12V-55W low beam unit, poly-ellipsoidal with capacitor; 12V-55W high beam unit; 12V-5W parking light.	
Instrument Panel	12V-1.2W warning lights; 12V-2W and 3W instrument lights (<i>Anyone know which is which?</i>)	
Turn Indicators	12V-10W bulbs	
Tail light	12V-5/21W double filament bulb for stop light and parking light; 12V-5W bulb for number plate light	
Battery	12V-10 Ah	
Generator	12V-520W	
Starter motor	12V-0.7kW	
Electronic voltage regulator protected by a 40A fuse.		
Spark Plugs	Champion RA59 GC	

Suspension

Front	Type	Showa with TiN upside down fork fully adjustable
	Stanchion Diameter	43 mm
	Travel	130 mm
	Type	Progressive, with a rocker arm connecting frame and upper pivot point of the shock absorber and an arch connected at the bottom to the aluminium alloy swingarm. Ohlins fully adjustable with remote control.
Rear	Travel:	65 mm
	Rear wheel travel:	148 mm

Capacities

Fuel	21 litres, including 6 litre reserve
Engine oil	3.7 litres, Shell Advance Ultra 4
Front fork	0.492 litres (each leg), Shell Advance Fork 7.5 or Donax TA
Front / Rear brake and clutch circuits	Shell Advance Brake DOT 4
Cooling Circuit	3.5 litres, Antifreeze Shell Advance Coolant or Glycoshell 35-40% + water

2.7 ST4s Part Numbers and Service Specs

Not available. (sorry!)

2.8 Additional Part Numbers

2.8.1 Bearings

The following part number information was provided by Wolfie:

These part numbers are common across ST2, ST4 and ST4s

Item	Ducati Part Number	Alternate Part Number	
		Manufacturer	Part Number
Front and Rear Wheel Bearings (same bearings, you'll need two per wheel):	75162.2566	SKF	6005-2RS1/C3
Sprocket Carrier Bearings (you'll need two):	75162.3075	SKF	6006-2RS1
Clutch Throwout Bearing:	702.5.016.1A	SKF	6201-2RS2/LHT23

2.9 Torque Figures

Data related to model year 2000

MAIN TORQUE FIGURES - ENGINE			
	Thread x pitch (mm)	Nm ± 5%	Notes
Head nuts, 2V engines (approach/final)	10 x 1.5	15 / 30 / 38	Grease RETINAX - LX 2
Head nuts, 4V engines (approach/final)	10x1.5	15 / 30 / 51	Grease RETINAX - LX 2
Timing ring nuts (head / transmission)	15x1	71/61	Use new ring nuts


```
|
| |_____Type of motorcycle
|
|_____Ducati
```

For an ST4:

ZDM 1T B 8 S * X B 000000

```
-----
|
| | | | |_____Sequential number
| | | | |_____Plant of manufacture
| | | | |_____Model Year
| | | | |_____Check digit (varies)
| | | | |_____Type of motorcycle
|
|_____Ducati
```

Your model year will follow the following table:

- V = 1997
- W = 1998
- X = 1999
- Y = 2000
- 1 = 2001
- 2 = 2002

The plant of manufacture will be "B" for "Bologna" (Thanks to Kent for this info).

The following is an example of a 97 model ST2 VIN provided by Jukka in Finland (last four digits not shown correctly):

```
ZDM      S1      00AA      V      B      000000
(ducati) (type)  (variant & (year)  (ctrl)  (frame #)
  Italy)      version)
```

A 2001 Australian delivered ST2 has the following VIN format (again, last four digits not shown correctly):

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ZDM      S1      00AA      1      B      000000
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[\[Table of Contents | Intro | Specs | Maintenance | Characteristics | Probs | Mods | Suppliers | Contacts\]](#)

3. Maintenance

3.1 Running-In

Running in (or "break in" as it's called in some countries) is the subject of some debate. Some people say that you should "let 'er rip" and be done with it. Others will treat their baby as though it might break if put through too much stress. Here's the factory recommendation from the owners manual:

<i>Distance</i>	<i>ST2 max</i>	<i>ST4 max</i>	<i>ST4s max</i>
<i>Up to 1000 km (620 miles)</i>	<i>5500 rpm</i>	<i>6000 rpm</i>	<i>6000 rpm</i>
<i>1000 km to 2500 km</i>	<i>7000 rpm</i>	<i>7500 rpm</i>	<i>7500 rpm</i>

After 2500 km	9000 rpm	10,000 rpm	10,000 rpm
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“During the first hours of riding, it is advisable to run the engine at varying load and rpm, though still within the recommended limit.

To this end, roads with plenty of bends and even slightly hilly areas are ideal for a most efficient running-in of engine, brakes and suspension.

For the first 100 km, use the brakes gently. Do not brake violently or keep brake applied for too long. This will enable a correct break-in of friction material on brake pads against brake discs.

For all mechanical parts of the motorcycle to adapt to one another and above all not to adversely affect the life of basic engine parts, it is advisable to avoid harsh accelerations and not to run the engine at high rpm for too long, especially uphill.

Furthermore, the drive chain should be inspected frequently. Lubricate and tighten it as required.”

3.2 Servicing

Servicing is one of those topics which can have owners debating for hours. Essentially, there are four options:

- Obtain service at an authorised Ducati service centre,
- Get your bike serviced at a non-authorised service centre;
- Service the bike yourself; or
- Waddaya mean – service?

If you decide not to do the servicing yourself, then the choice of an authorised or non-authorised service centre is purely personal. Remember, however, that if the bike is under warranty, the manual stipulates that servicing must be carried out by an authorised centre.

Maintenance costs are often a subject of concern for potential new Ducati owners. Sure – the cost of servicing for an ST is more than for a comparable (what the hell can compare to a Duc?) Jap bike. If you compare the costs to a Beemer, you might be pleasantly surprised. As a general rule, the two valve ST2 is a little cheaper to service than the 4 valve ST4 or ST4s.

Quite often the decision to own a Ducati is not based on hard and fast measurables like the service costs!

3.2.1 Service Intervals

According to the owners manual, service intervals are every 10,000 km (6200 miles), plus a service at 1000 km (620 miles). Some dealers will advise services every 5,000 km (3100 miles).

If you decide get your bike serviced every 10,000 km, it’s a good idea to at least change the oil between services, as a minimum. Also, keep an eye on other fluid levels, and if you notice a change in colour of clutch or brake fluids, combined with a change in the lever action, get your bike looked at – it might indicate a leak or some other problem.

It’s also advised that you lubricate the chain at least every 1000 km. The choice of chain lube varies between owners – some recommendations can be found in your owners manual.

If you’re not interested in constantly lubricating your chain, you might want to consider an automatic lubrication system such as the ScottOiler system. For more information, see the “modifications” section.

3.2.2 Service Items

A complete list of the service items as shown by a Ducati dealer is shown below.

ST2 Service Schedule as supplied by my dealer.

This list is a little more comprehensive than supplied in the Ducati service manual.

In addition to the service items listed below, the chain, cables, coolant, brake and clutch fluids, engine oil, brake pads and tyres should be checked at least every 1000k, according to the service manual.

Note - 5,000k service does not appear in the owner's service book.

Action	After 1,000k	Every 5,000k	Every 10,000k	Every 20,000k
Check engine oil	Predelivery			
Replace engine oil	a	a	a	a
Replace Oil filter	a	a	a	a
Clean Engine intake oil filter	a	a	a	a
Check cylinder head nuts	a	a	a	a
Check / Adjust valve clearance			a	a
Check / Adjust timing belts	a	a	a	Replace
Replace Spark Plugs			a	a
Check / Top up coolant	a	a	a	Replace
Replace fuel filter			a	a
Check / Adjust Throttle balance, idle speed, and mixture	a	a	a	a
Check Air Filter	a	a	Replace	Replace
Check cylinder compression Record compression figures			a	a
Check brake fluid level	a	a	Replace	Replace
Check clutch fluid level	Replace	Replace	Replace	Replace
Check / Adjust control cables	a	a	a	a
Check / Adjust tyre wear / pressure	a	a	a	a
Check / Adjust Steering Bearing play	a	a	a	a
Check / Adjust Chain Tension and alignment / lubrication	a	a	a	a
Check brake pad wear		a	a	a
Check wheel bearings		a	a	a
Check rear wheel cush drive		a	a	a
Add cleaner to fuel tank			a	a
Replace front fork oil				a
Check all nuts / bolts	a	a	a	a
General lubrication of pivots etc.	a	a	a	a
Check battery fluid level / charge	a	a	a	a
Check headlight setting	Predelivery			
Loctite side stand bolts	Predelivery			
Loctite front sprocket holder plate	Predelivery			
Check lights / warning lights	a	a	a	a
Check operation of instruments	a	a	a	a
Check operation of cooling fan	a	a	a	a
Check / reset clock setting	a	a	a	a
Motorcycle test ride	a	a	a	a

One of the items not mentioned in the service schedule is to check the engine mounting bolts. Worth while, just for peace of mind.

3.2.3 Chain maintenance

Chain adjustment and lubrication are amongst the important aspects of caring for your bike - even if you decide to have all regular servicing performed by a dealer, you will still need to carry out some chain maintenance yourself. Waiting until the next service will be too late. -your chain and sprockets will be "Kangaroo - Edward" (aka "Rooted" - some Aussie humour for you....)

3.2.3.1 Chain Lubrication

The general consensus amongst ST owners is that chains need to be lubricated as often as possible. Depending on how often you ride, this may be a weekly task. I try and lube my chain after a decent ride - on some weekends the chain will be lubricated daily.

The question of what to use on your chain varies (mental note to self - run a survey on the Owners Group and find out what's the most popular).

I prefer a White Bel-Ray product which is applied (sprayed) onto a warm chain, and sets to a wax like consistency. It's easy, it works, and it doesn't fling gunk onto your rear wheel - but that's my choice. There's a similar "Aral" product which I know some owners also like to use. Don't skimp - A new chain and sprockets will cost much more than a can of good quality lube.

Of course, if the thought of constant chain maintenance sounds like too much hard work - you can always go for a "ScottOiler".

3.2.3.2 Chain Adjustment

Why adjust the chain? Simple. As the chain wears, it stretches. If the rear wheel of the bike isn't moved back a small amount to compensate, there will be too much slack - resulting in chain slapping against the swingarm, chain snatching when you try and accelerate, and all round bad news.

The important thing to note, however, is that a chain which is too tight is worse than a chain which is too loose.

Note - your chain tension when the bike is up on the centre stand will be different to the tension when the bike is on the ground, with your rear parked in the seat, and your weight compressing the rear of the bike.

To tighten your chain, you loosen the nuts holding the axle, and move the rear wheel back. The rear wheel must be even within both arms of the swingarm, otherwise it will point to the left or the right of the bike. This makes cornering an interesting (!) exercise! You'll notice some guide marks on the swingarm. These are usually fine, however some owners never trust marks made by someone else, and check the alignment themselves.

The specifications indicate that the amount of free play in the chain should be 30 mm for an ST2, and 32mm for an ST4 - measured while the bike is on the centre stand. See your owners manual for more information.

Here's a simple guide on adjustment from David Von Stein:

"The actual amount of slack in your chain isn't that critical, as long as it isn't too tight. Check the tension in a couple of different places on the chain as there are usually loose and tight spots. An easy way to check your wheel alignment is with a small tape measure from the swing arm pivot (remove the rubber plugs) to the rear axle comparing both sides. Do not forget to take this measurement after you tighten the axel nut to make sure nothing has moved. And then put them rubber plugs back in your swing arm. "

Some further advice from Ron Ginter (in reply to a new owner's confusion after reading the owner's manual):

"Don't obsess about it. It's not that critical. Put the bike on the centrestand, then grasp the chain midway between the countershaft and the rear axle between your thumb and first finger. Pull it up firmly, then pull it

down firmly. It should move within the specifications. Rotate the back wheel a little and do it again. Repeat as needed. Measure the same point on the chain from top to bottom of movement, e.g. use the horizontal centre of the link as a reference point.

If it's a little tight, then as you move the chain up and down it will feel resistant to movement, but if it's right you'll be able to "snap" it up and down. Better a little loose than a little tight.

There are many ways to align the wheels, My favourite is to bungee a couple of 8' fluorescent tubes to the back tire at ground level, and use them as a guide referencing the front wheel with equal gaps on either side.

A new chain will usually stretch at first. I'd guess an average of two adjustments, then it settles down. If you have to keep adjusting it, then you're probably setting it too tight.

Every 500km or thereabouts, go out the night before a ride, and wipe the chain down good with WD40. Then apply a light coating of chain lube; I usually go once around pointing the nozzle at the outside end of the links, then do it again for the inside. Let it setup overnight, and you'll have a happy healthy chain.

There. That's everything I've learned about chains since I made my own transition from Beemers to Ducs. :-) “

3.3 Owner's Manuals

Owners manuals are available online at the ducati web site at <http://www.ducati.com/bikes/manuals.jhtml>.

Now you know!

3.4 Suspension Setup

3.4.1 General Setup

The information below provided by Warren Walker, Tasmania, Australia, and is attributed originally to Wayne Clarke a former racer with a great deal of experience. Thanks Warren!

BASIC SUSPENSION SET-UP

Important: Before starting, back off compression and rebound settings front and rear.

REAR SPRING

Holding the bike vertical without touching front brake, lift the rear to check the sag (freeweight) of the rear spring. Measure the free sag (do not use the front brake). Ideal measurement is between 0 and 10 mm. Increasing spring pre-load will reduce sag. Measure the sag with the rider seated (no front brake) Ideal is 25mm, 20mm hard, 30 soft. Adjust spring pre-load to suit. 14mm pre-load on spring is the maximum from free load to pre-load, any more will indicate the spring is too soft. The rear spring being too soft will also be indicated by zero free sag, and excessive rider sag of 35mm or more. This is for road bikes.

FRONT SPRING

Place a cable tie around fork tube, push up to the seal. Lift up to take weight of the fork spring, have an assistant measure the difference, Ideal is 15mm-20mm for bikes under 210kg, 20mm-30mm bikes over 210kg. If the increase in fork spring pre-load has made the bike difficult to turn into corners consider raising the forks through the triple clamps (5mm at a time). Watch that the mudguard remains clear at all times under full compression, also when turned.

REAR SUSPENSION DAMPING CONTROL

Wind the rebound adjustment right in, then count out. Determine where the adjustment begins to work by pushing down on the rear of the bike and watching and feeling the way the suspension returns. Should be adjusted so that the suspension returns a little slower than when rebound adjustment is turned off. In a corner the bike should feel O/K all

the way around. Should not run wide under power. Options to prevent this are to adjust rear ride height (lift up), adjust spring pre-load on rear or by raising the front forks.

FRONT FORKS

The cable tie can be used to indicate that the forks are using their full amount of travel. If the forks are using all of their travel to the point of bottoming out, consider increasing the amount of fork oil in each leg, to cushion the forks when bottoming out, (adjust the amount of oil so that approx 20mm of travel is left at full compression). Adjust rebound damping so that forks return slightly slower than with no damping. If forks are still too slow consider changing to a lighter oil. Check fork action, when forks are compressed and released, the forks should respond quickly and settle without pogoing. If the bike feels like it is wallowing, then increase the rebound damping slightly. If there is resistance (fight back) on initial compression, this may indicate too much fork oil, the air pocket remaining is too small.

FINAL CHECK

Find the centre of the bike and push down, the suspension should compress and return at the same rate front and rear. Fine tune accordingly. Check the suspension by riding and make any adjustments one at a time. When it feels O/K keep adjusting until you feel that you have gone too far and then adjust back. Keep notes on the adjustments you have made. As the suspension wears or gets hot the rebound will decrease and the springs will sag.

COMPRESSION DAMPING IS OFTEN USED TO COMPENSATE FOR SPRINGS THAT ARE TOO SOFT.

3.4.2 ST Specific Setup

From Warren: "I did leave a few little bits out (from the above section) that do not apply. My bike is set up in this way, using these instructions. The front on mine is set on 17mm free-sag, 14 clicks out rebound and no added compression damping.

As I mentioned before you need a suspension that compresses fast, returns slightly slower than it compressed and does not pogo or bounce at the end of the return. My weight is around the 72-76 kg area.

As a little exercise, remove the compression and rebound damping on the forks, bounce and feel both compression and return speed, now add some rebound damping and bounce and feel again, now add some more rebound damping, bounce and feel again.

Although you have not touched the compression damping has anything you feel changed? Sometimes when you adjust one thing it also may affect another area! The new ST2 does not have this "problem" as the suspension units have been down graded from what we have. No rebound adjustment for one.

I hope you can understand all of this and can make good use of it."

Stock ST 4 suspension settings:

FRONT: Preload: 16 mm (Use 22mm socket); rebound damping: 11 clicks from full in; compression damping: 12 clicks from full in.

REAR: Preload: 165mm spring length (no position listed); rebound damping: 1 turn out from full in; compression damping: 1 turn out from full in.

Sport Rider (Feb. 2000) ST4 -

FRONT: Preload: 6 turns out; rebound damping: 10 clicks out from maximum; compression damping: 2 clicks out from maximum.

REAR: Preload: position 2 from full soft; rebound damping: .5 turn out; compression damping: .5 turn out.

Stock ST4s suspension settings:

FRONT: Preload: 16 mm (measured from top of 22mm nut to top of larger nut below, use 22mm socket to adjust). Rebound adjuster is located at the top of each fork (clockwise is full in and gives the most damping). Rebound damping: 11 clicks from full in.

Compression adjuster is located inside the bottom of the fork tubes (clockwise is full in and gives the most damping). Compression damping: 12 clicks from full in.

REAR: Preload adjuster is remotely located above the passenger footpeg. Preload: 149.5 mm spring length. Rebound adjuster is located at the base of the rear damper. Rebound damping: 14 clicks out from full in. (Counter-clockwise is full in when looking down at adjuster)

Note: The manual states that clockwise is full in but this assumes you are under the bike, looking up.

Compression adjuster is remotely located behind the right-rear body panel. Compression damping: 14 clicks out from full in. (clockwise is full in when looking at end of unit).

3.5 Suspension Corrective Actions

The following information comes from the Ducati web Site <http://www.ducati.com/>.

Here is a list of corrective actions: (the sequence of operations described below does not only concern hydraulic damping adjustment, but also includes other operations requiring the special skills of authorised engineers only)

The front wheel “bounces” or “patters” during the final part of braking:

1. If the front forks travel all the way to the end of their stroke (you can verify this by checking the position reached by a nylon clamp fixed to either stanchion), the spring should be replaced with a harder spring.
2. If the last part of the stroke is not completed, the oil level is too high (or expressed another way, the air volume (gap to the oil level) is insufficient).
3. If, however, the forks work by travelling to the end of their stroke, but performance is, nonetheless, good in corners, the oil level should be increased.
4. If, in corners, the steering feels light and riding generally feels unsafe, change the spring for a harder spring and leave the oil level unchanged.

The front wheel “bounces” (the so-called “pattering”) or “vibrates” when riding into corners, until the front brake lever is released or until power is transmitted to the rear wheel:

1. increase the spring preloading
2. replace the springs with harder springs
3. try decreasing the oil level
4. you may want to decrease the rear shock absorber spring preloading or reduce the rear end ride height (chassis set-up will form the object of the next paper)

The front wheel is unsteady and feels unsafe half-way through corners, between the end of the braking action and the beginning of throttle opening

1. increase rebound damping
2. this problem could also be caused by excessive rebound damping: try reducing it considerably
3. excessive compression damping: try slightly reducing it.

The front wheel loses grip riding out of corners

1. increase the rebound damping
2. excessive spring preloading: try reducing it
3. replace the rear shock absorber spring with a harder spring
4. raise the fork sleeves (or stanchions) through the top and bottom yokes to lower the front end ride height

The rear wheel has too little grip

1. if this problem becomes apparent in the early stages of throttle opening, it could be caused by excessive rear end ride height
2. excessive rear shock absorber spring preloading: decrease it
3. excessive compression damping: decrease it
4. another possible cause is excessive rebound damping, especially if you experience "bouncing" when travelling over bumps.

3.6 Battery removal

Many (all!) owners complain about the tedious process of removing the fairing just because you want to do some work on the battery.

Vincent gives us his secret to removing the battery without having to remove the fairing:

"I made a small modification on my ST2 to be able to remove the battery without removing more the lower right part of the fairing. Just drill a 25mm diameter hole in the horizontal part of the dark grey cover in the right upper part of the fairing. With such a hole, you're able to reach the + contact of the battery and remove it. This hole is fully invisible. You can then remove the battery, in less than five minutes."

3.7 Oil changes

Engine oil level can be checked through the sight glass on the right hand side of the motor. Oil level should be checked when the bike is warm, and the oil has had a chance to settle after the engine has stopped.

Owners have varying opinions on how often to change the oil on their bike (some change at 1500k, some at 5000k) - the general rule is that oil is cheap: Change it more frequently than the service intervals, and always use a new filter when you replace the oil.

Instructions from Mike:

"Remove the sump plug with the correct size allen key ?? 10mm. Remove and clean the mesh filter on the side of the engine. When everything has drained put 'em back on. When you refill take it really easy or you will overfill the sump (this is the only fiddly bit). When the oil is near the bottom of the sight glass - go and make a coffee and come back 10 minutes later - it will probably be higher. Before topping up to the brim, run the engine (provided the sight glass is, say half full), make another coffee, let it all settle. By now you will probably need a slash, then check the level again. I found more oil appeared from nowhere! I think you are probably getting the picture - take the last few ccs really slowly."

Many owners find that it's good practice to follow these few tips when changing oil:

- Lubricate the seal on the new filter with a smear of oil to aid hand tightening
- Fill the filter with oil prior to fitting, to assist oil flow when the bike is restarted
- Don't overfill - when adding oil, it takes time for the oil to settle in the sight glass. Add small amounts and wait. Patience is important when it comes to changing oil on these bikes!

The following story comes from Sean and is worth reading:

"Please help other learn from my mistake: how to turn a 30 minute job into 4 hours

Oil change time for my 2001 ST2 I search the web for 'better oil filters' and find recommendations for Per-Form. I order 4 (min quantity) and proceed to change the oil. Your numbers are correct 10 mm for the drain plug and 14 mm for both the primary filter cap and the primary filter. Take out the per-form filter, ohoh its ~ 19 mm longer than stock but no big deal the fairing touches but just barely so I finish the oil change put everything back together and heat the bike up to 170 when the filter starts to leak. This is odd since I'm a reasonably competent mechanic. I'm not sure how I screwed up an oil filter replacement. I tighten the filter up another 1/4 turn and it still leaks so I figure I have a bad filter or bad gasket. Take everything back out and re do the job with another brand new per-form filter (# DUC-1) and get the same result. I drop everything again and inspect the per-form against stock. The per-form is indeed longer but in addition the distance from the plane of the gasket face down to the threads that catch the filter stud is 5 mm the Ducati stock filter is 2mm! After a 2 hour round trip to my dealer for stock filters I finished the job in 15 minutes with no problems. I'm not sure why the per-form leak as the filter still catches a thread and a half on the stud but they do.

