WING TIPS

2ND EDITION

INTRODUCTION

This booklet of information on the Honda Gold Wing has been published by the Gold Wing Club of Great Britain. It is not an attempt at a full blown workshop manual, as these can be bought at any motorcycle shop. What it contains are facts, hints and tips that are not normally to be found in such a manual, it has been put together from information sent in by the members of the club, showing easier methods of servicing, methods of repairing items normally thrown away, and ways of improving the performance of the Gold Wing.
As more hints and tips are sent to the Club, so this booklet will grow and be of more use. So if you have an idea, or have found an easier way of doing something, send it to the Technical Editor of the club, and it will be added to this booklet. It doesn't have be word perfect, so long as it makes sense it will be typed out and added.
If your topic requires drawings, then these can also be drawn up, but please send in a sketch to show what is needed.
Wherever possible the hints and tips included in this booklet have been checked to ensure that they do not in any way make the Gold Wing unsafe to ride, and the GWOCGB reserves the right not to publish an article on these grounds.
Although every care has been taken to ensure that the material contained within this booklet is correct. The GWOCGB cannot be held responsible for any damage that may be incurred due to errors within this booklet.
The Gold Wing Owners Club wish to express there thanks to the following people for their assistance in the production of this booklet.

Honda UK

Those members of the GWOCGB who have sent in topics to be published.

Bryan Moore who originally put this first edition of this booklet together in the mid 1980's

Keith Cross
Technical Editor
2005

INDEX		
MODEL/S	ITEM DESCRIPTION	PAGE No

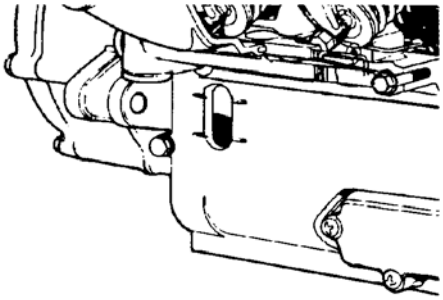
ROUTINE MAINTENANCE

INTRODUCTION

Most of us are used to going out of the house, starting up the bike and riding of into the distance without worry about whether the bike is going to start first time or not. It does pay occasionally though to get up a little earlier and check the bike over to make sure that everything is up to spec.

ENGINE OIL

For 1000 and 1100 models place the Gold Wing on its main stand, and leave it to stand for a few minutes to let the oil drain into the sump. Check the oil level through the inspection window sited below the oil filler hole. Maintain the oil level between the two marks. If the window is dirty, use a screwdriver to turn the wiper and clean the inside of the glass.



Oil Level Window

For 1000 and 1100 models place the Gold Wing on its main stand, and leave it to stand for a few minutes to let the oil drain into the sump. Check the oil level using the dip stick, located on the right hand side of the engine. You will have to remove the cover on 6 cylinder models to gain access.

TYRES

Taking each wheel in turn, rotate them and examine the tyres for signs for damage. Prize out Oil Level Window any embedded stones. Check the tyre pressures.

ENGINE

Look under the front of the engine below the water pump. You will find a small hole about 3mm in diameter. If water or oil is dripping from it than the seal on the water pump is beginning to fail.

BATTERY

Remove the left hand side panel and examine the battery. Wash off any signs of corrosion on the terminals with warm soapy water. Check that the electrolyte level is between the maximum and minimum levels. If not then top up with distilled water.

CABLES

The control cables on the Gold Wing deteriorate so slowly that you don't always notice how bad they are getting. With the engine off, check all the cables as follows:

Open the throttle wide let it go and it should snap shut. Pull the clutch cable in. It should feel smooth and be light enough to pull in with two fingers. Pull the choke cable out. It should pull out easily, and stay out and not slowly fall back in. If it does not stay out then tighten up the 14mm plastic nut just behind the fixing bracket.

When parking your bike overnight, especially in winter, pull the choke cable out. Control cables have been known to freeze in place and at least this way you can start the bike, after which it will thaw out and you can push the choke off.

COOLANT LEVEL

Start the engine and let it warm up to normal working temperature. Inspect the radiator header tank (the exact method will depend on which version of the Gold Wing you have). Top up if necessary. DO NOT attempt to remove the radiator cap as the coolant will be hot and under pressure and may burn you.

THROTTLE CABLE ADJUSMENT

Measure the throttle grip free play. It should be in the order of 1 to 3 mm.

To adjust the free play, loosen the lock nut and turn the throttle cable upper adjuster.