Long story short, please let other ST2 owners know to stick with the Ducati stock oil filter

I'm sending my per-forms back to see if they will refund my money"

3.8 Handy Service bits

3.8.1 Bolt Sizes

What	Size	Comment
Oil screen access bolt	14mm allen for the cap, and the screen itself is threaded into the block, and requires the same size allen (14mm) to remove it.	From Sue. !) To use Sue's words: "These suckers were on there TIGHT".
Front axle nut size	28mm	Front axle needs to be take out to remove the font wheel.

3.8.2 Cam Belts

Later style cam belts are reinforced with Kevlar instead of fibreglass. The Kevlar reinforced belts can be identified by the red lettering on them. Other color lettering indicates and older belt.

3.8.3 Other hints

- Beware of some after market oil filters, as they may not may not fit if longer than stock Ducati filter. They hit the fairing. Don't believe me? [Read this section about oil changes.](#)
- Well nuts are available from Fast by Ferracci in 4x1, 5x1 and 6x1

3.9 ECU Mixture Adjustment

Some owners like to fiddle with the mixture on their bikes, preferring them to run slightly richer. As with everything in the FAQ, there's no recommendation on whether you do this or not - it's your call. If in doubt, don't fix something which works, or seek advice from qualified people.

There's a trimmer pot on the ECU which controls the mixture. Owners who have changed the mixture report that turning Counter Clockwise will richen, and clockwise will lean out the mixture.

There's a great deal of information on FIM's website - check it out before changing anything.

<http://www.fuelinmoto.com.au/>

Some feedback from List Members (names deliberately withheld):

“From my experience, 45 degrees is a major change to the trim, 90 degrees being enough to make the difference between a sweet running engine, and one that is either too lean or too rich to run properly at all. CCW for rich.”

“I was always taught to turn the bike off and wait until you hear the click from the switch in the CPU (5-30 sec.) or you can cook the CPU. Don't know validity of this but that is what they taught me when I worked at the shop. Always use a pot trim screwdriver also so you don't ground out anything. “

“I have been playing with the setting on mine and have gone 90deg from stock setting and back. More grunt and less mileage when 90deg more is added to richen things up and the bike will run 5-10F cooler with the richer settings. “

3.10 Steering Head Bearings

The following tip on how to check your Steering head Bearings comes from John (aka Takka):

“If you put your bike onto the centre stand and have someone put their weight on the rear to lift the front wheel. You then grab the bottom of the front legs & pull backwards & forward. If there is any movement or you can feel a clonk in the forks then you need to adjust the head bearing. You will need to loosen the cap head bolts holding the lower triple tree to the fork & loosen the caphead bolt that locks the cap you describe in your post. You will then need a tool that will either fit neatly into the slot on the same cap or the tool that fits the circle of holes, you then pre load the bearing by tightening the cap clockwise. If it feels real bad you may want to remove the steering head yoke & check the bearings. There is a torque value for that in the w/shop manual it's 30nm. Do not over tighten the preload otherwise the bike will not handle.”

From Dave Harhay:

“I just finished inspecting the 03ST4s steering head bearings. Like everyone says... there's not a lot of grease on them. FYI there is a seal, so the chance of water and crud getting into the bearings is small. I am not sure of the other models however. I put in a liberal amount and retorqued the special nut.”

3.11 Thermostat

Checking the thermostat, from John Dean (in response to an overheating problem reported by a member):

“First, it's a bypassing thermostat exactly like the one used in almost all Italian cars. It's hooked up to the hoses in the cooling system, lying on the left side of the engine just in front of the engine case. What it looks like is an aluminium casting with three pipes coming out of it. The pipes are hooked up to the hoses.

The way it works is that when cold, the water pump circulates fluid through the bypass section, without sending anything to the radiator. Thus, the coolant circulates all the time. When warm, the valve opens to allow coolant to flow through the radiator, and closes the bypass.

To check the system, you really have to have the fairings off.

First, take off the radiator cap to check the fluid level. Look in the radiator -- the fluid should be right up to the top. Fill the system, if necessary. The plastic bottle should drain when you remove the radiator cap. If it does not, then the little tube from the bottle to the radiator is blocked.

Start the engine from cold, and feel the water connection on the side of the engine (that's the water pump), and the thermostat. They should almost immediately start to feel slightly warm. This means that the bypass is actually circulating. As the engine warms up, the engine, and all of the small hoses connecting the heads to the water pump, should start to get hot. The radiator may begin to get warm too. At some point, the thermostat will open and suddenly the radiator will get really hot. I don't know the exact opening temperature, but it's probably about 160 to 180 degrees F.

If you have a stock EPROM chip, the fan should come on at about 220 F, and shut off at about 200 F. There are two identical temperature sensors in the system -- one for the temperature gauge and one for the fuel injection. The rear one (if I remember right) is for the fuel injection. This temperature information is also used to control the fan, through the computer and a fan relay beneath the seat. It is not necessary to use an expensive tester to check the temperature sensors, since they are simply variable resistors. Also, since they are the same, you can swap them if that helps you in testing.

Here are the resistance values as I measured them, for these sensors (I have not found a specification for this):

60 F -> 3.1 K Ohms

130 F -> 800 Ohms

220 F -> 180 Ohms

If you don't have proper circulation, the most likely cause would be an improperly filled system.

This system is easy to fill, because there's very little to it and it's supposed to be self bleeding. To help things along, I would bleed it anyway. Remove the upper hose from the radiator, and pour coolant into the hose to fill the engine. It will flow down through both heads to the water pump. When you can't get any more fluid into the hose, put it back on loosely, and fill the radiator. Bleed the radiator by pulling the upper hose back until fluid runs out.

The whole system, including the reservoir bottle, takes about a gallon. I'd use a high-quality antifreeze intended for motorcycles.

I hope this is helpful. If the system is filled properly and there is no circulation, then I would be looking into the water pump. "

3.12 Getting it up

I've included this section on putting your ST up on the centre stand within the maintenance section of the FAQ, because having your bike up on the centre stand is a pre-requisite to almost everything we do in maintenance.

The following excellent description comes from Patrick:

I've 'learned' how to center stand a pre 2000 Gold Wing. At almost 800 pounds it felt almost impossible. My problem was I was using brute force and not technique. My father showed me how to do it correctly much to my amazement. Once I got the technique down it was very easy. The pull up and step down method works well but you can refine it.

I do the following. Left hand over hand grip on left handlebar grip, right hand over hand grip on center stand lift handle, right foot pushes center stand down until solid and even ground contact is made. From here I pivot my body and straighten my feet, hips and shoulders as much as possible to be in line with the bike. I end up facing about 15 degree to the right to the direction the bike is pointed in. That exhaust is HOT otherwise I'd be exactly parallel with the line of the bike. Feet, hips and shoulders should be in a straight line. Knees bent, back straight, right arm tensed with a slight bend and heels firmly on the ground. Get as close to the bike chassis as you can being mindful of that left exhaust pipe. Then you push down on the stand like your stomping on cars brakes and straighten you knees while slightly stretching your back straight up. At first do a rocking motion at a steady cadence using the center stand as the fulcrum. Typical 1-2-& THREE motion with the three being the final lift. Ensure you keep strong force down on that center stand peddle with your right foot.

If I'm feeling manly and there are folks looking at me I skip the rocking motion. I'm 6'4" and 240 but I don't like straining myself in vain. You can do this easily after a bit of practice and you will be able to control the full lock of the center stand so there isn't an ugly jerk or 'clunk' noise when the stand gets settled. My girlfriend has learned how to do this as well. She is 5'6" 115 lbs (soaking wet, holding a brick on a full stomach) and she can center it after a few rocking motions. So it's mostly technique and not strength. Just my \$0.02 though.

3.13 Wheel Alignment

Ok – in case you don't realise, if the front and rear wheels are not perfectly aligned "straight", then your handling will suck (that's a technical term....). The following tips provided by fellow listers:

From John Dean:

"I do have a good method for wheel alignment, and I got it if from a website. Unfortunately, I'm not at home and don't have access to the link. As soon as I get a chance I'll post it to the list, unless someone else posts the same link. That might not be for a day or so.

Basically, the method is similar to the way you do a race car, by establishing a perimeter using string.

It's very easy to do, and it requires no special tools other than some string, a ruler, and a pencil. Here's the procedure. I hope I'm a good enough tech writer to make it understandable without graphics.

First, you have to have a way to keep the bike upright without using the stand. What I do for that is to run tie-downs from the frame under the seat. The tie downs go straight out to the side, to rings attached to the wall. The bike does not have to be standing up perfectly straight, but it has to be on its wheels.

Next, tape the string to the front of the front tire, wrap it around the back of the rear tire, and back to the front again. Make it as high on the tire as you can, without fouling anything along the side of the bike. Tape it at the rear also, so it won't fall off. It should be level, but you don't have to get carried away about that.

The back tire is wider than the front, so there will be space between the string and the rear of the front tire. Center the steering by turning the handlebars until the distance between the string and the rear of the front tire is equal on both sides. Now, be careful not to knock into the bike because a very slight movement of the steering will make your adjustments invalid.

Make a spacer by cutting a pencil to a length exactly (more or less) the width of the rear tire. Place it between the left and right runs of the string, just behind the front tire.

Now, if the back tire is in line, you'll have a rectangular perimeter described by the string, from the pencil to the rear of the back tire. The string will touch the front of the back tire on both sides. If the back wheel is out of line (which it probably is), there will be space between the string and the front of the back tire, on one side.

Turn the adjusters while sighting along the string. You'll see the tire come into line. Tighten all of the nuts, and then re-center the steering and recheck the alignment.

This doesn't check the vertical alignment of the wheels, of course. There is a similar procedure for that, but I don't have it in my head. As long as your bike has never been seriously crashed, you shouldn't need to worry about that.

From Fariborz:

"Turn both of the nuts on the axle so that one of the six sides, closest to the swing arm pivot point is vertical to the ground. Using a tape measure, measure from this side to the rear of the mounting bolt of the swing arm on both sides. These two dimensions have to be exactly the same. You can do all of this alone by putting the bike on the center stand. We did this on my bike when we changed the tires during the wrench session. Worked great and was very simple.

3.14 Putting the Rear Wheel back in

Why have a section on re-installing your rear wheel? Because if you've done it, you will realise that Ducati have put a space in which is designed to fall out in such a way that it's not always obvious how it goes back in!

Ron provides the tips:

“The dome shaped spacer does go on the sprocket side of the rear wheel. The domed side goes against the wheel and the flat side against the swingarm.

I've always found it easier to slip the chain over the sprocket before trying to align the rear wheel, caliper and axle, then installing the axle. Also, it's a very good idea to clean the axle before reinstalling and coat it with a very thin, very light, layer of grease. This will make reassembly much easier and also helps prevent corrosion, which mine started to do before I replaced the original tire.

I've always followed the shop manual specs on chain tension. It's recommended for 30mm of free play on the bottom run of chain under the swingarm when checked at the mid way point between the counter shaft and rear axle. When adjusting chain tension I've always measured rear axle alignment by measuring the rear axle distance to the swingarm pivot, and not by the marks on the swingarm. I usually go by the center point of the swingarm pivot to the front or rear of the axle.

The torque specs on the rear axle nut call for 83Nm. The chain tensioner bolt calls for 8 Nm. “

3.15 Checking belt tension

There are some hints on available on checking the belt tension on ST2 without having the special tool. Please take these as provided – and with all things on this page, you undertake them at your own risk.

James tells us:

“The 5mm allen wrench trick is for the st2 only.

I am not sure if it is correct, but this is the method my dealer stated they use for the st4 (not sure if ST4S is the same):

When pushing "outward" on the belt between the cams with your thumb with moderate pressure, the edge of the belt should almost touch the outer edge of the flange where the belt cover meets. I was told that is is ok if the belt slightly touches the inside of the cover from time to time. I was told it is better to run them too loose rather than too tight.

I hope this makes sense. It is a difficult to explain without a picture, and it is difficult gauge "moderate" pressure.

I checked the belt tension on my bike at 600 miles with this method, and it was very close. At DRC, the instructor for the valve adjustment class used a gauge to set the tension for the belts, and I tested this method on the belts afterward. I found the result to be close.

Please take this method with a grain of salt. If in doubt, I would let the dealer set the tension. Broken belts = \$\$\$\$ \$”

Bill found a site which might help:

<http://www.geocities.com/MotorCity/Track/2228/desmo.htm>

3.16 Spare parts

Spare parts catalogs are available online at the Ducati website (provided as PDFs)

<http://www.ducati.com/bikes/catalogs.jhtml>

3.17 Valve adjustment

Some owners like to save themselves a bundle of money and do their own valve adjustments on their ST2. Be prepared to spend quite some time doing the job. The most important thing to remember BEFORE you start is that you will need some shims, and you will not know what size until after you strip your bike down.

If you are serious, a workshop manual makes a very good investment.

A couple of resources are available to assist:

A very clear explanation of what's involved can be found here: <http://www.ducatisuite.com/valves.html>

An instructional video available from ProItalia: <http://www.proitalia.com>

Another good online guide is available at <http://www.ducatech.com/2v/maint/adjust/index.html>

Some pages from a magazine can be found at <http://www.geocities.com/MotorCity/Track/2228/desmo.htm>

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4. Characteristics

4.1 Riding Characteristics

One of the things that becomes apparent very quickly on riding an ST2 (same for ST4?) is that there is a certain rev range that the bike is happiest to ride at. Trying to accelerate from under about 3,000 rpm causes some vibrations in the bike. Trying the same thing at 4,000 rpm provides smooth, even power all the way up to the maximum.

4.2 Performance

Performance is one of those very subjective, much talked about, and often useless subjects. Performance is sometimes measured in horsepower (either at the engine or rear wheel), or by boasting about the bike's top speed. Strangely enough, Ducati actually publish the expected top speed of their bikes.... Presumably so that you know how fast you'll be able to go if you travel on one of the German autobahns!

4.2.1 Standard Bikes

Quoted top speed (according to Ducati) is 225 k/h for an ST2, and 245 k/h for an ST4.

Quoted top speed for an ST4s is 255 Km/h (158 mph).

One list member, who has ridden an ST2 and Yamaha R6, indicates that although the ST2 will not accelerate as fast as the R6 (no surprise), it's cornering speed is equivalent.

4.2.2 Modified Bikes

Matt at SLMS <http://www.utahducati.com/> raised an ST2 to 100 HP with hi comp pistons and different cams (may have been 907ie cams) Stock for an ST2 is about 73 rear wheel HP.

About 5HP can be gained by taking off the airbox lid, but bike sounds like a vacuum cleaner.

Many people use parts by <http://nicholsmfg.com/index.html> particularly engine mount bolts and lightened flywheel

Remember that changing the air intake or exhaust may require a new chip to prevent fuel mixture problems.

4.3 Speedo Accuracy

A vehicle speedometer can never be perfectly accurate: variations in temperature, tread depth, tyre growth and a hundred other factors combine to give an indication of your speed, not a true reading.

Various comments from the ST2 Owners Group indicate variations with speedos when compared to some highway measuring devices, and GPS systems, however I think most of these would fall within an acceptable error range. No wildly inaccurate speedos have been reported..... except for perhaps for what seems to be a common thread of grossly exaggerated readings provided by our law enforcement friends!

4.4 Fuel Consumption

4.4.1 Fuel Tank Size

There's always a lot of debate about the actual capacity of motorcycle fuel tanks. The specifications of the ST2/ST4 tank is 21 litres. Reserve is claimed to be 4 litres, although the specifications published for the ST4s claim a reserve of 6 litres. There is no manual fuel tap. An lamp illuminates on the instrument cluster when fuel is low – about 6 litres remaining in the tank, which corresponds to one bar left on the fuel gauge.

US gals is 5.5 with 1/6 gal reserve. The light comes on when level drops to 1.6 gal remaining (tested!)

4.4.2 Observed consumption

A survey on the ST2 Owners List reported that, on average, most owners achieve 45 miles per gallon on a regular basis. Variations are reported both above, and below that figure, and obviously are affected by things such as tyre pressure, riding style, etc.

Chip and potentiometer (pot) settings also will have an impact on mileage

Survey results are (from 47 replies):

45+ mpg	17%
40 – 45 mpg	47%
35 – 40 mpg	25.5%
30 – 35 mpg	10.5%

4.4.3 Type of fuel to use

Recommended Octane Rating (RON) of fuel is 95-98. In the US and Australia, this means premium grade fuel. Some owners have experimented with additives, however I've not had time to research the results!

4.5 Stands

Some later ST models have a switch connected to the side stand which will cut the engine if the stand is lowered. For those that like to warm their bike up on the stand, this is a pain in the rear. For some, we just manage to learn to put the bike on the centre stand as much as we can. For others, there is a kit available from [Evoluzione](#) that converts the switch to kill the engine if the sidestand is down and the bike is in gear. This allows the engine to run while the sidestand is down.

One of the things you should be aware of if you are planning some serious “scratching” is that the lean angle you have available on your ST varies depending on whether the pipes are in the raised or lowered position. One of the features of the ST is the integrated panniers which are available. Fitting of these panniers involves a frame for each pannier bolted to the side of the bike. In order to clear the pannier, the pipe on each side of the bike is moved to a lower position.

With the pipe in the lower position, the centre stand comes to rest when retracted against the pipe. With the pipe in the higher position, the stand rests against the swingarm frame – about an inch higher.

4.6 Fairings

Fairings on the ST are regarded as being functional as well as good looking. The main disadvantage comes when you want to service items on the bike – the fairings can be a bit time consuming to remove and replace. Some service shops will provide you with a discount on the service if you remove and replace the fairings yourself.

4.6.1 Removal

The fairing panels are rubber mounted on “Wellnuts”, which can deteriorate over a period of a few years if the fairings are removed and refitted often. The Wellnuts have an allen key head, which is not quick to remove and replace as a standard screw / screwdriver combination would be.

Don't over tighten when refitting! There are replacement fasteners available if you feel the need to remove and replace your fairings frequently. Some riders have a cheaper, lighter set of panels for use on track days. See the modifications section for information on the replacement fasteners.

Owners often complain about the difficulty involved in replacing the headlight fairing - in particular the effort involved in lining the thing up, and the need to flex the assembly to get things to line up. Justin offers some advice:

“I will attempt to describe the technique I use, but no guarantee that you can understand the way I describe it.. : >)

Make sure your indicator wires are out of the way - I pull mine across to the centre of the bike first.

With the top fairing in your hands, standing in front of the bike, facing it, tilt the rear edge down 90degrees, and lower it down over the metal mirror supports. As the rear edge of the fairing comes down to meet the top edge of the side panels, rotate it 90degrees towards the rear as you continue to lower it. Once it is down to the correct level, it will still be 3inches in front of the headlight. Looking at the lower edge of the headlight, slide the panel rearwards, so that the top edge of the curve that fits under the headlight slides in under the metal intake vent under the headlight.

No flexing or distorting of the top panel is required to fit it, but a little bit of dexterity is. The holes in the fairing panel should lineup directly with the metal supports, and hence the holes for the mirrors as well. If they don't, has your bike been down the road, or off the stand at all? This can displace the mounts, which are easily bent back into position.

Mine doesn't lineup completely cleanly over the gauges - there doesn't appear to be a direct fit, hence the foam I guess.”

4.6.1.1 Windscreen Removal

Sometimes you might just want to remove and replace your windscreen. Some owners have said that they will remove the complete front so they can line up everything properly for reassemble. Ian Ellis provides a tip: **“I do not remove the whole upper and inner dash. The screen comes out fine. However, unless you replace the 4 front screws with slightly longer ones you will not be able to get the screws into the well nuts, so you will have to remove the upper dash panels to put it back in.”**

4.6.1.2 Rear panel removal

Provided by Kman:

"1. Remove seat.

2. Remove the 4mm allen head bolt that holds the rear panel to the metal grab rail piece, near the rear seat latch.

3. Remove the center bolt from the panel. This is an 8mm hex head bolt. use a socket or nut driver and just reach from behind.. The bolt head is approximately right in the center of the two foot peg bracket bolts, but again get it from behind.

4. No need to take off the forward "holder" as the front end of the panel will just slip from under it.

5. To release the rear end is a bit trickier. You can't just pull the panel and tab straight up because the panel will hit the grab rail. So you need to kind of rotate it forward and downward at the same time. You'll see after you manipulate it a bit. The tab is really pretty short and thick so you shouldn't worry about breaking it off.

6. To put it back on, squirt a little WD-40 or similar on the rubber gasket so that the tab slides back in easier. Put the tab in first then line up the front "holder", then screw in the middle bolt, then the rear screw."

4.6.2 Fasteners

Alternate fasteners make the job of fairing removal easier and quicker. Dzus fasteners are used by a few of the liSTers. Thanks to Brad for the following feedback on Dzus Fasteners (prices quoted are in USD):

"In regards to Dzus fasteners, I have them on my '01 St4. Very easy installation. Look great! Rather pricey. I bought the LP dzus fasteners for the backing plates. LP sells them as a set (pin and plate) while DP sells them (pins & plates) separately. Total cost was \$220.76 for the LP set & DP pins only (21 sets/pins). This gives me 3 spare sets and a complete set of spare pins.

The LP pins are larger than the DP and IMHO don't look right but will definitely work in a crunch. Now I only have 4 bolts to remove in order to remove fairing. I will be replacing the "side bolts" (The one that goes into the rubber 'nut') with a billet rod piece that will accept dzus for my ST4S. The other bolts are on the bottom of the fairing. I don't think that I will replace those because they are out of view and I think might be a little more stable with bolts over pins (no data on this just a feeling).

It does save a considerable amount of time removing and replacing the plastic so over a couple of services I think that it will pay for itself in labor costs. With all the times that I have taken the plastic off I know that they have paid for themselves already many times over.

Chris K will be posting photos of my bike soon."

To see an excellent write up for Dzus installation (with pictures), check out Mike West's info at http://groups.yahoo.com/group/st2_owners/files/Dzus/st2%20fairing%2001b.htm. You need to be a Yahoogroups member to view it.

4.7 The clutch

4.7.1 Why do Ducati use a dry clutch?

The issue of the Ducati clutch is one, which is often discussed amongst owners. The following article is extracted from the technical section of the Ducati web site (www.ducati.com), and I thought it was worth reproducing here.

"The clutch is an essentially important part in maximising engine power. For motorcycling applications, "oil bath multiple disc" clutches are generally used. The (driven and driving) discs work immersed in the engine oil,

to ensure a smooth, progressive action (ie. The transmission of movement by friction), highly efficient heat dissipation and noise reduction. This system is, in practice, a guarantee of reliable operation.

This is the reason why it is so common in standard models of sport bikes or other bikes. As far as racing engines are concerned, the opposite considerations apply: power is so high that it is necessary to discharge it to the ground; additionally, simple, although extremely high-tech, design is of the essence here. Oil, carried and “sloshed about” by the disc pack, entails a loss of power (because it restrains movement by increasing inertia); additionally, its “smoothing” effect is absolutely unnecessary in the brutal riding of race bikes.

All this explains why “dry” clutches are universally used in racing bikes: they have slashed instead of solid covers (to reduce weight and allow cooling), and their typical noise is music to bikers’ ears.

Thanks to the evolution of materials and technology, it is now possible to use dry clutches in the “sportier” standard models as well (this definition actually applies to most bikes in the Ducati range), without affecting reliability and wear strength in any way: this is only made possible thanks to the state-of-the-art design and construction materials used.”

4.7.2 Advice on removing the clutch

Quite often owners will remove the clutch plates to de-glaze them with some very fine grade emery paper or similar. Some advice on removal and refitting comes from “Takka”:

“When loosening the clutch cap screws, undo them evenly ½ - 1 turn at a time until you have them all out. This will stop stress being put on any one bolt.

There is a reference mark on the pressure plate, which must line up with a specific stud. Do not mix up the friction plates and steel plates, and try and refit them as you removed them.”

4.8 Security

It seems as though there is an optional security system on the new ST4s. More information to be provided when the bike is more widely available. According to one List member, a demo rider couldn’t start the bike after another rider had ridden it and left the key in. The key was pulled out and re-inserted, and bike started first go. The key looks different to the standard key (red versus black), and may contain some electronics.

4.8.1 Spare Keys

The following useful information comes from Mark Willburger:

Ignition key = Silca kw14 or Silca kw15bp;

Hard bag key = Silca bt2 or ilco x132 (Volkswagen gas cap key);

4.8.2 The Immobiliser

4.8.2.1 Immobiliser Overview

From: Fariborz Rostami

“The VERY first key that is ever used on the bike after a BRAND NEW ECU is mounted on the bike, becomes the MASTER key.

All the keys have an ID tag that can be read by the immobiliser antenna which surrounds the ignition key. The only reason the Master key is red is for the owner’s sake. Any key can be a master key, if it is used as the FIRST key.

There is no --PUBLISHED-- way to erase the master key information from the ECU’s permanent memory. As you

can imagine that would defeat the whole idea of having an immobiliser!

So if you do not have your master key or the little card that has the master key code written on it, you cannot reprogram another key. Since you do not have the master key and the program card, you are kind of stuck. So do not lose your one and only key.

Buying a brand new ECU is your only choice if you lose your last key. They are not cheap. The FIM replacement chip does not use the immobiliser at all so if you switch your ECU to FIM, your immobiliser is inactive and you can make as many keys as you want. Buying a used stock ECU from eBay is only good if you get the RED master key with it; otherwise you can only use it as a door stop.”

4.8.2.2 Red Key, Black Key, and your Key Code Card

From: Mike Peppard:

“Its been a while since I went over the Immobiliser functions, but I believe if you lose all your keys you will need a new immobiliser and ECU.

The ECU only knows the code from the immobilizer that is permanently set the first time the ECU talks to the immobilizer when the very first key (red) is used in the system and they are mated together. The very first time that every thing is powered up the immobilizer is set to the red key and the ECU is set to the immobilizer with the code generated by the red key, which is on the card that comes with the red key. Any new key that is programmed into the immobilizer using the red key, will kick out the correct code to the ECU allowing the bike to start.

It's the immobilizer that remembers all the keys that are programmed using the red key not the ECU. Even with the key code [printed on a plastic card included with the bike] I don't believe you can program a new key into the system. It will only allow you to start your bike incase of an emergency.

There is only one guy at Marelli in Italy that I know that can reset the security code on a ECU, so you're out of luck there.

If buying a used ECU you will need the immobilizer and red key that was used with it too. You can then remove the RF chip out of the red key and put into any key that works with your lock to become your new red key.

On the bikes with the new digital dashes (5A ECU) [2004 and later model years] the dash as you said, has the immobilizer function built into it, there is no longer a separate immobilizer box. This means that the ECU is now mated to the dash. So losing keys just got a lot more expensive. If buying used parts you would need the red key, dash and ECU as a matched set.

To answer someone else's question, the communication between the immobilizer and ECU is encrypted serial. This is that it is always changing, in that you could not monitor and capture the signal coming out of the immobilizer and play it back electronically to try and fool the ECU.”

4.8.2.3 Programming new keys

From: Mike Peppard:

To get the immobilizer to learn new keys:

- Red key=> turn it on, turn it off.
- #1 black key=> turn it on, turn it off.
- #2 black key => turn it on, turn it off.
- ... continue for each key needed.

This must be completed in under 20 seconds.

4.9 What is Desmo anyway?

This section comes from the Ducati.com website, and is titled “Desmo for Dummies”. One of the excellent technical articles on the site, it’s worth reproducing here. If you’d like to see the full thing (complete with pictures), go to www.ducati.com in the Tech Café.

As is known, in four-stroke reciprocating engines, active fluid changing (air-fuel fresh mixture followed by combustion gases) within the cylinder is carried out via the intake and exhaust valves.

The characteristic and universally used mushroom or “poppet” valves (used in every 4-stroke engine) will open during their down-stroke and close during their up-stroke, until they make contact with their seats in the cylinder head.

Normally, the valve is operated by a “cam” system, which controls valve opening (down-stroke), while the valve “return”, ie. The closing movement (up-stroke) is the result of the action of a spring.

The word “desmodromic” is derived from two Greek roots, *desmos* (controlled, linked) and *dromos* (course, track). It refers to the exclusive valve control system used in Ducati engines: both valve movements (opening and closing) are “operated”. We usually say that action on the valve is “positive” in both cases, in other words, both strokes are “controlled”.

In mechanical terms, the word desmodromic is used to refer to mechanisms that have different controls for their actuation in different directions.

Here are a few clarifying examples:

Imagine a saw cutting a tree trunk: the act of pushing and pulling the saw is a desmodromic action.

By contrast, the movement of a door handle is not controlled by a desmodromic mechanism: this motion is only controlled in one (opening) direction, while the return is automatically obtained via a spring, in a less controlled manner.

And finally, an example for bikers: you must know the difference between a “single-pull” and a “push-pull” throttle cable (desmodromic) twist grip.

The current Ducati desmodromic system, beating under your tank, can have two or four valves:

Family	Desmo due (two)	Desmo quattro (four)
Superbike	-	All
SuperSport	All	-
Monster	400 600 750 900	S4
SportTouring	ST2	ST4 ST4S

The “closing” and “opening” definitions applied to rocker arms and cams are basically not correct, because each of them participates in both types of movement.

Have you ever seen a stripped Ducati head and observed the presence of springs? Don’t wince: the system is, indeed, desmodromic, the springs are only necessary to take up the closure system slack.

[Click here for a picture of the 4 valve system](#)

[Click here for a picture of the 2 valve system](#)

**The full story (“Desmo for Dummies”) can be found at:
[Desmo for Dummies at www.ducati.com](http://www.ducati.com)**

WHY DESMO?

What pushed “ingegner” Fabio Taglioni, and everybody else at Ducati, to persevere with the desmo system?

In an interview of 1989, Taglioni himself explained that, in mechanics (which means, in real life) there is not ONE best solution in absolute terms. The secret of success is to develop one’s intuition with devotion, logic and ingeniousness.

“...it was just by doing calculations that I had to conclude, at the end of a series of logically connected, very clear engineering considerations, that it was necessary to eliminate the spring preloading!”

Taglioni knew that it would be a road bristling with obstacles connected with designing and manufacturing, but he wanted to leave behind the two traditional drawbacks of a spring system:

- heavy spring loading, which meant more engine work (and the resulting power loss)
- “valve bounce” at high RPM.

In other words:

To obtain good results with a spring system, it is necessary to find a compromise between heavier spring loading requirements (possibility to turn at high RPM, while preventing valve bounce) and lighter spring loading requirements (loss control, loss being the amount of work necessary to open the valves against the spring loading: it should be remembered that the camshaft is driven by the engine; and smaller sizing of the parts involved, proportional to the spring loading).

These problems are all solved by a desmodromic system: smoothness (and consequently, decreased losses) at low RPM and reliability at high RPM (without valve bounce) are obtained.

Ducati has consistently used its desmodromic system ever since 1956. It is the only manufacturer in the world to have applied it to anything from standard production bikes to Superbike glory: the achieved standard of excellence mirrors Ducati corporate technology.

4.10 Engine Temperatures

Many owners new to the ST range of Dukes get concerned about the apparently very high temperatures experienced while riding the bike in heavy traffic conditions.

As an example, one owner (of a brand new ST4) reported that while the outside temperature was 84F (29C), the engine temperature was around 174F (79C). In traffic, the temperature went up to 226F (108C).

It’s not unusual for bikes to show a very high reading. Roger provides an example on his ST2:

“The temp thing is OK. My 2001 ST2 often goes up to as much as 105C (221F) in town riding then the fan kicks in and it comes back down again. It is really hot riding in leathers on a hot day with a hot engine in towns isn’t it? My previous Duc, a 907IE Paso, also did the “heat thing” with no problems at all. On open roads, even short ones, the temp will come back down again, the ST2 cruises at about 69/70C (158F).”

The manual for my 2001 ST2 indicates that the maximum temperature is 120C (248F). If this temperature is exceeded, then the temperature indicator will start blinking.

A couple of owners have made a simple (apparently) mod to their bikes to force the fan to kick in at a lower temperature. If I get some details, I’ll post them here.

4.11 Panel protection

Clear tank guard (back and sides) to let those pretty colours shine through is available from: <http://www.pacificautotrim.com/>

4.12 Other Characteristics

4.12.1 Sight glass on the left of the motor

Sometimes newcomers will be confused about what appears to be a second sight glass on the left side of the motor, higher up than the glass on the right. The right side glass indicates the oil level. The left glass is a small window to allow tuners to see the timing marks on the motor. Don't use the left hand sight glass for oil!

4.12.2 The "Choke" lever

Actually, the "Choke" on the ST is not really a choke - just a fast idler.

Justin has probably summed this up as well as anything I've read:

"What you have is a 'fast idle lever', and not a choke. The lever on your left handlebar simply operates a cable, which acts on a 'cam' on the throttle linkage, which opens the throttle butterflies very slightly - in fact only about 2 degrees at most.

Any cold enrichening of the fuel circuit is carried out by the ECU based on the signal sent by the temp sensors. "

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5. Common problems, symptoms and remedies

Part of the "experience", or "charm" of owning a Ducati is that they can (and do) have the occasional problem. There are a few known problems, which affect specific models. These are shown briefly in the table below, and discussed in more detail later on.

This is not an exhaustive list, nor does the list imply that you will ever experience any or all of these problems, and some owners might report a "once off" type of problem which is peculiar to their bike. The list below consists of generally known and accepted problems.

Items in the table below are in no particular order, and for any given bike, you may not experience any of them. If you experience all of them, then you are the world's unluckiest owner!

Fault	Symptoms	Models Affected
Regulator Problems	Unsteady voltage Frequent flat battery	98 ST2
Clutch Slave Cylinder	Fluid leak / discolouration Difficult to find neutral, or shift gear. Excessive free play	
Clutch Groan	Loud groaning noise when engaging the clutch	
Rear Engine Bolt	Frame Cracking, bolt breaking	
Clutch Wear	Noise from the clutch - clunks, groans, etc.	
Fogging headlight	Cloudy lens, condensation on inside of headlight	

Loose alternator nut	Clutch Noise Vibration through the handlebars	
Chain Tensioner Warning		
Fuel pump relay	Bike won't go (really?) No fuel pump noise when ignition is turned on	
Counter shaft sprocket retainer clip		Pre 2000
Help! My bike won't start!	Errr..... bike won't start?	
Sluggish Starting	Bike kicks over slowly before starting	
916 Rocker arm wear	Poor performance, engine running badly, timing problems, etc.	ST4
That annoying rattle	That annoying rattle	
Spongy brake lever	Spongy Brake lever	
Front brake lever hits fairing	On full left steering lock, the front brake lever hits the fairing	
Lack of freeplay in the front brake lever	Lack of freeplay in front brake lever - perhaps after a service, or some brake work, front brake seems to be locked partially on (yikes!)	
Battery light comes on intermittently	Battery light comes on occasionally	ST's with a battery light
Temperature Problems	Temperature too high	
Rear brake line warning	Potential to wear through by rubbing against the carrier	ST2 only?
Spluttering and Stalling	Your bike misfires, splutters, and sometime stalls. Could it be....	
Cylinder Base Gasket Leak	You notice oil coming from the base of the rear cylinder	ST4
Exhaust popping and /or occasional backfire	Technical term here is exhaust farting.....	All
Bike runs poorly, won't rev over about 5000 rpm	Bike runs poorly, won't rev over about 5000 rpm	All
Rusty Steering Head Bearings	Rusty steering head bearings	All

5.1 Regulator

A few owners have reported electrical problems with their ST (Electrical problems on a Ducati? Oh no....!). Many of the problems are related to loose connections, or an occasional faulty regulator. Another theory is that the older regulators are not able to handle the heat of the newer items, and being buried inside the fairing, there's no airflow - the result being cooked (or partially cooked = flaky) regulators.

Older ST models have a battery light which will shine if there are problems. If your bike has problems with a constant flat battery, but the battery seems ok, or you have other gremlins... check the regulator.

The following tip comes from AJ: "If you have meter, try measuring the voltage when you ride, it should read something around 12.5-13 on idle and <1500rpm, then above 2000rpm it should settle around 14.1-14.4. If the voltage looks flaky then you should look at the regulator."

The following hint comes from Chris Kirk:

"Did a bit of hitchhiking after the ST2 wouldn't re-fire when I stopped to clean my visor after motoring through a brief but fierce hailstorm. Thought the regulator was cooked since it was showing no output so Steve @ SLMS is sending me a replacement. When doing some R&M while the fairings were off I did a thorough check of the

regulator wiring & found corrosion had fried the internals of one of the two plug in regulator connectors to the alternator and a wire that looked connected in fact was not. Last night I hard wired the three yellow wires between the alternator/stator with soldered connections and protected the connections heat shrieked insulator wraps. The output is now marginally normal with 13.88v @ 3K

So next time you guys have the fairings off, I'd suggest it might be worthwhile checking & cleaning the alternator/stator to regulator connections. A little dielectric grease on hand wouldn't hurt."

The regulator problem seems to be most prevalent on the 98 model ST2. Some owners have had the regulator replaced a number of times. An alternate to the standard regulator is the item by "Electrex". Some work will be required to fit the non-standard item, as the mounting points are different.

Ruudje provides another alternative:

"Yes your regulator will be gone soon. But.... it can be operative for a year or more...

Noone knows.

Replace it for peace of mind and stock it for future use in emergency situation. That is what I did. I take it on longer trips.

The Electrex RR51 may die on your ST also. Even sooner as the original one did.

The Ducati replacement is better but expensive. Use a SH232-12 or SH538-12 from a totalled Honda, models CB125/250 or VF500. Other Honda models may have used the same regulator but from these models I know for sure. A used regulator will cost you not a lot more than \$50 as the Duc replacement goes for about 200."

5.2 Clutch Slave Cylinder

Many (many!) owners report problems with leaking clutch slave cylinders. The leaking can be very minor, not always obvious on the outside, but have a major impact on clutch performance. The symptoms are varied, but in my case I had difficulty changing gears (especially down), couldn't find neutral, had a really mushy clutch lever feel, and a slight fluid discoloration.

The main culprit is generally accepted to be chain gunk fouling the shaft, which then wears out the seals. Ducati have a revised cylinder with a longer skirt to keep the chain gunk away, but owners of new bikes still report problems.

Interestingly, owners who have replaced their cylinders with an after market item such as Yoyodyne or VeeTwo don't report these problems.

Replacement clutch slave cylinder seals called "Quad Ring" are available for many Ducati models.

These seals are available mail order, in the UK from authorised Ducati Performance agents, [Pro Twins](#), for £ 2.50 + VAT inclusive of postage. This is good value bearing in mind that the shorter-lived OEM seal from Ducati is a similar price. Their postal address is: Lambs Business Park, Tilburstow Hill Road, South Godstone, Surrey, RH9 8LJ England. Telephone: 01342 892888 fax: 01342 893996 e-mail: <mail@protwins.co.uk>

Replacement slave cylinders are also available from [Evoluzione](#), [Vee Two](#) and [Yoyodyne](#)

Ray provides some great information on clutch slave cylinder failures:

"Now, I know on the early models a lot of people were questioning whether contamination of the inner seals by chain lube/ gunk/ grit was causing the problem of seal failure/ wear. Anyone who has owned a '01 model with the same problem can tell you that this is definitely not the case. The '01 has a green silicone high temperature seal between the slave cylinder housing and the

gearbox casting. This is a very tight seal and would not let fluids or contaminants enter or exit the slave cylinder.

The fact that the '01 models have this seal gives an explanation as to why failure symptoms differ slightly between model years.

On the earlier models without the housing seal the clutch fluid will leak out of the rear of the cylinder housing (assuming the piston seal fails) and onto the gearbox casting, a resultant loss of fluid will be observed in the master cylinder and the clutch action will have less "feel" due to air possibly entering the system via the leaky seal. Also, the clutch will become more difficult to disengage due to the compounded effect of "compressible" air in the system and the leak of fluid (and hence the loss of piston travel) during clutch operation.

On later models with the housing seal (again assuming the piston seal fails), the clutch fluid leaks past the piston seal and then is prevented from escaping any further due to the housing seal and the O-rings on the clutch pushrod where it enters the gearbox through the casting. This means that the fluid that has leaked past the piston seal now presents an incompressible obstacle in the path of the piston movement. Couple this with the air that inevitably also occupies some of the space and the rise in temperature caused during engine operation, and you get a situation where the air/fluid is exerting a "backforce" against the piston and causing it to retreat into the slave cylinder!

As a result this actually tends to give a slight rise in the fluid level at the master cylinder mitigated by the loss of fluid from the leak)and also results in a large increase in lever travel before the clutch will operate due to the increased distance the piston now has to travel before it actuates the pushrod.

So what does all this mean??

Well, on both my bikes I observed that the DOT 4 fluid became dark very rapidly during use and it appears that this is caused by seal material breakdown. Mechanical wear on the seal would normally be far too minimal to cause leakage at the early mileages we have all seen. However, having looked at the inside of the pistons / cylinders of my bikes I can also say that the machining of the sliding surfaces is not the best and has probably contributed to the early seal failure through "abnormal" wear.

On both bikes, after completing modifications (aftermarket seal on the '98 and aftermarket cylinder/piston assembly on the '01)I did not experience any problems and the replaced DOT 4 fluid did not darken by any appreciable amount over the period since.

It is therefore my opinion that the standard Ducati seals are of the wrong material grade and as a result they react chemically with the clutch fluid. I also believe that the machining of the parts has lacked quality of finish and maybe (?) dimensional tolerances have varied more than they should.

Certainly I regard the clutch slave cylinder as the first item to upgrade on any of the ST series, unless of course you have never experienced a problem.

Hope this post is of some use to all of you."

From Mike Mullen:

"Ducati redesigned them several times, the last of which was in 2001. The slave on the GC is like the older design. Evoluzione sells aftermarket pistons with better seals. Just pop out your old piston with compressed air, clean the bore, and pop in the new one. I think their piston/seal kit is \$15. I always replace the older slaves entirely with better ones that ease the clutch pull. Evoluzione also sells them (and I stock them). The best made are by STM (very pricey – over \$200) and Yoyodyne (a little less pricey – @ \$190)."

From LT Snyder:

"It says they are for the '99-2000 slave and I am on a different bike today, but I can look at the slave when I get home. I'm not familiar with the difference. I replaced mine when it stopped working smoothly. I opened it to find

scoring on the walls from the piston getting cockeyed in the bore. This occurs when the single o-ring seal on the piston flattens out. The new piston has two parallel o-rings and prevents this from happening.”

Another good source of information:

http://www.moto-one.com.au/performance/clutch_slave_cyl.html

5.3 Rear engine bolt

The rear engine bolt has been known to stress and fatigue over time and if not checked can shear or lead to engine case cracking, both with dire consequences.

Some early warning may be gained if the torque is checked regularly (at every service). If the bolt has lost torque then it could be a sign that it has fatigued.

From 2001 onwards, Ducati has increased the bolt size from 10mm to 12mm. Time is yet to tell whether this has solved the problem.

As far as replacements go, Nichol's Manufacturing sell strengthened replacement bolts at <http://nicholsmfg.com/>. (Other sources?)

Thanks to Duncan Sargeant for the above piece.

Helpful solutions:

- Replacement bolts: <http://nicholsmfg.com/>.

5.4 Clutch Groan

From Mark Trbojevic:

“It's the sound of the clutch plates slipping over each other. I believe that blowing out the dust will help. Used to happen a lot with my stock clutch on the ST4s, usually when accelerating away hard from a stop!”

5.5 Clutch Wear

It would appear that every STx ships with clutch plates which have soft "tang" which quickly wear away at the basket. This picture clearly illustrates the wear at the leading edge of the tangs:

<http://www.homepages.hetnet.nl/~koskampudy/clutch0004a.jpg>

As the tangs wear, it creates greater freeplay and will damage the basket too!

Solutions include the Nichols light clutch basket in combination with Barnett clutch plates, or the Dr. Desmo quiet clutch kit. ([confirmation?](#) [Any other product?](#))

(Thanks to Duncan Sargeant for the above info)

5.6 Fogging Headlight

Quite common on Ducatis built from 1997 to 1999. The headlight looks as though there is a fine mist of condensation on the inside of the glass. Fixed under warranty in all recorded cases..

5.7 Loose alternator nut

A loose alternator nut doesn't sound like a big deal, but here's some information assembled by one of the listers:

“My 2000 ST4 had 18k trouble free miles until an alternator nut backed itself off, toasting the clutch (they are not directly connected, but the vibrations that occur damage the clutch). Apparently, Ducati dealers have not been notified that this nut should be torqued to spec during service. The mechanic that currently has mine, while I await a clutch basket from Italy, has been given Loctite for the nut. According to him the factory assembly directions called for the nut to be torqued after oiling! Anyway, I would STRONGLY suggest that you have this torqued and Loctited during your 6K service.”

A couple of responses indicated that their dealer has checked the nut as a routine part of each service. Now you know!

5.8 Chain Tensioner Warning

A couple of warnings have been provided by owners regarding chain tension. You've been warned!

(From Ian Ellis)

The chain tension sticker was incorrect on some early models. Instructions were to adjust chain slack on the *sidestand*. New bikes have same style sticker but with the word *centerstand* instead.

The sticker on swingarm is not centred, so measurement at the arrow on the sticker will yield a too loose chain. Measure from centre of axle to centre of countershaft and make a mark half way in between.

(From David Harvey, UK)

Ducatis such as the Monster, 851 and the ST series with the bronze-coloured end plates on the rear of the swinging-arm are prone to the cracking of those end plates, usually as a result of over-tightening of the chain-adjuster bolts. This type of chain-tensioning system leaves a lot to be desired from an engineering point of view. The nearside adjuster is particularly prone to loosening off, presumably due to some sort of torque-reaction from the chain and sprocket under acceleration. Using the bike over rough-roads and/or failing to sufficiently tighten the spindle nuts probably doesn't help. To compensate, the adjuster bolts are often over-tightened, causing the cracking.

The standard adjuster bolts also require some form of security to stop them falling right out if they become slack and the Factory have fitted a small socket cap and washer to the other end. On my own ST2 I once found the near-side adjuster bolt had worked loose and when I fully withdrew it, the securing cap screw had also worked loose and fallen off inside the swinging arm!