AIR FILTER

INTRODUCTION

The air filter on the Gold Wing is a paper filament type and it is sited on top of the carburettors.

REMOVAL

The exact method of removal of the filter element will depend on which version of the Gold Wing you have but in general, access to it is gained through the top of the dummy fuel tank, or under the audio unit. Open it up, remove the tool tray/air pump/accessories and this will reveal the top of the air filter.

Undo and remove the air filter cover screws and remove the top of the air filter box. The element can now be lifted out.

CLEANING

Blow of any loose dirt on the element using an airline blowing out from the inside. If the air filter is too dirty, it will have to be replaced, as it cannot be washed. It is a good idea to replace the filter with a K&N filter, as this is washable and re-usable.

Fit the cleaned/new filter back in its housing and refit the top of the air box.

Replace all other items removed.

CHANGING AN OIL SEAL

INTRODUCTION

If oil is dripping from one of the oil seals on your motor, such as the one on the gear lever, don't panic, it doesn't mean a complete engine strip to change the thing. You should be able to replace it in under an hour without using any special tools.

TOOLS

No special tools are needed to change a seal, it can be done using 2 self tapping screws (4 on a larger seal) and a bradawl.

PREPARATION

All the seals on the GoldWing are above the oil level mark, so you won't have to drain the oil. You may have to remove a few items though to make enough space around the seal to work in depending on which one you are replacing.

Once you have done that, clean the area around the seal to remove any dirt and oil and you're ready to change the seal.

REPLACEMENT

To remove the old seal, pierce it with the bradawl in 2 (or 4) places and screw the self tapping screws in until you feel them start to bear against the bottom of the oil seal housing as shown in the picture below.

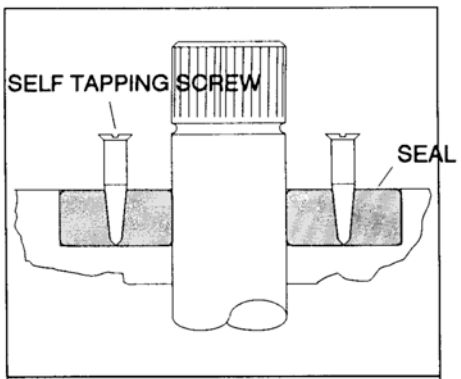
Continue screwing in the screws, half a turn at a time until the seal is forced out of its housing.

Once you have got the old seal out, clean its housing to remove any oil and dirt.

Make sure that there are no remains of the old seal still stuck in the housing.

Smear a little grease around the housing and around the seal (molybdenum Disulphide grease if you have some) and place it over the housing.

Using a rubber or wooden mallet tap it gently until it is seated correctly. Take care not to hit to hard, or you will end up damaging it. It is best to work your way round the seal so that it is tapped as squarely as possible. Refit any other pieces you removed, and you've finished.



Changing an Oil Seal

USEFUL ITEMS TO CARRY WHEN TOURING

Many riders do not seem to plan for breakdowns when touring, but the items listed below do not take much room and can help effect a temporary repair get you going again.

- PVC tape –to insulate repaired broken wires, stick broken items together etc.
- Electrical Wire – to replace damaged wiring. This can also be used for tying an item to the bike.
- Zipper clips – to tie things on the bike.

SPECIAL TOOLS

While working on various tasks on Goldwing's I have found that with a little ingenuity, most tools can be made with limited hand tools or by a reasonably competent machine operator.
By making tools yourself or having them made by a small workshop a large saving can be made. For example, the special socket for undoing the clutch basket retention nut on the GL1500 was £78 plus VAT from Honda in 1998. I purchased a 42mm 12 point socket from a local supplier for £8, cut it in half and had a section welded in creating the long reach socket required (note at the time the only alternative supplier for a 42mm long reach socket was Snap On (also expensive). The cost to have this section welded in should not exceed £10.

SIMPLE TIPS

Here a couple of items often missed by home mechanics:

1. Crankcase Breather
From the later models of the GL1100 up to the latest GL1800s it is important to ensure the crankcase breather tank or pipe is emptied on a regular basis. It is worth checking monthly if the bike is used regularly. The consequence of not carrying this out is that the water that is collected may back up to the air filter box and cause running problems.

2. Clutch Lever Pivot Bolt
On the 1200 and 1500 models the clutch lever has a brass bush fitted. The operating rod for the clutch master cylinder fits into a hole in this bush. Failure to lubricate this bush will cause wear to the clutch lever and bush. In severe cases it can also effect the operation of the clutch.