One solution is to always torque down the fasteners whenever they are disturbed and then lock-wire them. My ST2 has been modified by [Brancato Engineering](#) in Oxfordshire (tel: 0865 891203) with what I believe to be a much better solution: He replaces the adjuster bolts with stainless steel studs which are secured into the spindle blocks with roll pins. The end plates are then secured with a stainless steel nyloc nut and washer. Problem solved with the advantage that when adjusting the chain, rear wheel alignment be checked accurately by measuring the length of studding protruding from the end plate.

5.9 Fuel Pump Relay

If you ever suffer from the “nothing happens when I push the starter” one of the problems might be the fuel pump relay. To diagnose the problem, turn the key to the on position, and you should be able to hear the fuel pump working. If you can't, then the problem is either in the fuel pump relay or it's wiring.

If the fuel pump is working, check the side stand cutout relay, or even the ignition kill switch.

5.10 Counter shaft sprocket retainer clip

Listed as one of the recall items, the following friendly advice comes from a lister:

“Check the counter shaft sprocket retainer clip. I believe they started hardening these in 2000 and if yours goes it can strip the spline shaft which is an enormously expensive proposition. The clip is only ~10 bucks so its well worth getting a new one that you know has been properly hardened.”

Further detailed information has been provided by Justin:

“Remember, my ST is a '97, one of the first, and I had many failures of this clip before the recall for the replacement hardened black ones was issued. The dealer got to know me quite well, and simply installed a new retainer every time I rode into the workshop. All my failures were with the old 'gold' coloured plates. I have not had a single failure with the new 'black' hardened plates.

The countershaft splines actually taper off before they go through the engine cases - they must do this to provide an uninterrupted surface for the oil seal around the countershaft, so theoretically it's impossible for the countershaft sprocket to run against the engine cases, as the spline doesn't go in far enough. When my retainer plate failed completely, the chain jumped the guide on the swingarm, and started rubbing against the inside edge of the clutch slave. There was NO damage to either the chain, or the swingarm, but slight wear marks on the nylon guide on top of the swingarm.

I didn't even know it had happened until I stopped for a break somewhere on the road, and something 'not quite right' caught my eye. Luckily I carried a spare retainer plate with me - even at that early stage it was a known weak point, and I simply replaced it with my spare.

I've only just replaced this clutch slave nearly 3.5 years later, and not because it failed either. I replaced the clutch slave just to get the easier clutch lever pull of late models.

If I were you, I wouldn't be worried about the new 'black' hardened retainer plates, as long as your chain is correctly tensioned, and has no 'tight' spots.”

5.11 Help! My bike won't start!

It happens. You know, get the gear on, staddle the Duck, thumb the starter..... thumb the starter.... Third time lucky.... Nope – no go. If you're lucky, you haven't been left stranded. If you're really lucky, maybe the answer is here.

Consider the following story from Ian Deary (00 ST2, UK):

“Saturday and Sunday were sunny in my part of the UK, perfect for a blast down some twisty lanes. At least it would have been if my ST2 had started! I'm baffled: The immobiliser beeps merrily (META 357) and the headlight, Neutral light etc. all light up. The sound of the fuel pump whirrs into life but it's as though someone has disconnected the starter button. I've checked the kill switch, side stand position, followed the wiring from the starter for loose connections etc. - Nothing. Could it be a fuse or something else? It's still under warranty but I may have to wait for at least a week before some bloke in a van comes to whisk it away.”

5.11.1 Connection problems?

A tip from John Stockwell (Takka): **“Check the main wiring connector on the L/H side, just by the fuse box, rectangular shape. Disconnect battery earth then part connector spray with CRC or similar or use some dialectic grease. These have been known to give trouble if moisture gets in. Check also the starter relay & connection on Starter solenoid.”**

From Rog: **“I had a similar problem and popping the side stand up and down a few times cured it. I think the internal microswitch in the stand is suspect but it hasn't happened again. Hope this helps. That sidestand kill switch is a real pain anyway don't you find?”**

Another tip: The little white relay connection (from the starter switch) is very easy to knock loose.

5.11.2 Starter doesn't come on?

From Mike Mullen:

“This happened to my bike during the first 100 miles of ownership. Low amperage wires to the solenoid weren't plugged in all the way. Another list member said that exact same thing had happened with his bike.”

5.11.3 Jump starting your ST

Ian provides a couple of options on jump starting your ST without having to strip the whole thing down. Note his disclaimer on Option 2.

“I found that the bike could be jump started without removing all the plastic.

Option 1 (TESTED) I removed the lower right fairing panel so I could get to the ground terminal, although in a rush you could clip onto the cable end that mounts to the rear of the engine case. I then went in through the front right air scoop to the starter solenoid by clipping onto the upper solenoid you can then fire the starter with the switch. I use mini jumper cables that I made to attach to the solenoid bolt. They fit nicely through the little opening in the fairing. They are similar to the ones that the bike catalogs have.

Option 2 (NOT TESTED and not recommended) - take a BMW accessory fitting and hook up long wires and small jumper clips to it. Then leave the bike connected to someone's donor vehicle for an hour or so and then restart it. That would take about the same time as removing and reinstalling the plastic. If you try it without allowing the time for their car battery to bring up the voltage in your battery the sudden inrush will blow the 3A fuse instantly (my guess). I currently have a 7.5 in there for an emergency tire pump that I carry, so I might be able to get away with it, but I'd be a little nervous about turning the wires into resistant heaters. Take a look at the small size of wire on the stock outlet and consider trying to jump start with them, you'll probably choose another method, like I did.”

5.12 Sluggish Starting

Many owners complain of their bike barely having enough energy from the battery to kick the bike over before it starts. The causes are twofold: The standard battery (for various reasons) sometimes loses some of its charge. Some owners will keep their bike on a battery tender to keep it charged, and thus minimise the starting problems. The later model (2001) bikes are fitted with a new maintenance free battery, which seems to be a little better.

The other main reason for sluggish starting is linked to the wiring which is connected to the battery. The standard wiring, while able to do the job, can be replaced with heavier (=thicker) cables.

Remember the formula $V=IR$ where “V”= Voltage, “I” = Current and “R” = “Resistance”? John Swiatek sums up the theory very well:

“Normally higher resistance would decrease current, $V=IR$. R goes up, V stays the same, I must go down.

However, when there is a motor in the circuit it will attempt to draw current until it has enough power to do its job; in this case it must turn the engine over. Due to the higher voltage drop in the smaller wire ($V=IR$) there will be less voltage at the starter motor terminals so it will draw more current ($P=VI$).

The battery must supply this additional current. So where does the extra battery power go? It is lost in the form of heat in the smaller wire (I^2R loss).

This is why transmission lines use high voltage low current to distribute power, it minimises I^2R loss. But since we are stuck with relatively low voltage we need "big, fat wires". :^)

From Richard Strysniewicz after performing his own starter wire upgrade:

“Great advice, this came up a while back on the list and a few weeks ago I got around to putting new wires on my ST2. Starts much better now, well worth the hour or two invested. Used 4ga marine wire, tinned lugs, marine heat shrink, and some rubber caps to cover the positive connections. It was a bit fussy to get the 4ga routed but it worked.

That might be overkill and 6ga may work well and allow more flexibility. When you shop think 6 lugs - 2 each for cables from better to ground, battery to solenoid, and solenoid to starter.

Anybody try 6ga with success? I think someone mentioned that last time this came up. Stock appeared to be 8ga to me but I'm not positive as there were no markings on the wires.”

Helpful solutions:

- Check out the upgraded starter cable kit at www.jastek7.com
- Consider installing a Headlight-Gizmo from www.bike-gizmos.com

5.13 916 Rocker arm wear

There have been a few cases reported of rocker arms on 916 engines wearing prematurely. Essentially, the hardening on the arms wears or peels off all together. This is not an overly common problem, but happens occasionally, and seems to be an acknowledged fault - usually fixed under warranty.

5.14 That annoying rattle

Ian Ellis finally found the source of the annoying rattle on his bike, and shares his fix:

“I had been trying to find a rattle that primarily showed up on turns. It turned out to be the shaft between the gear shift pedal and the shifter spline. I put a nylon washer on either side of the rod and did up the nylocks to the point where they grip and it looks like I can listen to the engine without hearing that ugly rattle.”

5.15 Spongy brake lever

In most cases the feel of a spongy or imprecise movement on the front brake lever is caused by some air in the braking system. The usual solution is to bleed the brakes to remove as much air as possible. What if you've bled the system, and you still have sponginess? One option is to remove the pads, and push the brake pistons back into the calipers - this puts pressure into the system and helps remove some of the bubbles. John gives us another simple, but innovative solution:

“What to do about this front brake? Then I remembered an old friend who could never get his brake to firm up on his GSX750. His solution (as told to him by A-grade racer, Wayne Clarke) - cable tie the lever to the grip and leave it over night. I did that very thing and the next day the sun is shining and I've now got a very firm front brake!

Why did this work - the pressure in the system over night slowly pushed the air bubbles I couldn't get out via bleeding up to the reservoir, the same effect as shoving the pistons back into the calipers, except I didn't have to take the calipers off.”

5.16 Front brake lever hits the fairing

For obvious reasons, having the front brake applied when you don't intend for it to happen is not desirable (ask Dan if you need to be convinced!). The reasons could vary, from the installation of non-ST standard adjustable levers, to an accident which moves the fairing closer to the bike by a tiny amount.

Justin provides some information which might help:

"I don't know if you know, but all Duke's have screw and locknut adjustable steering stops down on the bottom triple clamp. You can stop your brake lever from hitting the fairing by adjusting the stop slightly - minimal impact to the available steering lock. I think, from memory you need a 10mm spanner and a 4mm or 5mm allen key to do it. No fairing panels need to be removed - you can reach down from in front of the petrol tank to do it."

5.17 Lack of freeplay in front brake lever

While not unique to ST's, or even Ducatis, this problem is worth mentioning. The symptoms include very little freeplay, or a feeling that the brakes are on, even though you are not touching the lever. Richard has experienced this, and has responded to a list member who described the symptoms of a very scary ride home:

"Your dealer did not leave enough free play in the assembly. I did this to myself once on the 907ie I had before the ST2. Same type of adjustment on the front brake.

If there is not enough free play then the piston in the master cylinder does not retract enough to let fluid flow back into the reservoir. So you apply the brake, the fluid heats up and expands, but cannot return to the reservoir so it applies pressure to the brake pads, which heats the fluid more, and well you get the picture.

You do not want to adjust the screw in until it is tight, that will most likely result in too little free play. The screw should have a little spring thingy and a detent such that it locks every 1/2 turn. Does not need to be tight, the spring and detents will keep it in place (or at least mine have.)

How much free play is enough? Hard to say. Just be careful for a while any time you reduce the free play, do some hard braking in a deserted area to make sure there are no problems."

5.18 Battery light comes on intermittently

This could be caused by a number of things, most likely to be the regulator if you are riding an earlier model (98) ST2. If you've eliminated the regulator, try the tip is provided by Alain:

"I had that problem one time. I disconnected the two plugs between the alternator and the regulator (one is under the air box, the other one near the radiator cap). I put some WD 40 in there and, connected again firmly. No problem now."

5.19 Temperature Problems

Temperature problems are amongst the most common enquiries by the members of the ST owners list. Many new owners feel as though they may have a temperature problem when they first notice that the temperature climbs up above 212 F or 100 C on a warm day. As explained in section [4.10](#), these observations are normal for these bikes. If your temperatures are consistently high, don't drop once mobile, or are way above those listed in the owners manual, then get your bike checked. The manual for my 2001 ST2 indicates that the maximum temperature is 120C (248F). If this temperature is exceeded, then the temperature indicator will start blinking.

Occasionally though, there is a real temperature problem, with the temps rising far above what is considered acceptable.

Here are some tips if your engine is overheating:

- Check to see if both sides of the radiator are the same temp, by hand on side tanks. If not then you have a circulation prob. Make sure that the small tube from fill up/header tank isn't kinked (Takka).

5.20 Rear Brake Line warning

A potential problem with the rear brake line wearing through on an ST2 was reported by Ray C:

"I have just noted an interesting and potentially serious problem with the rear brake hose "carrier" on my ST2.

I'm not aware that anyone has ever mentioned this before, so maybe my bike is an isolated case, but here are the details for your information:

On the ST2 there is a wire "carrier" above the swing arm which holds the rear brake hose out of harms way. It is presumably designed to prevent the free length of hose from becoming abraded or trapped by the rear suspension spring and associated mechanicals.

I have noticed that the wire carrier is actually damaging the hose quite severely. In my case the hose has a chunk of rubber missing from its wall because the end of the wire has been digging into it during the natural movement of the swingarm.

Although the hose has not failed and I have since "modified" the carrier slightly, there is a great potential here for unexpected failure of the rear brake.

I would advise all ST owners to check the carrier on their bikes to make sure they do not have a similar problem.

My Ducati dealer has put in a warranty claim and they will be replacing the hose, but it doesn't sound like Ducati are planning on changing or modifying the wire carrier.

As a temporary measure I have fitted a piece of thin rubber sleeving over the wire end and also bent the wire end outwards slightly to help prevent further damage to the hose."

5.21 Spluttering and Stalling

One owner reported a problem whereby his bike would misfire, splutter and sometime stall. Stephen provides a suggestion:

"...since the onset of colder weather here in the land of Oz. I have been putting up with the her spluttering sessions for the last couple of weeks and will do so until she goes in for the 50,000 km service. Feels like it is electrical in nature. Maybe a regulator on it's way out. It usually does not happen until I have done at least 20 km and then she will splutter and misfire and sometimes almost die.

It was one of the temp sensors that was intermittently going bad.

The Mathesis should pick up that straight away, my extended episode with it was due to my mechanic/dealer not having a Mathesis. Once I had it diagnosed on the Mathesis it was obvious. Check the connections to the sensors first, they may just need some attention."

5.22 Cylinder base gasket leak

A few instances of the gasket at the base of the rear cylinder leaking have been reported. Fariborz did some research:

"After all the posts about the leak, I decided to call Munroe Motors to find out why the gasket leaks and what is the solution. This is what the service guy, Rick, at Munroe said:

Ducati has changed oil passage ways on the vertical cylinder for better lubrication on the 2001 and 2002, 4 valve 916 engines (Monster S4 and ST4). As part of this modification, the gasket was also redesigned to accomodate the changes.

Anyway the new gasket design leaks on some new bikes (Do not know how many). The solution is to remove the cylinder and put what they call gasket goop for lack of better term, and let it dry for overnight. According to Rick at Munroe, this is a two-day or three-day job (need to let the goop dry out). No drilling of any kind is required.

The good question is why did Ducati Modified the oil Passage way to the vertical cylinder for better lubrication! You do not think it has to do anything with the FLAKY ROCKER problem, do you? Noooo. ~80)"

After reading the information supplied above, Jason did some further research:

“Ok, after reading this I decided it was time to call Moto Britalia and find out exactly what they were talking about. I spoke with the head mechanic there who said they've seen this problem on many of the 916 engines. He said that what they do is pull the cylinder, put a bolt in the oil passage that goes into the rear cylinder. He said that excess pressure is caused by the way that the oil is being pumped into the cylinder for the 4-valves and having nowhere to go causes the gasket to leak. By putting a bolt in the oil passage it reduces the volume and pressure while still supplying the appropriate amount of oil to the valves.

I did ask them if the problem had reoccurred on any of the bikes that they had made this repair on and their answer was "not a single one." Not that I expected any other response, but he seemed quite emphatic when making the statement. This explanation along with \$1.50 will get me a cup of coffee...I have no freaking clue what he's talking about!! So, does this make any sense to any of you?”

If, after reading all of this, you are still not sure what to do - ask the list or check with a dealer yourself!

5.23 Exhaust popping and/or occasional backfire

“Quite often owners will experience an occasional popping sound on deceleration, and the bike may occasionally backfire. This info from Warren might help:

After putting pipes and a FIM chip on my ST2 popped and farted on deceleration and also popped at a steady rpm without a lot of load around the 4500 -5500 range, it would even backfire sometimes at this rpm. I put up with all this for some time until there was some info on this list saying that the more open pipes tended to allow the engine to run a little lean and that a tweak of the trim pot inside the cpu was in order. The trim pot is located under the sticker and then under the rubber bung on the cpu.

You need a trimmer screw-driver as these are meant for this job and are fully insulated. Carefully turn the pot which is next to the chip counter clock wise for richer. Turn till it stops but do not force then back about half way from where you started. The trim pot does not do a full turn and the standard position is in the middle. If it still does it go richer again. After I did this to my bike the popping and the backfire has disappeared and the engine runs much smoother.

Hope this helps. I would try this first before doing the chip as it might save you some money.”

5.24 Bike runs poorly, won't rev over about 5000 rpm

The following eui (extremely useful information) comes from John Clifton. Sounds like he found out the hard way.

“Numerous ST owning friends of mine have had this problem occur, usually after a service where the fuel filter has been replaced:

Symptom - bike runs very poorly, refusing to rev over about 5000rpm.

Cause - one of the fuel lines in the tank attached to the fuel pump has come adrift, usually due the pipe not being reattached properly after having the fuel filter changed during a service

Remedy - remove tank, lay upside on ground (hopefully on something soft, say your pillion's jacket - they can put up with the petrol fumes..), remove fuel pump from tank, be careful as the seal can make it a bit of a struggle, re-attach offending hose, stop, now recheck the hoses to make sure they are all going to the right outlets, replace the o-ring seal with that spare one you carry under the seat, grease the o-ring with a little chain lube, carefully put the pump back in the tank, tank back on bike etc.

Ride away cursing the useless mechanic who failed to attach the hoses properly in the first place.”

5.25 Rusty Steering Head Bearings

Some owners have reported that Ducati is pretty lousy when it comes to putting greas on the steering head bearings, resulting in some noticeable rusting.

Dave Harhay:

"I just finished inspecting the 03ST4s steering head bearings. Like everyone says... there's not a lot of grease on them. FYI there is a seal, so the chance of water and crud getting into the bearings is small. I am not sure of the other models however. I put in a liberal amount and retorqued the special nut."

From Ron Ginter:

"I've got rusty steering head bearings!

They will be replaced under warranty (phew!), but I wondered if anyone has had a similar experience? My dealer says that Ducati doesn't grease them very well because they don't consider that we'll ride their touring bike in the rain <g>, so I immediately wondered if anyone in the soggy Pacific Northwest has had this problem?"

From d888spoltd:

"Sadly, your dealer is correct. I don't think that's any different than many other manufacturers however. Check out this months RoadRacing World for a commentary on bearings and lubricating them. I took apart wheels, steering head, and swingarm pivot on both my Ducatis when I bought them and each were fairly starved of grease. It never hurts to take them apart, clean and regrease."

Bill Anderson says:

"I posted the rusted steering head bearings question on the UK ST Yahoo site because of the similar climates of the UK and PNW. I got an e-mail from a gentleman in Northern Ireland who replaced his at 35,000 miles because of rust."

From Darren George:

"Mine were stuffed at 20 thousand km, I was not happy, the boys told me they HAVE to be re-packed at 1000km`s or they rust, as apparently they go sparingly with the grease at the factory... dear [expensive] little buggers too!! Now I re-grease them every 10 thou or so."

"I was told at the local dealership, they do their own things as well as factory procedure, and they've found in the past that the head bearings need re-packing at the first 1000km service, so that they last at all....and having to replace mine @20,000, I'm not going to argue, as apparently they mustn't have been packed... maybe it's more like a 'grease top-up', more than an actual re-pack."

Sandy Thompson:

"My 2002 ST4s had rusty lower steering bearings at about 4000 mostly sunny miles."

From Robert Mohns

"Over the past few months, I'd noticed that the bike wasn't handling quite right. I wasn't sure even how to describe it, but when I was in a couple weeks ago to have a new front tire put on, Eric gave it a test ride and said that he thought the steering head bearings were in bad shape – "dry", he described it. So he pulled them out, and sure enough, they were not happy campers – brown sludge. The upper "seal" doesn't really fit closely enough to seal, so water and dirt can leak in. The bottom is sealed fairly well, though – so water and dirt get in and mix with the grease around the bearings, resulting in the bearings moving in what looks and feels just like mud! The upper bearings weren't nearly as bad, but weren't good either. Two new bearings were \$48 each, and the bike handles like it's supposed to again!

If, like me, you ride your bike in the rain, you might want to consider checking and if necessary replacing the bearings as your mileage mounts"

6. Modifications

The Ducati ST is a brilliant bike in standard form, but there are always those who want to modify their bike for a number of reasons, including performance, sound and comfort. Most STs have some sort of little “extra” or modification because we love our bikes, and want to lavish gifts on them!

The section below provides a non-exhaustive list of some of the common modifications.

Warning – some modifications can affect your new bike warranty

6.1 Engine

6.1.1 Exhausts

An informative thread on the sounds of various exhausts starts here:

http://autos.groups.yahoo.com/group/st2_owners/message/71689

One of the first candidates for modification is the exhaust system on the ST. Why? Some people will tell you that it's for performance, others will say for the sound. Either way, it's an easy mod, and not too expensive. There are many brands of after market can – Staintune, Arrow, Remus, Ducati Performance, and so on.

One thing to check though – sometimes a change to the exhaust will require a matching chip to adjust the fuel mixture.

Another thing to check is that the ST2 and ST4 exhaust systems are slightly different in the way they mount on the bike.

A tip from Dan C:

“Just make certain the muffler brackets are far enough “out” to clear the swingarm. After the mufflers are mounted, sit on the bike and have someone look from behind as you lightly bounce the back of the bike.

As the suspension goes through its travel have them look to see if the two screws holding the mufflers to the brackets will clear the swingarm, on both sides.”

[Staintunes](#) are favoured with some because they come complete with a removable baffle in each can, which is held in with a bolt. This gives the owner a choice of a nice Ducati sound which is “loud”, or “LOUD”

From Justin Berth:

“You say you want a 'deep sonorous sound'. If that is your number one priority then you NEED Carbon Fibre slip-on pipes. For a road bike you don't buy CF for weight - will it save you an extra 3 seconds getting to the shops? Maybe, but the SOUND is what you get. CF [...] removes the high frequency sounds (which sounds a little 'tinny' from a [metal] pipe) and gives you that wonderful, deep, thumping bassy twin sound that only a 90degree twin can make. Wonderful!”

6.1.1.1 Standard cans, professionally modified

Baines Racing in the UK perform mods to standard exhausts to make them look standard, but sound very different. They also offer a replacement chip that's more suitable with the straight-throughs.

<http://www.bainesracing.com/>

6.1.1.2 DIY Exhaust Mods

A number of owners have decided to modify their standard cans to provide a bit more noise, without the expense (and benefits!) of a new pair of slip ons. Some suggestions are provided below - do these mods at your own risk!

From "wwjdwthca" (sorry - I don't have your name!)

"Bills of Material and required work centers:

**Dremel, 1" diamter cutoff wheels for dremel, qty: 1 container 36 pieces
Barrel grinding wheel for dremel (if desired)**

**Power Drill
5/32 or 3/16" diameter drill bit**

Hammer

Loctite, Red Permament

**Hardware:
#10-24 x 1/2" Stainless Screw (head of your choice)Qty:6
Wingnut, #10-24 stainless steel, Qty:6
#10 stainless steel lockwasher, Qty: 6**

Step 1. Drill out the existing rivets, and remove the exhaust end cap piece. You will need to rap this piece off with a hammer and some type of of slot head screw driver or in my case I used a punch.

Step 2. Using dremel and 1" cut-off disks cut a nice round circle about 3/16" off of the outside edge of the 3 existing holes. This will require about 7 to 10 disks to complete the circle. Be certain that the circular cut diameter is large enough so it won't be seen when the end cap is replaced! Note: Dremel has 2" reinforced cut off disks that are much hardier Maximum of four disks to cut the whole, but they are much more expensive. Probably cut off 10 minutes per side though.

Step 4. Using 1" cut off disks cut the current exhaust exit. Be sure to cut behind the where the first circular cut was made. Helpful hint: Set the dremel up so that when you slide the dremel with the blade into the pipe you can slide the dremel until it hits the end of the pipe. This will work as a guide. Since you cannot see where your cuts are taking place, and it will require 5-6 disks to complete the cuts. If you do not have a way to mark the distance, you will not know if your cutting in the same position each time you change the disk cutter.

Step 5. Use barrel disk grinding attachment to clean up any rough edges. This is optional, but I figured if someone looked in I wanted the area to appear clean.

Step 6. Tap end caps back onto to exhaust cans with hammer. Be sure to line holes up. I chose wing-nuts because I thought it would be easy to ensure that it didn't spin when I was holding it in place while tightening. It also served well in that I could easily tell what position it was in since I was working strictly by feel. The hardware you use is really personal preference. But make sure it's stainless steel for corrosion resistance, and you don't want anything large than a #10. The end cap piece is made from a very hard material (some type of stainless I believe), so special drill bits are required if you want to enlarge those holes.

Step 7. Place Loctite on threads before tightening. This will ensure that the hardware does not ever come loose. RED is good up to 300 degrees F., so don't worry about that. I used locknuts as well as an increased measure of safety. This ensures that the nut will not loosen before the Loctite sets, so you can't ride it right away!!

Step 8. All done! Doesn't look out of place either. Stainless screws match the finish well too. "

6.1.1.3 Model Interchangability

ST4 and ST4s slip-ons are interchangeable, all model years. Some group members have reported success in fitting

early-model ST2 pipes to ST4's. It is not clear whether these were factory (restricted) pipes or aftermarket (unrestricted, free flow) pipes.

6.1.1.4 Product/Brand Reviews & User Experiences

6.1.1.4.1 Fast by Ferraci

From: David Bennings

"I purchased fbf carbon slip-ons (manufactured by sil [Sil Motors]) from ebay (\$390 delivered, exc. Condition) for my ST2 and the sound has been deep and welcome. I would have liked to have gotten them cheaper, but they were perfect. I suppose price has a lot to do with your question, how much you are willing to spend. The stats and the terms are not cheap. Good luck."

6.1.1.4.2 Sil Motor

From: Robert Mohns

"I had Sil Motor carbon fiber pipes on my ST4s (and will again, when they're fixed). very mellow, deep, pleasing sound. None of the harshness of Termis or Ducati Performance pipes. (Also, the clear coat carbon fiber sils look really nice!)"

6.1.1.4.3 Staintune

From: Darren George

"Go for Stainless Staintunes, I have them, and no matter how covered in burnt on gunk they always polish up like new, and look fantastic, I think a better option for the road than CF..you're not trying to get a second off your lap time are you? I attack the pipes with a buff on my drill coated with Autosol and they come up gleaming. Sound great too. Don't forget to re-chip."

From: Justin Berth

"I've had the Stainless Staintunes - and won't say a bad word against them....

Extremely well finished / repairable (scratches simply polish out) / great fit / great sound / not too loud (in fact street legal and stamped so in Australia) and even after several long sessions on a dyno (I'm talking 4 DAYS...) which makes them turn a bronze colour, you simply polish them up with some linishing cream and they come up like new."

From: Perry Rosenboom

"I love the Staintunes – I ran with opened up standard cans for a while, but these things are so much better. The sound is awesome, and the oval cans I have look sensational. A big feature of the Staintunes are the steel plugs which can be locked into each muffler to reduce the noise level"

6.1.1.4.4 Ducati Performance

Content needed!

6.1.1.4.5 D&D

From: Robert Mohns

"LOUD. as in BOOM BOOM BOOM BOOM BOOM BOOM BOOM BOOM...

I had a pair of D&D's on my 750, and this described them well. Sil Motor pipes have a much, much nicer sound. For sheer obnoxious volume, though, it's hard to beat D&D's!"

6.1.1.4.6 Termi

Content needed!

6.1.1.4.7 Arrow

Content needed!

6.1.2 Chips / ECU

Until the release of the ST4s, replacement of the chip was a simple and highly beneficial modification. The ST4s was released with a completely different ECU system, and replacement requires changing the entire ECU. For quite some time, no after market unit was available for the ST4s.

6.1.2.1 Chips (ST2, ST4)

If you are looking for an after market chip, the ST2 uses an FIM 161 which was preceded by an FIM 142.

FIM chips can be installed without changing exhaust for smoother operation and some small power increase (2HP at 7K RPM), but are more commonly installed as a matched item for after market exhausts.

<http://www.fuelinmoto.com.au/>

From Kyle: **"By far the mostly widely accepted "best" chip is the FIM 161. A bit more (or a lot more) than the other chips, but usually the best cure for the lean running and backfiring common on new bikes. Was the only thing that finally got my 98 ST2 to run right."**

The following very interesting extract regarding tuning comes from the FIM web site:

"11 - How does the CO trimmer work and how do I set it? Every model of Weber injected bike has a CO trimming function which allows the idle mixture to be set. In fact the trimmer affects fuel delivery over the entire RPM range, but with a lesser effect at higher RPM. The amount of fuel added or subtracted from the base fuel duration varies from model to model, as it's programmed differently for different models and ECUs. However it is necessary to adjust the CO Trim to obtain optimum performance.

16M computers (748/916 Biposto/ST2)

On these ECUs the trimmer is located inside the ECU and the rubber bung must be removed for access. NOTE - Always re-seal the rubber bung with waterproof tape (ie Gaffer tape or Duct tape) after you have finished adjusting CO.

Next to the chip socket there's a very small (1/4" square) trimmer potentiometer. This has the same function as the external trimmer screw on P7 and P8 ECUs. The Trimmer on the 16M ECU has a range of about 3/4 turn, or 270 degrees. When you hit the end stop, STOP !!! There is no roll-over on these trimmers and they will break if you try to force them.

When you screw the adjuster clockwise the mixture is leaned. To set the default position, simply set the trimmer in it's mid-rotation point. You can also use a voltmeter to set the 2.5 volt point.

How do I set the trimmer correctly?

Firstly let's look at the factors involved in the mixture system:

The fuel entering the engine is controlled by the injectors, principally by how long they are open for each engine cycle. Typically at idle they are open from about 1mS to about 2mS. The CO trimmer affects this duration as shown in the table above. This change is the same for both cylinders, and cannot affect the CO cylinder balance.

The computer measures the butterfly position using the Throttle Position Sensor (TPS). This sensor is precisely aligned on the butterfly shaft and affects not only fuel delivery but ignition advance as well. Many owners are tempted to move this sensor on the shaft, as you can get more fuel delivery from the ECU in this way.

But there are several goods reasons not to do this:

The Weber TPS sensors are NOT LINEAR. If you change the position from the factory setting, not only do you change the fuel delivery but you change the ignition advance. This means that the bike will have too much advance at partial throttle, leading to detonation (pinging) problems which were not there before. The factory used a specific setting for it's mapping, and we use the same setting for our mapping. So if you want to achieve optimum results with our chips, then you should set the TPS to the factory settings. Then your engine will operate as close as possible to the engine we used for testing.

The air entering the engine is controlled by two things, the throttle butterfly and the air-bleed channel. These two factors are inter-dependant, ie you can get the same amount of air with a shut throttle and open airbleed as with an open throttle and shut air- bleed. The difference is that the ECU does not know how the air- bleeds are set, whereas it does know the throttle position. So you can change the air entering the engine either by opening the throttles (which the ECU knows about and makes an adjustment for) or by opening the airbleed. The salient point here is that the butterfly and the airbleed are designed for two different functions.

The butterflies are designed to deliver the same amount of air to each cylinder under load conditions. This is achieved by synchronising the butterflies using a vacuum guage or 2-channel CO meter.

Because the butterflies are not perfect, the airflow will vary between the two, especially at low throttle settings. It is impossible to maintain exact synchronisation through the throttle range, so the butterflies are synched where they are most critical, ie in the range one-third to one-half throttle. This can be easily achieved on a brake dyno.

The designed purpose of the air-bleeds is to achieve cylinder balance at low, or idle, throttle settings, where the butterflies are effectively closed on the stop screw. The bleeds are adjusted to give either matching vacuum or CO for both cylinders.

Clearly the idle can be set in a number of ways, since the mixture and balance are interdependant, along with the butterfly synchronisation.

So unless you are familiar with idle setting then we suggest you leave this to a dealer with the right equipment. To properly set the CO you need a CO meter !! If you don't have one it is very hard to pin down the relationship between the CO trim, the air bleeds, and the butterfly position.

So to re-iterate the variables:

- Throttle Position Sensor adjustment.
- Butterfly synchronisation.
- CO Trimmer setting.
- Air Bleeds.

We use the following sequence to correctly align all parts of the induction system. This sequence is essentially the same as the factory recommended sequence:

Set the Throttle Position Sensor on the throttle shaft. To correctly do this you must:

Completely back off the idle stop screws on both throttle bodies.

Use the Mathesis tester or a Digital MilliVoltMeter to read the throttle sensor voltage. To do this you should tap the butterfly with your finger to ensure that the butterfly is completely closed against the body. Then you turn on the ignition and measure the voltage on the throttle sensor:

P7 or P8 ECU: Pins 11 and 17.

1.6M ECU: Pins 16 and 30.

1.5M ECU: Pins 22 and 11.

If the sensor does not read 150mV Plus or Minus 2mV then you need to adjust it:

Slacken the lock screws on the throttle sensor using a screwdriver or 7mm socket.

Carefully move the sensor whilst reading the voltage.

Retighten the lock screws a little at a time, each time reading the voltage and adjusting the sensor.

Note that you should probably overshoot the reading by about 5mV on slack screws, because when you tighten them the reading will change by about 5mV.

Repeat until perfect. This takes a lot of practice. The factory manuals specify +/- 5mV but we feel that this is not accurate enough. Many owners will attest to the difference in performance when the sensor is set perfectly. Reset the throttle stop screw (or screws) so that the engine idles at around 1200 rpm. This is not a final setting for the stop screws, merely a step in the procedure. Typically this will produce a voltage of around 300mV on the TPS. This value is completely arbitrary and is not important. Many people misunderstand the factory manual in this regard and will try resetting the TPS until they get 1200 rpm idle and exactly 300mV on the sensor. THIS IS WRONG !!! The actual voltage on the sensor at idle is irrelevant to correct sensor positioning on the throttle shaft. Trust Me !!

Synchronise the Butterflies:

Close the airbleed screws completely by adjusting CLOCKWISE. If you don't do this then the throttle vacuum will still reflect any air passing through the bleed channels and the butterflies will not be perfectly synched.

Attach vacuum gauges to the manifold port on each cylinder and run the engine.

Adjust the throttle butterfly link shaft until vacuum is identical.

Rev the engine and confirm that vacuum tracks on both cylinders throughout the throttle and RPM range.

Re-adjust the link shaft until satisfactory results are obtained.

Do Not adjust the throttle link shaft after this point.!!

Set the IDLE Balance by adjusting the airbleed screws

counterclockwise and confirming that the vacuum is identical for both cylinders at idle. You can rev the engine and observe vacuum tracking through the rev range, and then observe idle vacuum restabilising. NOTE Since the airbleeds are designed to iron out any irregularities in the throttle's function, by their nature there is no default setting, unlike the idle screws on a carburettor. If anything the default setting is fully closed. Airbleeds can also be balanced using a 2 channel CO meter. In this case, just adjust the bleeds until both cylinders have the same CO. Adjust the IDLE Mixture. Finally you get to set the CO Trimmer ! This will affect both cylinders by the same amount, so you need to set the airbleeds first. A typical CO figure for idle is 4% to 6%, but automotive regulations usually specify a CO of under 1% to meet emissions standards. A V-twin will idle very poorly if the CO is set below 1%, so if you are really bothered try a setting of about 3%. Note that you may need to finesse the airbleeds at this stage. Adjust the IDLE RPM. Set the idle rpm at the manufacturer's figure (usually 1100 - 1200 rpm) by adjusting the throttle butterfly stop screw (or screws).

We recommend 1200 rpm for Ducatis and Guzzis, possibly 1500 rpm for Ducati 996SPS models.

Finally, note that the last three steps are usually repeated until an acceptable balance of Idle Balance, Idle Mixture, and Idle RPM are obtained. This is normal. Do Not adjust the throttle synchronisation link shaft once it is set in the early stages. If you do this now, you will need to go through the entire sequence again. So hopefully you will have an engine which now idles, accelerates, and delivers full power faultlessly. Again, if you are not confident about all of these steps, then we suggest you use a dealer who has the skills and equipment. It is not worth adjusting the CO trimmer unless the entire sequence is followed without skipping any steps."

6.1.2.2 Chips (ST4s, ST3)

A Ducati Performance replacement is available for the ST4s. Another option for ST4S owners (*not* ST3) is buying a FIM performance ECU, which replaces the factory ECU and ignores the immobiliser completely, as well as being fully remappable.

6.1.2.3 How do I replace my chip

This sound advice from Wolfie:

“There is a notch in the computer chip. Take note of where that notch is located on the stock chip before you pull it out. The new chip should have that same notch, so orient it just like your stock chip. With the right handlebar switch in the 'run' position, turn the ignition on. You should hear the fuel pump begin to cycle, and your lights will come on. If you don't get this, turn the key off and check the install of the chip.”

6.1.3 Airbox and filters

Many owners modify their airbox by drilling largish holes in the lid (to get better airflow and a bit more noise). Details of this can be found in the archives on the list (I've not had time to research it yet). Other options open to you are specially designed replacements.

There are also a number of after market, washable filter elements that can be used. There are two from K&N, one of which requires some trimming of the lid to fit. The other (part #du-9098) should fit without any mods.

Justin provides more detail:

“The centre divider of the airbox lid usually has to be removed when fitting an aftermarket air filter, such as a K&N, which is a lot deeper (and hence more filtering area) than a standard filter. It's not removed to produce more noise, although more noise might be the by-product.

I managed to fit my K&N by only removing the very ends of the divider in the lid, but I have to be careful when replacing the lid and filter to ensure a correct fit.

By the way, fitting an aftermarket filter does not give an increase in performance (I've spent enough time on various Dyno's to know this), but allows you access to a filter which is cleanable, and hence reusable. LARGE holes in the rear face of the airbox lid Will give you an increase in performance though. The filter itself is not the restriction - rather the lid is.”

6.1.4 Combining Opened Airbox, Pipes and Trim Adjustment

kktk_200 asked:

“I've had my airbox drilled at the back for better flow. Fixed on a Ducati Performance Exhaust. Had the trimmer on my 99 ST4 richen by 45 degrees. Do I need an aftermarket EPROM or would the trimmer adjustment suffice???”

From Fariborz:

“To really know the answer you need to put an exhaust analyzer in the mufflers and measure the CO content. Anywhere between 3% and 6% should work but closer to 6% is preferred. But using a less scientific method (aka seat of the pants analysis) from a cruising speed of lets say around 55 mph in 3rd gear going down on a small incline, chop the throttle completely. If you hear the exhaust popping sounds you are still running lean and might need a new chip. “

6.2 Clutch

6.2.1 Quiet Clutch

Clutches are one item which is a reasonable area for an upgrade. Many owners report wear in a relatively short space of time with the standard dry clutch arrangement. Almost everyone who replaces their clutch or clutch components will opt for an improved after market clutch, even if only because the after market clutches are much quieter.

Vee Two Clutch Replacement Kit:

Stephen Gendle with around 90,000km on his ST2 (“The Duchess”), replaced his clutch assembly with VeeTwo aluminium drum and aluminium basket, and Sureflex plates. According to Stephen the first (standard) clutch lasted 55,000km at which time he replaced the drum, basket and plates with stock items. The stock replacement lasted 25,000kms before a worn / bent pushrod and bearings forced another replacement, this time to the Vee Two.

According to Stephen, the replacement parts were far superior in manufacturing, and cost around the same as the stock parts.

Justin Berth on Vee Two clutch kits:

“Have a look at the VeeTwo clutch kit. They've recently upgraded the components - the clutch basket now uses 7075-T6 Aluminium - much harder than the 6061 Aluminium that other manufacturers use, plus it's Hard Anodised on top of that. 7075-T6 is over 50% harder than 6061 grade Aluminum.”

Leo Smith:

“VeeTwo says... "Note : Vee Two does not recommend fitment of alloy baskets to the ST2 and ST4 models as the baskets wear rapidly when fitted to these models.”

I cannot imagine why, but that's right from their website, too bad, it's a gorgeous piece of work.”

Chris Kirk:

“That's very interesting. That notice was not there two years ago when I picked up their then newest iteration of an alloy basket.

I've over 25k miles on the same Vee Two basket, Barnett aluminum clutch pack, and Vee Two aluminum hub on the ST2S. While worn, nothing

is in imminent need of replacement I don't believe but then I haven't ridden it since November.

I'll pop the clutch apart tonight, give it a check, & post the results.

[...]

Well I took a look & was quite surprised. I am happy to report that the wear to the basket is essentially nil. The alum. clutch pack tangs are worn about 2.4 mm which is not too bad for the # of miles. I'll install a replacement pack before I ride this year to preserve the basket though.”

Barnett Clutch Replacement Kit:

From Mark:

“My clutch kit from Charlie has about 9,000 miles on it now and it sounds and feels the same as the day it was installed. I haven't inspected the basket itself to see if it's showing any signs of wear, though.

At my 12,000 mile service, the service guys noted that the spring plate of the Barnett Aluminum clutch plates was warped a little and has a couple of burn spots. Not so bad that I needed an immediate change. As a precaution, I bought another Barnett kit which is sitting in my garage, in case I need to swap out the plates, but I've put another 3,000 miles on the installed plates since the inspection. They seem to be working just fine.”

From LT:

“I am a fan of Barnett [clutch & basket combos], and was an initial proponent of their new hybrid baskets. I even sold a few of them. Then I began noticing on both customer bikes and my own a few things. First, Barnett encourages running alloy plates with their baskets. This is problematic because the alloy plates are quickly beat up by the steel inserts. The gap as we know is the culprit for a lot of the noise and friction plate tang and basket wear and the Barnett basket has a bit of gap when their plates are installed. I haven't found the Barnett basket plate combo to have long life... the alloy plates get beat by the steel inserts on the basket within 10K. I then tried running steel plates in the basket, and actually found longer life... but the steel plates destroyed the steel inserts... no surprise there. In the end I stopped carrying them, and told Barnett that the basket sounds great but in reality doesn't work well due to tab clearance problems. I suggested they custom mate their plates to fit the hybrid basket to increase longevity, but their really not interested in doing that. Charlie [Smith, Pro Cutting, contact details below] is the only one crazy enough to do that commercially. However, I've got 25K on an STM basket with Barnett plates that I hand filed for an exact fit. Still no tang wear and still quiet. If you've got a Barnett basket and have had problems let them know.”

6.2.2 Replacement Slave Cylinders

A recent survey on the ST Owners List asked the following question:

If you have replaced YOUR bikes clutch slave cylinder with an aftermarket one, what brand have you replaced it with? And were you happy with the replacement? 33 replies:

Replaced with Yoyodyne?	24.24%
Happy with the Yoyodyne?	21.21%
Standard clutch slave cylinder was better than Yoyodyne?	0%
Replaced with Evoluzione?	6.06%
Happy with the Evoluzione?	9.09%
Standard clutch slave cylinder was better than Evoluzione?	0%
Replaced with Pro Italian?	6.06%
Happy with the Pro Italian?	6.06%
Standard clutch slave cylinder was better than Pro Italian?	0%
Replaced with other brand?	27.27%

A comparison of two of Yoyodyne and Evoluzione slave cylinders can be found at:

<http://ducatigarage.netfirms.com/cylinders.html>

<http://www.yoyodyneti.com>

<http://www.evoluzione.net>

Information on VeeTwo clutch slave cylinders can be found at:

<http://www.veetwo.com/>

6.3 Tyres (Tires)

Tyres are always a hotly debated topic. Most riders have their strong preference with tyres, and don't understand why anyone would use anything else. It seems that tyre preference is dictated by a number of factors, including riding style, cost, longevity as well as plain old fashioned bias.

One of the common opinions of the ST owners is that the Michelin Macadams which are standard fitment on some ST's are holding the handling of your bike back. These tyres have been known in quite a few cases to "cup" - replacing them with a more "sports" oriented tyre will provide noticeable difference.

The ST2 rear wheel is 5.5" and capable of carrying a 180/55 ZR 17rear tyre- the same as the ST4 stock tyre. (vs the 170/60 ZR17 stock)

A survey on the ST Owners group provided the following results:

Preference for Sports/ Touring tyres where the emphasis is on spirited road riding:

34 replies

Metzeler MEZ 4	5.88%
Michelin Macadams	5.88%
Michelin Pilot Sports	23.53%
Dunlop 207	41.18%
Dunlop 205	5.88%

Pirelli Dragon GT	11.76%
Avon Azarro	5.88%
Bridgestone Battleaxes	2.94%

Preference for Sports/ Touring tyres where the emphasis is on longer distance road riding:

32 replies

Metzeler MEZ 4	40.62%
Michelin Macadams	21.88%
Michelin Pilot Sports	0%
Dunlop 207	0%
Dunlop 205	12.5%
Pirelli Dragon GT	12.5%
Avon Azarro	6.25%
Bridgestone Battleaxes	6.25%

Tire wear is obviously an important aspect to choice of rubber. Tires which need to be replaced frequently will obviously add considerably to the cost of ownership. In my own case, I'm still running the original Dunlop D205 on the rear, and have around 14,000km of mostly single weekend riding. Extra weight, and riding styles can significantly alter the distance you can expect from your tires.

One lister found that the Metzeler Sportec M1 lasted less than 2000 miles, whereas Pilots lasted more than 3000 miles.

6.3.1 Speed Rating

6.3.2 Tyre Pressures

Tyre pressures are, in many cases, a personal thing. There is no "correct" pressure - only what suite you and your style of riding. Different tyres work best at different temperatures - for example Pilots will work best when ridden hard, and warmed up correctly (hence the "Sports" designation).

Tom Melesky provides his settings:

"I am currently running Pilot's and live in Texas, so have little problem in getting them warm! However, I do adjust the air pressure for the type of riding I'll be doing. The less air pressure, the more tire flex, and the more heat that goes into the tire. The more air pressure, the less flex, and the less heat that goes into the tire. The manufacturers recommendations are more for preventing tire failure from riding an overloaded bike on an under inflated tire that for managing tire pressure as a performance variable. A rule of thumb on race bikes is to look for a 10% increase in tire pressure from cold after several 'hot' laps on the track.

So, on this weekend's trip to the Hill Country I'll probably run 33/35 on the way down, 1-up with a modest load in the bags. I'll reduce it to 31/33 on Saturday where we'll hit the good roads without bags, and go back to 33/35 for the run back home on Sunday. Two up I'd probably run something more like 34/36."

Justin provides his:

"I run 36/40 most of the time, solo, no luggage, and notice it straight away if the pressures drop, due to slower turn in, and increased effort when turning and holding a line. It doesn't get too cold here in Sydney, with winter temps not usually dropping below 16celcius during the day, and summer temps around 25-30celcius, with a hot day reaching 35."

Ron Ginter provides his:

"I run 32front/36back riding solo, with or without bags. On the original Macadam 90 tires, I got 15,000 km, at

which point the front was badly cupped (a common problem) and the back was just out of tread in the centre.

This spring I put on a D207/D205 combo at the same pressures, and after 12,000 km (it was a good summer) there's about 1mm of tread in the centre of the back tire, and the front is still in pretty good shape.

I check the pressures religiously, and adjust whenever the temps change. I've always meant to check the warm running pressures to see if the 10% rule works out, but have never got around to it."

So, there you have it. Three different settings for three different owners. Make up your own mind, but the following might help:

<http://www.dunlopmotorcycle.com/fitmentguide.asp>

6.3.3 Expected Tyre Life

Varies, however Doug reports over 12,000km from the standard rear Metzeler MZ4.

6.4 Suspension

Occasionally, some owners will get their suspension rebuilt to suite their individual needs or riding style. Kyle provides the following info:

"I think I'm one of the very few who had their suspension rebuilt. Race Tech did mine in early summer 1999, both the shock and the forks. I had Lindemann Engineering do my 750SS shock and forks. Well worth the money at any level you'd like to do (springs, re-valving, etc.). I have an Ohlins shock on my 01 ST4 and while it is certainly an improvement I think the improvement per dollar is better with the rebuilding.

Of course the new Sachs shocks are not of the same quality as the old Showa units, and may not even be rebuildable. If you have non-adjustable forks as on the new ST2, a re-valve and new springs will help tremendously since you can't adjust anything on them."

6.5 Electrical

Fault finding guide for motorcycle electrical systems from electrex <http://www.electrexusa.com/faultfin.htm>

6.5.1 Lighting

6.5.1.2 Replacement bulbs

One of the main complaints about the ST motorcycles is the quality or brightness of the standard headlight setup. Quite a few owners have remedied the problem to a certain extent by upgrading the headlight globes. There are two options – the first is to use halogen globes of a higher rating than the standard globes (see the specifications section for the details on the standard globes).

Remember that using higher wattage globes means that more power is being drawn from your electrical system (Watts being a measure of power). If your choice of globes is too high, and your wiring isn't up to the task, you might find melting electrical systems or worse. Fit these types of bulbs at your own risk!

Another option are high performance "Xenon" bulbs, which claim to offer 30% brighter light, for the same power. A number of owners are fitting these type of bulbs, and they do make a noticeable difference.

Another thing to keep in mind is that even though the bulbs can be replaced with brighter options, this will not change the shape of the reflectors, so your spread, and pattern will probably not change.

6.5.1.3 Ducati Designs Headlight

If you are serious about improving the lighting of your ST, then you need to consider the twin headlight replacement kit. Go to www.ducatidesigns.com

6.5.2 Battery

Battery problems seem to go with owning one of these bikes, especially the earlier models. Many owners choose to buy a battery tender to keep the battery trickle charged while the bike isn't in use.

Part numbers for 2000 and earlier model battery: Yuasa YB16AL-A2

Part number for the 2001 (lighter sealed battery): Yuasa YT12B-BS

The newer battery is the same battery as used in the Yamaha R1 (Thanks to Ian Ellis for this)

Note: The retainer clip is different for the two types of batteries.

6.5.3 Battery Theory

This section was supplied by Ray C. It's brilliant - thanks!

"It just goes to show how different "science" and "reality" can be. I have also lost batteries when left on trickle charge over winter before, although not in recent memory. There can be a whole variety of reasons for these failures and obviously, without knowing specifics of each case, it is hard to know what may have been the reasons for failure. Admittedly, if you know of a number of people that have left their batteries on charge continuously all winter and they failed very quickly in all cases, it would certainly give rise to a belief that the continuous charging was at fault.

I'm going to try to provide you with some more help here and you can decide what works best for you :o)

First of all this may be quite long, so those of you that think you are okay on battery theory and practice may want to lurk elsewhere!

I guess I should point out that (hopefully) I have some expertise in this area because I designed battery charging systems and power supplies for nine years (And...no, I didn't work for DelTran! ;o)) Although I don't necessarily have all the answers, I'm more than happy to put my experience to some use.

Maybe I should explain the battery types, because there are so many popular misconceptions and I'm even guilty of promoting a few myself!

We're talkin' lead-acid cells only.....technically divided into five types (five!!! I hear you say), they are all variants along the same basic idea, they are Flooded, Sealed, VRLA, AGM and Gel.

A flooded battery is your traditional wet lead-acid cell with lead plates and sulphuric acid, topped up with distilled water when the fluid levels drop;

A sealed battery is generally a flooded battery except its sealed from the user and contains a sufficient amount of acid to sustain a chemical reaction for a defined lifetime (usually 3 to 5 years);

A VRLA is a Valve Regulated Lead Acid Battery, it is sealed but it has a valve which permits the safe release of gases created during charging;

An AGM cell (stands for Absorbed Glass Matte) is actually another sealed VRLA and is often thought of as a Gel cell, technically its not and is really a wet cell but its sulphuric acid is suspended in the fibrous mat and the

characteristics are similar to a Gel cell so in my book it can be called a sealed VRLA or Gel cell and it doesn't really matter!;

A Gel cell has silica (mostly) added to the sulphuric acid and this forms a gel like electrolyte, the cell is also sealed and generally valve regulated.

Corn-fused now? You will be! ;o)

For the next bit lets simplify those groupings into three if we can.... Flooded, Sealed Wet (this is what most people refer to as "Maintenance Free"), Sealed Gel (this is what most people mistakenly refer to as "Dry").

Flooded types are the least sensitive to charging levels provided you top them up with distilled water periodically. Sealed wet cells are more sensitive to charge and generally have a maximum life of five years if treated well. Sealed gel cells are very sensitive to charge levels (particularly over-voltage) and experience shows they mostly start to degrade badly after three years although they can last for five years in some environments, Gel cells are best suited to "standby" applications.

Its worth pointing out that the biggest advantage of the Gel cell is that it is smaller and lighter than other types. Of course it is also "maintenance free".

Now here we come to the important stuff:

The type of battery starting to be fitted in most modern motorcycles is the AGM battery. It is small, light and maintenance free, it is valve regulated and the sulphuric acid is suspended in a media, it is non-spillable. Most people are referring to this as a Gel cell and that's okay, technically its not but we don't need to split hairs.

An AGM battery likes to see an absorption voltage in the range of 14.4 to 15.0 volts and the float voltage should be between 13.2 to 13.8 volts. A true Gel cell likes an absorption voltage range of 14.0 to 14.2 volts and a float voltage of 13.2 to 13.4 volts.

As you can see the tolerances on the Gel cell are lower than the AGM but a float voltage of 13.2 to 13.4 is good for either type.

If you are using a "battery tender" or other similar charger with bulk, absorption and float modes you should be able to switch the charger on and just leave it. If there is something wrong with the battery or the charger then you could have a problem, but assuming everything is okay you can leave the charger on float permanently over winter and just let the battery maintain a full charge. Bear in mind that once the cell reaches full charge it will be putting out the same voltage as the constant voltage float charger, therefore no current will flow and so the battery cannot be overcharged.

So why do people have problems?? Well, in my case the batteries I "lost" over winter were all flooded types and in every case it was because I didn't maintain the fluid levels adequately whilst leaving them on charge...in my defence, when you have fourteen motorcycles and three cars in your garage it can be difficult to keep up on the maintenance :o>

I've never had a problem with an AGM or Gel cell hooked up permanently to a constant voltage charger operating at 13.2 volts all winter long.

So what do the ST bikes have? They appear to have valve regulated AGM cells and they can be float charged continuously at 13.4 volts (my personal ideal setting for this battery). Again, a battery tender or similar charger will do the job perfectly.

Now what about the concern that you have lost many batteries by leaving them hooked up to the battery tender? First of all I would have the charger checked to make sure it is working properly. Next, if your other batteries were of the flooded type, you may have experienced a problem where the lead sulphates that occur during natural battery discharge did not recombine properly with the water during recharge, either the fluid

levels became too low or the water that was added was impure. Excessive gassing can start to occur if the float voltage remains too high (above 13.8 V) and so large fluid loss can occur quite quickly if the charger is not adjusted properly.

Again, with an AGM or true Gel cell there is no reason why leaving a charger on float all winter at 13.2 to 13.4 volts would cause an early failure of the battery.

Having said all of this, there is no reason why you cannot continue to charge your batteries by periodically plugging in the charger and providing them with a boost voltage. Just be careful not to let them discharge too much, because any cycling of any lead-acid battery promotes advanced ageing of the cells.

Incidentally, I would think that, in the case of the ST series battery, it would probably have an average lifetime of three years, mainly because it is a fairly small battery and it has to cope with significant loads under starting conditions. If you get four years out of it I will be impressed!

Sorry if all of this has left you more corn-fused....honestly, I was only trying to help <:o}"

6.5.4 Protecting electrical connections

More useful information from our resident Electrical guru (Ray C):

"Dielectric Grease is non-conductive. However, it is used by industry to protect everything from exposed high voltage connections to enclosed computer and eprom terminal connections.

Most people would question the use of a non-conductive grease on low voltage low current connections. The truth is that it can be used on such connections quite readily because of the way it works.

Dielectric grease coats metal connections so that no oxygen can get to the connection. By so doing it prevents the oxidation and thus corrosion of the metal contacts. As an additional benefit, dielectric grease keeps out moisture and thus prevents both corrosion and tracking of electrical current.

Question: What about the contact surfaces being effectively insulated??

Answer: When a connector is pushed, clamped or bolted together it will displace the grease entirely from the points where the metal surfaces contact each other. The grease is specifically designed to do this by having very low shear resistant properties (in other words this "grease" would be totally useless for your bearings) and so any sort of pressure will force it apart, even at the molecular level!

It works, that is why it is used by the computer, communications and space industry. We used to put it between (yes, between) bolted connectors on heavy low-voltage power supplies (4 Volts) and then bolt them up tight so that the grease would squeeze out of the sides, this is the best way to make sure that no oxygen or moisture can enter the connection. You can do this with your battery terminals.

But when you use it, don't stuff heaps of it into a connector...it is not necessary, just a thin film covering the parts is enough to protect them more or less permanently. Apart from the fact that filling a connector full of the grease is a waste, it can also get onto your frame and painted parts with the result that its tough to clean off without some residue somewhere...and if you ever have to have a re-spray, lets just say that dielectric grease and automotive paints don't mix ;o)

As far as other spray-on compounds are concerned, there are a bunch of good ones out there. Dan mentioned S100 and that is a very good product but unfortunately not available as widely as it should be.

WD-40 is fine for cleaning your connections and you can leave a film of it on the metal contacts. The problem with this and many other products is precisely that they are conductive and this can actually cause lots of problems.

If you were to douse a whole connector in WD-40 for instance, if there happens to be a slightly loose connection

and you get some electrical "arcing" the WD-40 will actually promote burning and cause the contacts to become blackened and eventually non-conductive or it will simply allow enough heat to build up through the burning that the contacts actually melt (I've seen that one several times). The other thing is that any conductive spray is also coating the surrounding parts with a conductive layer which promotes electrical current leakage away from the connector, possibly causing a short or arcing between several contacts.

The best thing to do is to use WD-40 or similar to displace any moisture, then clean your contacts with a good quality contact cleaner which evaporates away from the contact surfaces leaving no residue, then put a thin coating of dielectric grease on the contacts and then mate the contacts together.

There, you just knew nothing in life could be simple didn't you? ;o) “

6.5.5 Replacement Starter Cables

6.5.5.1 Jastek Replacement cables

For a professionally made and tested starter replacement kit, visit http://www.powerletproducts.com/products/ducati_starter_rewire.php

This kit has been installed by many ST owners, and all report improved starting and reliability.

6.5.5.2 DIY

From Nick Woods:

“Someone back there (sorry, can't find the post, but thanks) reminded us that there are a few things to do to improve wiring on STs....

I've just made my own uprated starter cables from 7.5mm OD, 126-strand cable, versus 6.3mm OD, 80-strand OEM, which gives a conductor cross-sectional area of 13mmsquare, against only 8mm OEM. Dead easy with all the bits available from Vehicle Wiring Products over here in the UK (0115 9305454), though of course Jastek Powerlet Products <http://www.powerletproducts.com>

do a kit for those who don't enjoy doing it themselves.

On the earthy side, LiSTers have noted that it is bl**dy difficult to undo that pathetic little socket-head screw that attaches the negative lead to the back of the cases, so I've left that as it is, and run in a second thicker lead from the battery to the vacant (on mine...) thread tapped into the side of the horizontal cyl head, as I think our helpful LiSTer suggested.

The result is that the starter really spins the engine.”

6.5.6 Driving Lamps

Some after market driving lamps are available, and some owners buy the pieces and design their own. For a look at some after market lamps, check out Motolight:

<http://www.motolight.com/gallery.htm>

Some others may be available, and I'd be happy to list them here.

6.5.7 Accessory outlets

Later model ST's have a BMW style outlet plug on the left hand side of the bike. These are protected by a 3A fuse. [John Swiatek](#) provides a dual adapter unit to give you an additional outlet for your CB, heated vest, or radar detector (where legal <g>).

New owners will question the 3A fuse, as many accessories will draw more current than 3A, especially heated vests, grips, etc. Some experienced owners recommend replacing the 3A with a 10A or 15A (depending on your needs). The usual disclaimers apply!

Often the question comes up about the type and quality of the socket and corresponding plug on the ST. I'll leave it to our resident Socket Expert (John Swiatek) to explain (prices are in USD):

"There are many manufacturers/distributors of this plug and socket. Amp Inc, BMW, Bosch, Hella, HB, John Deere to name a few.

There are also many grades of quality. Some of the sockets are all metal, some are plastic. Some sockets like the BMW (made by Amp) have watertight connections... but they cost \$28 a piece. Some of the plugs have no strain relief's, some have both strain relief's and rubber boots.

The John Deere AL25073 is plastic, I believe it is \$8 from the dealer. John Deere has a nicer part (MG82002966) but it is \$20.68 from my dealer.

Unfortunately the plastic sockets, like the John Deere, tend to hold the plug like a wet noodle. Some tend to heat up with high current; (the contact resistance at the connection point is another form of I^2R loss). My wife claims she can feel the difference in heat in her electric vest.

I continue to evaluate the different sockets and plugs for my kits. The nicest sockets (for the money) that I can find I had to import from Germany. They are all metal. They "click" when the plug is inserted. I can sell these for \$14.95 (slightly more than the John Deere part but way nicer).

As a side note, I am considering importing a "military looking" socket with screw on cover that is retained by a chain. It would be really cool on a dual sport, or maybe an antique bike. It will not be cheap however, probably \$25-30.

I have three different versions of plugs available also. Plug prices range from \$6.95 to \$11.95 for the super-duper deluxe model.

To those of you who purchased STx kits and received a price sheet with different prices than what are shown here, I apologize. I am still evaluating/modifying this business plan. When I have a stable product list and price sheet available I will post it.

If you are interested contact me off list at jastek-js@home.com"

More information can be found at <http://www.jastek7.com>

6.6 Brakes

Some interesting reading from Warren:

"A little while back I came across some info about Brembo brakes on the Yoyodyne web site.

<http://www.yoyodyneti.com/BremboFAQ.htm>

In the technical notes it does state that these systems are not compatible with silicone based fluid. The eals are rubber and react with the fluid causing them to swell causing severe piston retraction problems. There is also a bleeding procedure which is good to read. "

6.6.1 Pads

Brake pads are (again!) person preference. Check the following link for some technical information from one supplier:

<http://ferodobraketech.com/brakepads.html>

Dan provided some feedback on some experimentation he carried out:

“I tried a set of Ferodo SinterGrip ST pads and found them to offer a bit more all-out power, and about the same initial level of "bite". Stock ST4 pads are also sintered metal so I didn't expect a big difference. They're advertised as being "kind to rotors" but on my rotors I could see more lines forming. They were beating up the rotors. Not surprising since sintered pads are known for that. They're equivalent to HH pads.

Then I tried the Ferodo CP911 Star high carbon formula. The rotors had to be wet-sanded (per Ferado instructions) and that took half an hour. Bead blasting is better but wet-sanding with 320 grit removed any residue left behind by the sintered pads.

The CP911 Star pads offer more initial bite. I can feel more power as soon as I touch the brakes. I like that. As far as ultimate power and fade resistance: I have no idea. I do know that the rotors are looking better and better every day. Fewer lines and a brighter finish. The only negative so far is some dust on the wheel after every ride. These carbon pads won't last near as long as sintered metal pads.

Anyone experiment with pads?”

6.6.2 Discs

Discs are prone to warping, as are discs on many Ducatis. That's why thickness was increased in model year '00

6.6.3 Levers

Mark Whitfield found that he could fit adjustable levers from a 916 onto his ST. He needed to adjust the steering lock slightly so that the slightly larger 916 levers didn't hit the fairing. According to Mark, a 5 minute job. Apparently 996 levers will not fit.

Aftermarket levers can be found at:

<http://www.constructorsrg.com>

6.7 Luggage and storage

The Ducati panniers which fit onto the bike are generally considered to be good quality, reliable items. They are large enough to take a helmet (some of them!). One of the questions which comes up quite often is around their ability to withstand the weather.

Evidence from all the owners on the list is that these units are waterproof, and solid. Owners have ridden through hours of rain, and used high pressure hoses to clean the panniers, and they appear to remain water tight. Take care when opening though – puddles of water which collect near the lock can enter as soon as you open them!

As far as the mounting brackets go.... There are two different attitudes to those. Some people don't mind the look of them, or else will always ride with the pannier attached. These people leave the brackets on permanently. Others will use the panniers infrequently, and will fit the brackets each time they need to use the panniers. Experienced owners can fit the bracket and panniers in about 20 minutes.

Of course, when the panniers are not on the bike, you can raise the pipes slightly (standard ones, anyway), to improve ground clearance and looks – even if the brackets are left on.

Pannier warning:

Some pannier bolts were too long and struck the swingarm on full compression of swingarm. The solution was to shave end of mounting bolt flush with welded nut on end of bracket. Occasional brackets were bent and hit swingarm. Many dealers appear to have not read the mounting instructions and do not use the thick black spacers and long bolt when

mounting bags.

6.7.1 Tankbags

Tankbags are a personal thing – you love ‘em or hate ‘em. If you love ‘em, then you swear by the magnetic ones, or the strap on ones....

These comments come from one of the liSTers:

“I have a Ducati Performance tankbag, the one made for the STx. It’s a really great bag that I have had no problems with, and it’s a lot better than the BMW stuff I used to use. The one caveat is that the safety strap that holds the bag if the magnets should ever let go is a pain in the butt to attach. All in all, that’s a small detail though.”

A suggestion from Ian Ellis for mounting DP bag safety strap

“What I did was to buy another plastic buckle and 12 inches of black webbing at the local fabric store.

Lift the tank and wrap the webbing over the frame tube just right of the steering tube. Thread female half of buckle on and tie an overhand knot in the webbing so it is tight on the frame rail. Trim off the loose ends and melt the frayed ends (I use a soldering iron with a rope melting blade). Close tank and it is permanently there ready to plug the bag leash into. It is unobtrusive and easy. I don’t remember how short I made the leash on the bag but I left the female end attached for a second carrying strap.

Another option for tankbags which gets a glowing review from a liSTer is [RKA luggage](#).

6.7.2 Motobags

For additional storage in an otherwise wasted space under the seat (behind those plast panels that run under the seat), consider Motobags nifty bags. More information at:

<http://www.motobags.com>

6.7.3 Top Boxes

Top boxes (top cases) are popular additions, and Ducati top boxes in a number of sizes specifically for an ST. They are actually made by Italian company “Nonfango” – which may be useful to know, as Sergio explains:

“The rubber mounts on the top case on my ST2 were missing. After doing some searching I got replacements directly from Nonfango in Italy. Email nonfango@nonfango.com. Contact person is Eva Baka. She was very helpful and sent me the replacements in few weeks. Total cost, including s&h about \$13.”

6.8 Grips and Handlebars

Grips are very much a personal preference, and you may need to try a few different types before you find grips that suit your style and hands.

6.8.1 Tacki

Tacki-grips are popular, and are cheap enough for owners to try them without worrying about wasting their hard earned cash (they sell for around \$6 US). They do require a bit of work to fit, and one Owner’s instructions are provided below:

“There’s basically 2 things that have to be done.

The ends need to be cut off to allow for the bar ends. This is best done at the last band using a brand new ‘arc’

exacto blade. Used blades will only screw it up and it's important you use an arc'ed blade for the best results.

The inside end of the throttle grip needs to be bevelled to fit over the throttle mechanism. The first time I did it, I carved it using the exacto. The second time I did it on another set, I used a bullet head stone in my Dremmel tool and it worked perfectly. Just be sure to use a brown stone at about 2500 rpm (medium speed) and go slowly, taking off a little bit of material at a time. In about 10 minutes you'll achieve a perfect fit.

I have a Throttlemeister and it required a slightly different fit (hence the second set). In actuality, I cut my first set too short but the Ducati stock bar ends covered it up nicely. The TM's don't have quite the same overlap. To clean up the look, I used a round rubber washer at each of the bars (bought at home depot). The grips will be hard at first, but will soften up in time and with use. I love 'em! " – Russ, Boise

6.8.2 Heated Grips

The following information on heated grips comes from "Newcenturion" (sorry – I don't know your real name – send me an email!):

"I put Kimpex heated grip "liners" on my '00 ST2, under Tacki-grips. They are thin adhesive wraps with elements like wide rear window defrosters made for snowbiles and cost under \$20. I used a plug-in accessory fuse addition from Trak Auto, about \$4, as power supply so they turn off when the bike is shut off. They have a 3-position toggle switch I mounted on the left side dash panel, with the in-line ceramic resistor. They work fine for me, and sounds like the set described earlier are identical(Aerostitch?), don't know what the cost difference is. Expect to pay over \$100 for Gerbings gloves and around \$60 for the thermostat."

6.8.3 Other Grips

Some owners have tried other brands of grips and found them to be a big improvement over the standard grips. Some of these include: Pro Grip Gel 714, [anyone else want to nominate others?](#)

Johar sportbike grips are foam, good shape, medium size and help minimise buzz and numbness. \$5.95 (in the US) Ideal for those with past broken hands.

6.9 Handlebar Risers

Many owners find that the position of the standard bars doesn't suit them, particularly on a long trip. Some options are available, and it's a case of try them and see. Some owners opt for simple risers, which consists of a plate fitted under the standard bars with longer bolts, just to raise the bars up (and slightly back) - usually about $\frac{3}{4}$ inch.

A more serious option is to replace the bars themselves with adjustable versions, which are also raised. One thing to be aware of is that raising the bars may also involve some longer cables or hydraulic lines. You also need to check that your clutch and brake master cylinders will clear the fairing if you raise the bars. Also check the length of lines and cables if the bars are at full lock in either direction.

Brands of riser include Dr. Desmo,

6.9.1 Heli

Heli bars are used by many of the contributors to the ST list. Some advice on mounting is provided by Ian Ellis:

"The Heli paint is rather thin and the bars are slightly larger diameter than the stock. Put your switch blocks on carefully so as not to need to touch up paint.

Grease up the bar under the throttle sleeve. It seems to trap water in there and mine rusted up some. I have not figured out how to initially align the bars to the triple clamp. It would be nice if Heli put registration marks on the mounting towers so you could start aligned. I eyeball the first fit. Make little marks with a grease pencil or

regular pen to see where the bars need to move after you have taken a test ride. You will have problem with the choke racing, particularly if you like your bars angled towards the back.

I took the fairing off and loosened the choke cable at the throttle body. I turn the bars full left and put slack into the cable so it is not activating the choke. That means on start up you will need to rotate the lever further to choke, but I have never not had enough enrichment to start (bike has run down to 42 deg F). Then I take a small zip tie and pull the cable housing up towards the speedo. I then zip tie the cable to the rectangular wire retainer that it runs through so that the slack is concentrated where it is needed. Make sure you check your bar clearance to the tank. Adjust the stops to make clearance. Easier with fairing off but possible with it on if you have a shorty socket wrench. Take your watch off first (it will scratch your tank when you cram your hands down there). Drill little holes in the non-visible part of the rubber caps and tie a thin nylon string to it. Trap the other end of that under the mounting blocks. That way when the cap inevitably falls off you can find it. Option is to use rubber cement but I didn't like the mess and how it was harder to pry the caps off against the soft paint."

6.9.2 Munroe

Information on the Munroe adjustable bars is available from <http://www.munroemotors.com>

6.10 Cruise Controls

A number of list members have fitted various cruise controls, one of the most popular being a Throttlemeister. Most of these devices consist of a new bar end, which can be screwed in against the throttle, keeping it open for cruising. You should be aware (if you are not already!), that such a device is different from a car, in that applying the brake or clutch doesn't release it automatically.

The Throttlemeister is expensive, well made, visually unobtrusive and very hard to engage smoothly with one hand. Throttlemeister adapter is AD2.

Another successfully used cruise control on an ST is a "Vista Cruiser". More info soon (hopefully!).

6.11 Sprockets

A common (and easy!) modification is to change the relative gearing of the engine to the rear wheel by altering one of the sprockets.

Commonly, the rear sprocket is changed to another with one extra tooth – this has the affect of improving your off the line and low down performance, but at the trade off of a slightly lower top speed, and slightly higher engine speed while cruising. As an example "Doug" changed his sprocket set on his '98 ST2 (15:42) to an ST4 set, (15:43) and at 160kph his engine speed went from 6,000 rpm to 6,200 rpm.

Moving from a 15:42 to a 14 t. front is a 7% reduction which helps with slow speed driving and increasing torque. It is the equivalent of a 15:45, but that would require a new chain. No one on the list has reported a failure from this mod.

Much discussion on the list was had regarding the merits of an odd number (in total) of sprocket teeth. This following simple explanation of why an odd number of teeth is a good thing comes from Warren:

"Random tooth hunting: A chain by it's construction has an even amount of rollers and with an even toothed sprocket the same teeth contact the same rollers. Put an odd toothed sprocket on the wear is shared between all the teeth and rollers. Just mathamatics. Ducati bevels have different teeth numbers in the cam drives for the same reason. "

6.12 Swingarms

Occasionally owners will want to replace a swingarm (usually if it's damaged in some way). The only after market one I'm aware of is made of polished aluminium, is German, and can be found at:

<http://www.ducati-kaemna.de/uk/katalog/Swingarms.html>

6.13 Chains

Chains require a great deal of care and attention, and if not kept regularly lubricated are subject to premature wear – with potentially disastrous results.

6.13.1 Chain Maintenance Tools

Opinions vary on the wisdom / necessity / frequency / method of chain cleaning. Some owners like to clean their chain regularly; others don't bother (especially if using an automatic oiler).

One product that I know does work is the KettenMax (an Austrian product – Ketten = Chain in German).

Check out www.kettenmax.com or www.bike-gizmos.com for more information

6.13.2 Automatic Chain Oilers

There seems to be regular interest in automatic chain oilers. Commercial options include the ScottOiler, the HawkeOiler and the ProOiler. Also of interest is Paul Fox's custom-made "FoxOiler".

<http://www.foxharp.boston.ma.us/bikes/foxoiler>

There is also useful information on the HawkeOiler, the Loobman, the Scottoilier and the German CLS200 at the VStrom Wiki:

<http://www.vstrom.info/wiki/index.php?What%20are%20all%20the%20various%20kinds%20of%20automatic%20chainoilers%3F>

6.13.2.1 HawkeOiler

From: William Hadder

"I have a Hawke oiler on my ST4s and would recommend it. You just have to remember to push the button to oil the chain. Only thing I did was to get a dual feeder to the chain from Pro-oiler. Haven't had a chance to use it yet (Winter) but it looks like it should be fine. I found the single feeder kept one side of the chain lubed better than the other. Didn't present any problems however...."

From: Peter Young

"I have had a Hawke on my ST2 for a couple years. My OEM chain and sprockets lasted 17K miles. I like the fact that I can add oil any time I think it might be a good idea. OTOH, I need to remember to punch the button."

How-to and photos by Peter Young:

http://autos.groups.yahoo.com/group/st2_owners/files/Hawke%20Oiler/

6.13.2.2 ProOiler

From: Robert Cellucci

"There are many advantages to the pro-oiler. I don't consider it overkill at all. I think of it as a much improved and more effective Scottoilier. I know a lot of people like the Hawke oiler, but it just makes no sense to me. I want an automatic oiler that I can pretty much forget about.

The cost, if you get the dual side oiler is about the same. The Scottoilier will oil whenever the motor is running. The pro-oiler will only oil when the bike is moving. It is impossible to set the Scottoilier for all conditions. you can only set it for the condition you use most and hope it stays adjusted. The PO can be reset to the precise correct point and that will work for all speeds and distances.

For example: If the correct amount of lube required is 1 drop per mile and you set the Scott oiler for that amount at 50 mile per hour. When you are doing 25 miles per hour in traffic the Scott oiler will dispense 2 drops per mile, or twice as much as you need at that speed. When you are doing 100 miles per hour on the road, the Scott oiler will dispense 1 drop every two miles or half as much as you need.

In contrast, the Pro-Oiler will dispense 1 drop per mile at any and all speeds. If you encounter rain or a dust storm you can reset the PO by pressing a button on the dash and then return to the exact same setting by pressing the down button. It displays a number so you will always know what setting you are on.

The above is because the ScottOiler is a time based system and the Pro-oiler is a rate based system controlled by the distance traveled.

I was very impressed with the quality of the Pro-oiler components. You definitely get what you pay for and then some."

6.13.2.3 ScottOiler

From: Justin Berth

"I've had the ScottOiler on my last 3 Ducati's now, and have also installed them on various other bikes including an ST4s, a Triumph and a Japanese bike.

From experience, once you set the automatic oiling rate to the correct rate for the bike, it is absolutely set and forget - no buttons to press or anything else to remember, other than filling up the standard reservoir every 1000km's or so.

The ScottOiler operates on engine vacuum, so it only 'oils' when you actually need it - when the engine is running, and the ST's have an easily adapted manifold screw in the vertical cylinder inlet which is the perfect takeoff for the manifold vacuum to operate it.

Several years back when we were 'between' distributors in Australia I imported 7 of the kits from the manufacturer for several mates who also wanted them. The consensus was that the ScottOiler not only doubled the life of your chain, and hence paying for itself within the life of only 1 chain, but that it also made the bike run smoother as the chain was more regularly lubricated. Much better in wet weather too when most lubes would get washed off the chain - the ScottOiler keeps oiling whilst you're riding.

You can use any old rubbish oil you find - as long as it's not used oil. I use supermarket 'no-name' 20W-50 engine oil in it and it works perfectly. Using a different viscosity oil would simply mean adjusting the flow rate on the reservoir via the control dial."

From: William Wahl

"I use ATF in my ScottOiler. There are multiple ways to mount the reservoir depending on your needs. It takes the chain design of our bikes up one step to less worry. Try it and you will like it."

From: Gary Eagan:

For what it's worth, we never could make the ScottOiler work on the Multistrada. Worked beautifully on all of my ST series bikes, but never on the 'Strada. I never received an understandable explanation for that phenomenon. Possibly something weird about the air-cooled DS motor/vacuum?

Brilliant installation instructions on fitting a Scott Oiler for group members can be found at:

http://groups.yahoo.com/group/st2_owners/files/ScottOiler%20Installation/

6.13.2.4 Loobman

Included by the editor for completeness – no group members have posted any experiences with the Loobman. UK£17, fully manual and elegantly simple. A squeeze bottle, delivery tube and a metal arm to put the oil on the rear sprocket & chain – reach down and squeeze.

<http://chainoiler.co.uk/>

Loobman installed on a Ducati 748:

http://chainoiler.co.uk/p_ducati1.html

6.14 Seats

Again, seats are a very personal thing. Many people say that your butt gets used to the standard seat, and can do many hundreds of miles in a day. Others swear by replacement seats. Two of the major replacement seats are discussed below.

6.14.1 Corbin

[Corbin seats](#) have been around for a while, and have a replacement seat specifically for the ST. The seats have an optional backrest, and different piping or Italian flag logo. These seats fit like stock, because they transfer the mounting hardware from your existing seat. Many owners (and their rears!) swear by them..... although you will notice that they weigh more than your standard seat.

Consider the length of the rider seat when ordering. Corbin's standard seat moves the rear of the saddle back approx. 1 ½". One suggestion is to send then measurement from nose of saddle to where you want the back of the seat to be, along with your order.

6.14.2 Sargent

[Sargent Saddles](#) have a variety of seats for all types of bikes, and some owners have said that they prefer the Sargent over the Corbin. Options include leather or vinyl.

<http://www.cyclesaddles.com/home/Saddles/images/WS-ST2-ST4.htm>

6.14.3 Russell

Russell all day saddles have also been mentioned on the list, and are favoured by iron butt competitors like Gary Egan
<http://www.day-long.com/>

6.14.4 Rich's Custom Seats

Rich's are a Seattle based shop that does custom fitting
<http://www.richscustomseats.com/photodisplay.asp?id=euro14>

Other makes of seat suitable for an ST include "Russell".

6.15 Windshields (Screens) and Lips

Some riders find it worthwhile fitting an after market screen to either raise or lower the flow of air around the neck and helmet. Ducati Performance have both a lower and higher screen.

An alternate for a higher or lower screen is "Zero Gravity". Some listers have reported fitting these screens with good results.

<http://www.zerogravity-racing.com/whatsnewduc.htm>

6.15.1 Laminar Lip

From Fariborz:

"Laminar Lip offer two different models, Standard and Touring:

Standard: <http://www.laminarlip.com/st4h.jpg>

Touring : <http://www.laminarlip.com/st2tour.jpg>

I have ridden Bob's ST4S with the standard model. I was wondering if anyone has used the Touring model and what you think about it. I am also interested in hearing other people's experience with the Standard model, Pro (s) and con(s)?"

From: Jack Ward

"I do, I like it. I'm 6'2" and although the air is a little dirty at helmet level, I prefer it on long rides. It is useful to tuck behind when passing truck with their associated turbulence. I also experienced a slight (2 mpg) increase in gas mileage whe I installed it a couple of years ago. I was surprised at first and thought it was a mistake, but I removed and checked it to make sure. It increased mileage."

From: Bob Pave

"Yes, it generally smoothes out the airflow and it seems more comfortable and protective to me."

From: Rob Mohns

I use one as well. I'm 5'8", 30" inseam, to give you an idea of my proportions. For me, the airflow is not only higher but incredibly smoothed out at my helmet, where the stock windscreen buffeted my helmet around constantly. I am a very happy Laminar Lip customer. (Comparing my experience to jack's, it may be that the turbulence is above my helmet!) The "touring" model was not available when i ordered mine. I may order it and try it sometime. [...] I discovered after putting on the lip that the temperature had to get quite a bit lower before I needed neck protection to stay warm. Unexpected bonus.

From: Phil Stob

"Yes, I too have one. It certainly raises the envelope a bit, quiets things down, and gets the flow up higher on your helmet. It makes it warmer and more comfortable in cool and wet weather. I take it off in hot weather to get the air flow. I always thought it would be really cool if it were adjustable, but its worth the money as it is."

From: Gary Eagan

"I've ridden both the standard and touring lip quite extensively, however on the '04 body style. I helped Andy Corcoran develop the touring lip, and I find it to be extremely good in all conditions, including very long days (well more than 1,000 miles). I've yet to try the Lip on the old style fairing and screen, but have all the confidence in the world in Andy's skills. If he builds it, it will work. The touring lip is a couple of inches higher and has a somewhat different curve, allowing to give a wider, smoother peripheral flow. The standard lip is much better than any aftermarket screen I've tried, especially the taller Ducati Performance screen, which I find to be quite turbulent. But I was looking for a bit wider envelope than the standard lip gave. I have a Touring Lip on the ST 3 I have in the garage and have used it several times for 1,000 mile or more daily jaunts. it doesn't isolate one from the wind, just smoothes it out very, very well. Compared to the Standard Lip, I'd go with the touring model every time. But again, my experience is solely on the new body style. Call Andy at Laminar Lip, offend him for me (just a traditional Hobatz practice) and pick his brain. He is an extremely knowledgeable aero engineer. In fact, he is the one who initially taught Paige Ortiz the toe holds of aero flow. They are as good, and I believe better, than anyone in the industry, and neither is full of moto babble bullshit. If they know, they'll tell you. If they don't they won't. Pretty simple."

From: Barry Hobbs

"I'm about 5'10 with a 30" inseam(to roughly judge torso height), and the standard height bugflect... er, laminar lip on my '02 ST4s pushed the air up from hitting me just below the neck, to right about the brow vents on my Arai. If I duck just a little, the air is definitely going right over me. Seems sufficiently stable at all quasi-legal US speeds that won't get you arrested, but it becomes admittedly looser if you disconnect it from the screen using the heavy-duty plastic velcro-like mounting stickies. [Ed: 3M ScotchLok] That is to say, the mounting stickies are not terribly robust once you start popping them on and off, but the glue holding them to the windscreen is definitely stout. I've taken mine off just once, and it got a little more wobbly, but I'm not fearful that it's going to come off at any speed below 120. They admit that the sticky things will get weaker with use, and supplied mine with an extra set.

Biggest drawback: it looks like a bugflector, because, well, it basically IS a bugflector. For pictures, I generally

take it off. It's like having a hood bra on your Maserati. Yeah, it's functional, but it's not pretty. When I'm riding though, that part never bothers me, unless there's a towel girl in the next lane, in which case, other things bother me more.

I think I like it better than installing a bigger windshield, since I still have the option of taking it off, which for riding around town in the summer, is kind of nice. Admittedly, I could do that with a windscreen, but it's harder.”

6.15.2 Aeroflow

From: Mike Mullen

”Looks like Aeroflow might be preparing to come out with a custom screen for Ducati ST's like the one they made for Gary:

http://aeroflowscreens.com/ducati_project.htm

[http://aeroflowscreens.com/”](http://aeroflowscreens.com/)

From: Gary Eagan

“Paige Ortiz, owner of AeroFlow, and I have been raking the mental ruins over this screen now for about three months. Unlike the screens Paige made for my past Rally STs and Multistrada, he actually had time to develop this screen properly. I arranged for him to get a new body style ST to use for a few months, and I believe the design he came up with will be exquisite.

Unlike my past screens, this one will bolt directly over the existing plastic, using the same mounting holes. One can put it on and take it off in about 10 minutes. He also just finished making a few lower body wind deflection panels to put on the bike to add to the quiet and efficiency. One problem a screen designer has is that when he (or she) increases the wind pocket from in front and above, it creates a larger low pressure pocket around the tank and the rider's lap. That's why many screens pegging themselves as touring screens and just taller versions of the stockers are actually noisier and more turbulent. Wind then wants to get sucked up into the cockpit from the sides and below the rider.

Tomorrow [...] I will be putting the first 6-800 miles on Paige's new screens. I have two at Salt Lake Motorsports, one about an inch taller than the other and of minutely different design at the top corners. I'll ride a hundred miles of so, come back to the shop, toss on the smaller screen, ride 300 miles or so, then do the same with the taller version. At the end of the day, I should know which works best and under what conditions.

Hopefully on Saturday we will have the side pieces, which I will add to the mix and then evaluate the whole package for Paige. The screen looks OEM, and is extremely well finished and designed. Paige has probably spent \$7-8,000 minimum just making the initial molds. He'll do the final versions after I report back.

The big advantage to this setup is that one can add it for long touring, and in no time at all take it off for sportier spins. Coupled with the fully adjustable bar risers CycleCat has built to my specs, this system will give the ST very long legs for those inclined to go out and seriously "Play in Traffic." “

6.16 Headlight

6.16.1 Cleaning and upgrading

Eric Schneider provides some information on his cleaning and upgrading work:

“Well, here is how it went with the headlight...

Rather than working all around with a sponge on a stick, I took the brute force method. By removing the 8 black screws at the second silicone join from the front, and then cutting the silicone with a razor, I was able to pry the glass completely away from the reflector assembly. If you do this it's best to do the prying over a bed or something, in case the glass drops.

Once the reflector assembly was out cleaning the glass and the reflectors was a piece of cake. I used isopropanol (rubbing alcohol) and it did a good job.

Getting to the back of the projector lens was more of a project, there were three spring clips that have to be popped. Not a big problem, but a bit of a trick. Then it's time to remove the screws holding the bulb bracket to the lens/reflector assembly. You have to watch out for the washers used to space the two parts, they are between the two parts, not under the screw heads. They are not used on all of the screws, so note which ones get them. Then you have to remove the horizontal cut off filter (be sure to misplace it) and clean the back of the low beam projector lens.

Re-assembly is the reverse. I used bathroom silicone to close up the cut I made. IMHO, the reason for the scum on the glass surfaces was the brown grease that was on the parking light bulb. I don't know why this stuff was there, but it was a mess. It's gone now!

I replaced the OEM bulbs with PIAAs. I also upgraded the power feed to 14 gauge wire switched by relays. And I replaced the "parking" lamp with a specialty blue bulb and wired it to the low beam.

So, how does it work? The PIAAs and the blue bulb really give the lamp a blue color, so it's going to look very different going down the road. Hopefully cage drives will notice this a bit more, sometimes the yellow bike isn't enough. The bulbs are definitely getting more current, although I didn't increase the power of either. The light is more toward the blue end of the spectrum, it appears brighter. Having removed the cut off filter from the low beam makes a big difference in the light pattern too.

All in all I'd say it was worth it. I'll live with it a while and see if I want auxiliary lighting as well."

6.16.2 Replacement Headlights

Ducati Designs now has a replacement headlight kit for Ducati St models – this twin headlight kit has received rave reviews from owners.

<http://www.ducatidesigns.com>

6.16.3 Headlight-Gizmo

This device which allows the bike to be started without the headlight on. The headlight is off when the bike is started, and stays off until the bike is put into gear. The headlight will then stay on until the ignition is switch off!

The Headlight-Gizmo will work with the Ducati Designs headlight replacement kit.

<http://www.bike-gizmos.com>

6.17 Sidestand Bypass

From 199 to 2003, all Ducatis were built with an electronic engine cutout switch connected to the sidestand. The idea (sensibly) is that if the motorcycle is in gear and the sidestand is down, then the engine should not run.

Unfortunately, this design doesn't allow for the motorcycle to be started in neutral and run on the sidestand.

There are some low cost kits on the market that will allow starting and running of the motorcycle with the sidestand down, as long as the bike is in neutral. If the bike is put into gear with the engine running and sidestand down, then the engine will stop.

These kits will provide the convenience and still maintain the safety aspect.

Sidestand-Gizmo: Available from www.bike-gizmos.com

Evoluzione Bypass: Available from www.evoluzione.net

6.18 GPS Information & Experiences

6.18.1 Ducati GPS

Contributed by Robert Mohns

The "Ducati Performance Satellite Navigation System" is a Garmin StreetPilot III, with a kit including mounting brackets for Ducati ST, Monster and Multistrada, a 128 MB memory card, and the locations of all Ducati dealers worldwide pre-programmed. The Ducati GPS features a color screen, provides turn-by-turn directions, voice instructions via a headphone set, and a kit for automobile use. (The GPS also features the Ducati Performance logo screened onto its front.)

The Ducati GPS kit has been discontinued (as of January 2005). Some units were available at a substantial discount through a North American dealer that bought Ducati North America's remaining inventory (link?). As of February 2005 they are believed to be generally unavailable.

Priced at \$1600 at a time when the Garmin SP III it is based on had become available for less than \$1000, Ducati may have misestimated its customers' willingness to pay extra for the Ducati Performance logo and a mounting bracket.

See www.ducati.com for more information

6.18.2 Garmin StreetPilot GPS Colormap

From: Charles McCullough

"I use a Garmin StreetPilotGPS ColorMap. W/data cartridges and MetroGuide USA maps. Wouldn't leave home for a weekend on the bike (or car for that matter) w/o it

Get great deals on GPS equipment here:

<<http://www.advancedgps.com/>>

Then go here and get a mount for about any GPS unit made to put on your ST2/ST4/etc., etc.,

<<http://www.cycoactive.com/gps/default.htm>>

If they ain't got it, you don't need it.

And then go here to get all the good stuff to wire it up to the bike....

<http://www.jastek7.com/>"

6.18.3 Garmin eMap, Garmin GPS V

From: Warren Egger

"I'm definitely a GPS convert. I had the Emap mounted on my GS for about a year, via a custom mount by Alex Ortner - a jewel whittled out of aluminum in just a couple of hours - beautiful. The Emap was a great tool for getting around the country and getting through unfamiliar cities. After seeing Arch's Garman GPS V in action, I had to get one. It's compact, portable, and has built-in auto routing. Tell it where you want to go and it will plot a route using it's base map or the detail maps that you download into it. It will turn you on to a whole new world of back roads if you get the Mapsource Metroguide map disks."

6.18.4 Garmin 2610/2620, Garmin 276

From: Archie R

"I'm not a fan of the 2610's touch screen. Nope. Gimme the tactile feedback of Garmin's familiar buttons, especially important with gloves on. Also, the 2610 lacks battery power and when we're out in the sticks it's sometimes nice to work on routing & such over lunch. The 276 charges through its power cable on the bike and runs off the battery pack when removed.

We've been using GPS since the original GPS III hit the streets and I've had various different Garmins between

then and now. The 276 is simply a leap ahead and, IMHO, worth every penny.

Top service...

<http://www.gpsdiscount.com>”

6.18.5 Garmin GPSmap 276C

From: Mike Mullen

“The **GPS276C** is a nice unit for motorcycle use because it has an excellent screen, customizable display and many useful features.

<http://home.comcast.net/~mmullen38/GPSMAP276C.html>

<http://home.comcast.net/~mmullen38/Photos/P4260002.JPG>”

6.19 Miscellaneous

6.19.1 Sport Touring Comfort Kit

During 2001, Ducati made available a “Comfort Kit” for the ST range of bikes. Pictures appeared on the Ducati Website, and caused some interest, mainly because of the more aggressive look it gave to the bike.

Justin gives us the gossip:

“I've just spoken to my local dealer, so here's the drum.

It's a kit called a 'Comfort kit', which includes Fairing, clear screen, bar raisers, and headlight splitter. Parts are NOT available separately.

It only comes in Red, Silver and unpainted. Why they chose to advertise with a yellow photo - who knows! (bring on the comments about Yellow being more aerodynamic etc etc)

Price:

Painted - AUS\$747 - roughly US\$382 - UK 265

Unpainted - AUS\$638 - roughly US\$325 - UK 226

Availability - well, it is Ducati - dealer reports that it could be weeks. “

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7. Part Equivalences

7.1 Steering Head Bearings

From John Stockwell:

“The steering head bearings are an oddball, I have tried to cross reference them but to no avail, they do fit a Renault car but could not find a model. The size is also an odd size. They are made by SNR, the #is BB40467, the size is 55mm OD [outer diameter], 35mm ID [inner diameter] & overall height 14.50. I have a used set so have just run the veniers over them. I tried SKF and several other bearing suppliers here in Australia but no luck, so run Ducati ones.”

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8. Travelling Tips

8.1 What to take

Here's Bill's list of what went with him to Switzerland:

Darien jacket	Darien fleece liner	Darien pants
gaiters	Sidi Champion boots	Gloves x 3
Gortex gloves	Neck gaiter	Pannier liner bag
Pannier covers	Motobag storage bag	Tank bag kit
Throttle rocker	Helmet	Extra visor
Anti fog	Helmet cover	Chain wax
Tire flat kit	Extra CO2	titanium Tire irons
Side stand plate	Saddle cushions	Sadl-Tite no slip grip
Shop rag	Shop towel	Ear plugs
1st aid kit	Tectron water proofing	Leatherman tool
Swiss knife	Hard candy	Cargo net
Cig. lighter adapter	Duct tape	Electrical tape
Screw driver(4-way)	Vice grips	Jumper cables
Allen wrenches	Extra headlight bulbs	Kayak dry pants
Tire gauge	Extra bike keys	Pillow
Jeans x 2	Chino pants x 1	Ex Officio shirts x 3
Tennis shoes	Texas	Socks x 3
T shirts x 2	Underwear x 2	Handkerchief
Blu Patagonia jacket	Fleece vest	Swim suit
Billed cap (light)	Water jug	Soap
Dock kit	Wallet	Passport
Intl. driver's license	WA driver's license	Photocopies of each
Hotel voucher folder	Maps/travel books	GPS
Digital camera	Various cash	PDA + AAA batteries
Reading glasses	Dark glasses	Flashlights x 2
Nylon clothes line	Net grocery bag	

Now, I ride double up. So the g/f has all her stuff along, too. We split the panniers 50/50. All the tool stuff goes in the Sargent tank bag or under the seat in the Motobag. Last year we had a top trunk which was great. Otherwise we use a waterproof river bag tied behind the passenger on the hand rail. She uses most of this space. They require space for such important items like curling irons, or hair dryers. I have a modified list of tools that i made up from Richard's ST-2 site. You must have special stuff like the correct socket to get those damn mirrors off, etc. We stay in hotels, so no camping gear.

8.2 Puncture Repairs

8.2.1 Removing the Wheels

Related to this is a tip on [reinstalling the rear wheel](#)

8.2.2 Removing and replacing the tyre

Anyone care to write this bit?

8.3 Comfort tips for long trips

The following tips were supplied by Michael Pagan. Different things work for different people – if you've got some tips, [we want to hear them!](#)

"Well, this is getting into areas of personal ergonomics, and I DO know riders who just seem to be able to go for hundreds of miles with no pain. Not me, though. Here are some tricks that work for me on 500-mile rides:

- 1) Get a new seat. There's the huge Corbin-vs-Sargent debate. The problem is, you'll never know until you put 200 miles on one which will fit. Motorcycle saddles are like ski boots that way. I'm lucky in that I found out early that my ass was Corbin-shaped. The odd thing is that a long distance seat will usually be harder rather than softer. It should also be wider to allow you to scoot around some.
- 2) Vary your sitting position. Every 15 minutes or so, change up! Left cheek, right cheek, lean forward, lean back. A little change allows blood to get to vital areas for comfort.
- 3) Get a throttle lock. Sure, it will help your wrists, but it will also allow you to scoot around on the seat more since you can ride with only the fingertips of your right hand on the bar. Be alert when you do this, as you aren't covering the brakes.
- 4) Carry a towel. Every other gas fill-up switch between sitting on the folded up towel or on the bare seat. This will change the pressure points and allow you to ride farther.
- 5) Try a gel seat or airhawk (in lieu of the towel in #4). I have an airhawk. They're nice but they're way expensive (\$175). It's a high-tech air mattress, really. The company's main business is selling cushioning systems for paraplegics to use in wheelchairs to prevent bedsores, so they know their sh*t. The airhawk is good for extra miles before butt burn, but it's even better to switch back and forth between a seat pad and no seat pad. Remember, pain comes not just from pressure points, but from having the *same* pressure points for a long period of time.
- 6) Ride with people who have small gas tanks. I ride with a guy who has a Triumph Speed Triple. That thing is on the fumes after 120 miles. This guarantees a rest stop every 2 hours or less (depending on speed). I hear Honda VTR1000's are good for this :-)
- 7) Ride faster! 500 miles at an average of 50 mph is 10 hours. 500 miles at an average of 75 mph is 6 hours 40 minutes. Less time in saddle = less butt burn.
- 8) Take the back roads. I've found that I'm way more saddlesore on the highway than on a twisty road. Problem is that the twisty road will double your travel time, so it evens out in the end.
- 9) Keep cool! Leather pants are safer, but denim jeans ventilate better. If you're hot, you sweat and stick to your riding pants. This causes Monkey Butt (go ask an Enduro rider what that is).
- 10) Try different riding gear. My Aerostich produces less butt burn than my leather pants. I think it's because the 'stitch slides around better on the seat and allows for more shifting of position."

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9. Suppliers

Who?	Where?	What?
Bike Gizmos	http://www.bike-gizmos.com/	Headlight Isolator, Sidestand Bypass Kit, Laptiming, Gear Position Indicator, Intercoms, chain cleaners and heap more.

Ducati Designs	http://www.ducatidesigns.com	Replacement twin headlight kit, mini mounting bracket for GPS etc.
VeeTwo	http://www.veetwo.com.au	Clutch slave cylinders, engine parts, other bits
Road and Race	http://www.roadandrace.com.au/	Various ST and Ducati parts
Pro Twins	http://www.protwins.co.uk/	Replacement seals
Staintune	http://www.staintune.com	Pipes!
Evoluzione	http://www.evoluzione.net/	Sidestand switch kit, replacement clutch slave cylinder, and other good bits.
BCM Motorsports	http://www.bcmducati.com/	Lots of great Duc stuff.
Dzus Fasteners	http://www.dzus.com	Dzus quick release fasteners
Heli Bars	http://www.helibars.com	Heli adjustable bars
Keykraft	http://keykraft.citysearch.com/5.html	Ducati keys
Ducati Insurance	http://www.ducaticycleinsurance.com/home.asp	Insurance
Morgan Designs	http://www.morgandesigns.com/	Decals
Jastek	http://www.jastek7.com	Replacement starter cables and powerlet plugs and sockets
Nonfango	http://www.nonfango.com/	Ducati luggage
MotoWheels	http://www.motowheels.com/	Ducati parts
Constructors Racing Group	http://www.constructorsrg.com/	Aftermarket levers and bar end mirrors

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10. Security

Alarms, locks, chains, guard dogs, pet rats.... Anything!

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11. What the Press think...

This is by no means a complete list, if readers would like to contribute sightings they're more than welcome.

11.1 Reviews

Reviews of ST's - magazines
Motorcyclist July 1998 pgs 52-62
motorcyclist February 1999 pgs 52-58 (includes pictures of ST crashed by Greg McQuide by wheelying it over the top!)

Cycle world March 1999, 48-54
Cycle world wrap up January 1999 pg 77
Cycle world wrap up date unknown pg. 98-99
Sport Rider February 2000 pgs 56-? ?-94
Ride February 2001 pgs 58-60
The French mag Moto Journal reviewed the ST4s in a group sports-tourer road test last year. I picked it up in a special compilation of road tests: "Hors-Serie Moto Journal", published in France last October 2001 http://www.motojournal.com/ (thanks to Tim Wren)
The British magazine Bike also did a sports-tourer group test that included the ST4s in September 2001. Bike did solo tests of ST's as follows: the ST2 in Aug 1997; the ST4 in Feb 1999; and the ST4s in June 2001. Road test reprints by phoning +44 1733 468196. No website that I'm aware of. (Thanks to Tim Wren)
Motor Cycle News have tested the bike several times. There's a compilation of these tests available at http://www.motorcyclenews.com/bikes/detail?sectionID=57244&documentID=4500 (Thanks to Tim Wren)
Reviews of ST's - online
Motorcycle Online http://www.motorcycle.com/mo/mccompare/twintour/ducati.html
http://www.motorcycle.com/mo/mcducati/00st4.html
http://www.motorcycle.com/mo/manufac.motml
http://www.motorcycleworld.com/articles_reviews/pro_review/Ducati-ST4_99.cfm
http://www.allmoto.com.au/1999sporttouring.html

11.2 Quotes

11.3 Accolades

11.4 Magazine Back Issues

Should you wish to read any of the above reviews, we would suggest that you contact the very helpful back issues departments of the above magazines. Even if the issue you want has sold out, they can usually arrange for you to get a photocopy of the article you are interested in.

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12. Useful Contacts

12.1 Internet Resources

Ducati official sites	
Australia	http://www.ducati.com.au/
Germany	http://www.ducati.de
Japan	http://www.ducati.co.jp
UK	http://www.ducati.co.uk
USA	http://www.ducati.com/

North America	http://www.ducatiusa.com/
Other Web sites	
Richards Excellent modifications pages	http://webpages.charter.net/strysnie/ducati/index.html
David Harvey's Ducati Site	http://www.users.waitrose.com/~paso/
Ducati Frequently Asked Questions	http://www.io.com/~duke/QuackFAQ.htm
General Ducati links:	http://www.dropbears.com/bikelinks/ducati.htm#tech
US Safety recall site:	http://www.safetyalerts.com/rcls/category/autosub/d-f.htm#ducati
Chris' ST Owners Pics and information	http://www.onewest.net/~ckirk/Bikes/STowners/SThome.htm
DucatiSuite	http://www.ducatisuite.com/
DucatiTech	http://www.ducatitech.com
USENET newsgroups	
	nntp://alt.motorcycles.ducati/
Mailing Lists & Bulletin Boards	
ST2 Owners Group (includes ST4 and ST4s owners)	http://groups.yahoo.com/group/st2_owners
Belt drive SS models	http://www.eGroups.com/reg/Ducati_ss
Beveldrive Ducatis: 'Bevelheads'	http://www.micapeak.com/lists/
General Ducati list	www.ducati.net
Paso & 907	http://www.ducatipaso.org
Ducati Monster	http://www.mostro.org

Note: if you find any of the above links invalid please contact one of the email ducati_st_faq@bike-gizmos.com

12.2 Real World Contacts

Anyone care to put their phone number in here?

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13. Owners Clubs

Owners Clubs	
Ducati Owners Club of Victoria (Australia)	http://www.docv.org
Ducati Owners Club of NSW (Australia)	http://www.docnsw.org.au
Desmo Owners Club	http://www.ducati.com/doc
Northern California Owners Club	http://www.norcalstdoc.com/
Ducati Owners Club of Great Britain	http://www.docgb.org/

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14. Acronyms and other “odd” information

14.1 Pronunciation

Depending on which country you are from, the “Ducati” name is pronounced in a number of different ways. Some variations include:

- “Doo-ka-tee”
- “Doo-kar-tee”
- “D-yoo-ka-tee”
- “D-yoo-kar tee”

But who really cares?

14.2 Nicknames

Ducatis have a few common nicknames, including:

- Duke
- Duc
- Duck

and the old favourite.....

- “c’mon, start you bastard....”

14.3 Naming your bike

Naming your bike is a very personal thing. Some people always name their bikes, others refuse to. For some reason, most bikes have female names. Draw your own conclusions! Here are some examples:

- Stephen Gendle’s ST2 – “The Duchess”

14.4 Acronyms

14.5 Games

14.6 Where can I rent a Ducati ?

Rentals are available at specialist bike dealers around the world. These are the ones that we know of! We try to keep the table below current, but please call the company listed for up to date information.

Remember that rental prices may not include riding gear. Some places will NOT supply helmets. Almost all will ask for a sizeable deposit, usually in the form of a pre-approved credit card voucher, which is returned on return of the bike in good condition.

Check opening times – to make sure you can pick up and return the bike when you want, and check any fees associated with one way trips.

Many rental companies require that renters be a minimum age of 25.... Ask, and ye shall know!

What?	Where?	How much?	URL / email
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ST2, ST4, Monster 750 and 900	BCM Motorsports 229 Messer Street, Laconia, New Hampshire 03246 Ph: 603.524.4898	US\$125 - \$175 per day. Cheaper weekend (4 day) and weekly rates	http://www.bcmducati.com/rentals.cfm info@bcmducati.com
Monster 600 and 750	Garners Motorcycle Rentals 179 Peel Street North Melbourne Victoria 3051 Australia Ph: +61 3 9326 8676 Fax: +61 3 9326 8717	AUD\$215 - \$264 per day. Cheaper weekend and weekly rates.	http://www.garnersmotorcycles.com.au sales@garnersmotorcycles.com.au
Supersport 750	Aussie Biker PO Box 120 Tewantin 4565 Noosa, Queensland Australia Ph: + 61 7 5474 1050	AUD\$145 for 6 hours Cheaper day, weekend and weekly rates	http://www.aussiebiker.com.au/html/rental.html dave@aussiebiker.com.au
Monster 600 and 900	Colorado Tourbike Rentals Ph: (720) 231-6349 Fax: (303) 399-0353	US\$100 - \$125 per day	http://www.tourbikes.com info@tourbikes.com
ST2, ST4, Monster 900s and Monster 750s. Supersport bikes are available in California by special arrangement	Ducati /Lotus tours Participating Rental Partners: Bruce Meyers, BCM Motors Sports, Laconia, New Hampshire 603-524-4898 John McCoy, Britalia Tours, Santa Cruz, California 831-476-3663	Daily, weekend and weekly rates are available and range from \$100 - \$150/day	http://www.ducatiworldtours.com/ info@bcmducati.com www.bcmducati.com info@britalia.com www.britalia.com www.britaliatours.com
Ducati ST2	Te Waipounamu Motorcycle Tours Ltd PO Box 673 Christchurch 8001 New Zealand Fax 64-3-377-3211 Cellular 64-25-331-534 Phone 64-3-372-3537	NZ \$215 per day, one week minimum	http://www.motorcycle-hire.co.nz/hireducati.html

14.7 Some “interesting” quotes from the Owners Manual

- “The terms **right** and **left** are referred to the motorcycle viewed from the riding position”
- “Never park on soft or uneven ground or your motorcycle may fall over”
- “Do not smoke while refueling”
- Coolant temperature indicator: Shows engine coolant temperature....”

- “If tyres need replacing, contact a Ducati Dealer or authorized workshop to make sure wheels are removed and refitted correctly”

14.8 Miscellaneous RUI (Really Useful Information)

14.8.1 Parts Pricing

Regarding parts prices (from Dan):

“Formula for estimating Ducati parts prices:

Fair price x 2 + more profit + stick it to ya + “you had better appreciate the fact that I’m selling this to you” + 15%”

14.8.2 Tips on painting

From Ian Ellis:

“It does take a little practice...

Here are some more tips on spraying:

- 1. Preparation is everything - if you're putting clear coat over clear coat there should be few problems, however if your panels are scratched or grazed you will need a sealant before painting it. If you don't you will see a 'rose' or ring around the area where the plastic meets the original paint (i.e. where sanded down plastic meets high gloss clear coat.)**
- 2. If you need to build up the area (such as a deep scratch or heavy graze) make sure you use a flexible plastic filler - some heavy duty car fillers aren't too flexible and will come away from the panel where it's sanded down to nothing with the vibration)**
- 3. If you're buying a gun and compressor make sure the compressor has an oil filter to prevent lubricants in the tank being pumped into the paint. Most modern compressors have these but it makes a big difference. As with most things in life you get what you pay for so go for a good quality gun, look after it and it will last you years.**
- 4. Spraying - Don't aim at your panel when you're starting, tiny drips of fluid may build up near the nozzle and you may need to blow these off first. Sweep over the area from off the panel sweeping left and right as you go down.**

There's loads more but this should get you going... If you're nervous go down to the scrap yard and get a bit to practice on first.”

14.9 ST Trivia

Did you know.....

- The ST chassis was used to derive the Monster S4 chassis
- The Monster and ST series were designed by Miguel Angel Galluzzi, who was also the designer for the Cagiva Raptor and V-Raptor.
- That if you look at your nice ST4s Marchesini wheels, you will find “Brembo” stamped on them.
- That some Ducatis (my 2001 ST2 anyway) have “Remus” stamped on the mufflers.

14.10 What's the fastest color?

The energy and effort which has gone into a discussion regarding the fastest color, best color and anything else related to color makes it worthy of mention here.

The "new" titanium colored ST4s was universally christened "Bat Barf". Thereafter followed a discussion on what color bat barf actually would be.

Garry conducted some extensive research, the results of which are worth posting here:

"Dear listers,

In an attempt to resolve the never ending and disruptive argument over which colour is the fastest in the Ducati ST* range I decided to perform an exhaustive experiment under tightly controlled conditions and produce a definitive answer to this highly vexing and contentious question.

To this end I appropriated, at great danger and no small personal expense, four brand new EXP20 Quality Pencil Eraser's, still wrapped in their original plastic and measuring 6*2*1cm, giving an overall volume of 12sqcm of plastic compound, from our comprehensively stocked stores cabinet (the CEO secretaries drawer). Each eraser, hereafter refereed to as 'Duc', was then carefully coated in one of the four Ducati colours (Red, Yellow, Blue and an horrible looking dull Grey that seems to have come from the wrong end of some ugly winged creature) from my wide-ranging collection of touch-up paints (PILOT Felt Markers). Each Duc was then dried in a hermetically sealed dust proof container (my bottom drawer) to avoid any contamination to the newly applied paint work. I considered that the fitting of wheels (aluminium binders), headlights (1cm drawing pins) and handlebars (paperclips), although ascetically pleasing and fun to make, to be an unnecessary distraction to the real purpose and nature of the experiment as they may add unwanted variances.

After drying, polishing with a fine grained polymer wax and buffing the Ducs were loaded onto a state of the art specifically summoned express elevator and carried to the designated test area (the roof of our ten story complex). Upon arrival at the test area each Duc was thoroughly checked by a team of qualified mechanics to be certain that they had not been damaged in any way during transportation and were deemed to be in mint condition, and the coolest looking erasers any of the spectators had seen in many a year. Each Duc was then carefully placed at the start line (edge of the roof) with 5cm distance between each and a wooden starter approximately 30cm in length and 5cm in height was placed behind them. The starter had previously been tested for straitness and continuity of width with an keenly calibrated optical device to avoid any possibility of a false start. An independent volunteer flag bearer stepped forward, a young blonde woman with incredibly light blue eyes, slim figure, long legs and pouting breasts wearing a short T-shirt and but I digress, and was given a slightly used almost white handkerchief bearing the letter 'G' in one corner with which to signal the beginning of the test.

The crowd was hushed, the breeze stilled, the sun came out from behind a little white fluffy cloud that vaguely resembled Mickey Mouse and the very air itself seemed charged with the electricity of the moment. The flag dropped the starter, the starter, the starter was staring at the pouting breasts and nothing happened. I decided it was time for affirmative action and personally took control of the situation. I placed both of my hands firmly over the offending articles to hide them from the view of the starter. When the ringing in my ears stopped and the blood dried on the corner of my mouth I took control of the wooden starter and waited. Again the flag dropped and as luck would have it I saw it in my peripheral vision. I pushed the starter forward, careful that both ends accelerated at the same pace. The four Ducs reached the point of no return and as though in some beautiful slow motion ballet, Swan Lake or perhaps the Nutcracker, they dipped over the edge and began their flight into destiny.

At first it appeared that Red had the acceleration to pull away from the pack but suddenly Yellow pulled up level with him and threatened to overtake. Unfortunately for Blue, Grey had weaved sideways after striking a downpipe and boxed him in but in an exciting move not often seen in modern GP Racing Blue bounced off the seventh story window ledge and in a one and a half pike 10 point tumble landed squarely between Yellow and Red. Grey soon began to show the effects of his strangely pocked paintwork and not only slowed but actually began moving backwards and in a totally unexplained phenomenon raced back up over the heads of the crowd, landed on the roof of the building next door and was out of the race, some later testified that this was due to some freakish gust of wind that caught Grey off guard but those that were there can assure you that this was not the case and a more plausible explanation is that Grey simply saw a small winged insect go past and his

natural instinct for food overtook him.

Meanwhile those three wacky races who were left were passing the fifth floor and still accelerating. At the fourth floor window Red slowed to appreciate the short skirted receptionists, but luckily this is a trait present in all Ducatis so there was no penalty. At the third floor Blue appeared to be a little worse for wear and friction bubbles were beginning to appear on his nose cone. With his aerodynamics badly affected Blue span sideways, began to slow dramatically and was basically no longer a contender. Red and Yellow were neck and neck at the second floor. Now Yellow, now Red, Yellow, Red, Yellow, Red. Almost at the first floor and Yellow in a superlative burst of acceleration took the lead and sped towards the finish with his front wheel off the ground and his left fist raised in triumph. Red valiantly tried to catch up but just didn't have the legs for the finish. Yellow hit the pavement first, bounced up one story, performed a double roll with arms outstretched, blew a kiss to the girls at the window and landed back on the pavement. Red finished second, bounced forwards out onto the four lane road, sideways off of a 328i BMW windscreen, through a red traffic light and was last seen explaining himself to the local constabulary and pointing towards the roof of the building. Blue finished third hitting the pavement and bouncing high into the air and landing on the top of an eighteen wheel semi-trailer. He was spotted laying there on his way to Melbourne with little wisps of smoke coming from his nose cone. Grey was never seen again but workers leaving the building late at night swear that a ghostly shadow often swoops at them from above emitting an eerie 'duc duc duc duc' (which the invariably do).

Conclusion – In a free fall situation Yellow has less wind resistance and ipso facto more acceleration. Carrying this over to the real world, with agreement that this experiment occurred in an almost cartoon like environment, it can be assumed that if all else on the bike is comparable then a Yellow Ducati paint job will certainly make you go faster, look more attractive, have bigger biceps, more hair (my personal favorite), a bigger bank balance and a milkier latte. All those present at the testing agreed however that no matter what the colour nothing is as sexy as a finely tuned Ducati.

I hope that this clears this question up once and for all ;-)

Garry

PS – The control eraser painted in Honda Racing Red is still finishing and was last seen passing the third floor.”

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