3. Rear Wheel Drive Splines
I have found that many bikes have suffered premature wear of the rear wheel spider and rear wheel bevel box splines. The cost of replacement parts and labour can easily reach £1000 as this work is normally beyond the knowledge of the average home mechanic. To prevent this, regularly remove the rear wheel and apply a good moly type grease to the splines.

4. Anti Dive Bearings
On models fitted with anti dive the front fork leg has a bearing located where the front brake calliper is mounted. On the four cylinder models this is just a bush, on the 1500 it is a needle roller bearing. While carrying out servicing occasionally lubricate this item with good quality grease. This will prevent premature wear in this component. This wear cause the calliper to `float', decreasing the efficiency of the brake.

6. Honda Luggage.
On the luggage supplied as standard on the four cylinder models the pannier lids are removable. While this is useful, it has been known for them to come off when riding. Apart from the inevitable scratches, my luck means that they will only come off when in front on a lorry. This lorry then runs over the pannier lid resulting in much cussing and when told the cost of a new one. The aftermarket accessory manufactures sell cords to prevent this happening. With a little ingenuity it is easy to make your own using 4 lengths of cord and some small electrical ring type crimps. The idea is that the length of these cords allows the pannier lids to be rested by the side of the panniers when loading.

7. 1500 Top Box Problems
When fitting additional lights to the top box of earlier 1500 models it is possible to re-assemble the lock mechanism incorrectly. This will result in the top box closing and the opening lever being disengaged. To undo the top box, remove the bottom panel and, shining a torch up into the mechanism, locate the bar that is a different colour to other two. Pull on this bar with a piece of stiff wire such as welding rod or a straitened coat hanger. The top box will then open. Remove the mechanism and carefully re assemble it, making sure the opening mechanism is engaged correctly.

PREPARING FOR A TRIP

When planning a long trip most riders carry out the normal checks such as Battery, tyres pressures, oil levels etc, but while these checks are ok for shorter trips, it is advisable to carry out other checks for the longer trip or touring holiday. If the trip is to be over say 2000 miles, it is advisable to carry out a full service before leaving as a precaution. After all if you intend to do 2000 miles, the trip will probably exceed this by a considerable distance. Other items worth carrying out are greasing of the final drive splines. The tyre and brake pads should also be looked at critically, will they really last the trip. It is far better to return safely with plenty of life left in these items than to have to replace them during the trip.

It is also worth considering fitting one of the puncture preventative products. A puncture can have serious effect on your trip. Apart from the possibility of an accident occurring, the cost of fitting replacement items can make a large dent on your spending money. Please note however that some tyre manufacturers such as Bridgestone do not recommend fitting these products

In addition please see tip for items worth taking along. These can help either you or another person help to get the bike going until a proper repair can be carried out.

When planning a trip it is also worth the cost of a call to the club's International rep for up to date advice on local regulations and customs that may have a bearing on your holiday.

TALKING TO YOUR MECHANIC

Despite what the title may suggest, this article is not to do with how polite you have to be to your mechanic, although this obviously helps.
This article has been written after the experience of mechanics generally. Ask any Mechanic what one of his pet hates is and he will either say "the customer expects me to be clairvoyant" or "the customer or their friend has already looked at the bike and is stuck. They then deny touching any thing".
Here are some general rules when describing a problem to a mechanic

1. Tell the truth, if your symptom started to develop after a minor spill or after fitting an item, tell the mechanic. This will give them a good starting point.
2. Tell them if you or a friend has checked something but cannot find the fault. Most good mechanics appreciate that some owners will try to locate and rectify a fault themselves.
3. Make a note of any symptoms and when they occurred. Do not be afraid to mention anything, even the fact that the weather was warm and dry, tell the mechanic as it may have some bearing.
4. Collect any bits that may have fallen off, again these parts may help to diagnose a fault.
5. When describing a part, try to have a copy of a picture of the part and where it goes with you. Even a copy of the owner's manual helps. An item described as the "thing that goes on the what do you call it" makes things difficult.
6. Answer any questions truthfully. Do not feel embarrassed, the mechanic will probably have heard it before.
7. If you are telephoning a mechanic for some free advice, remember you are effectively costing him money. So if he seems blunt, he may be busy. Offer to telephone him later, at a more convenient time. Also don't ask him to call you back. He may get annoyed, as you are not only costing time, but the cost of the call and money potentially earned from working on your bike in the workshop.

Some of the above items may seem basic, but they may make a difference. Remember, if the mechanic is fault finding any help is appreciated and may even save him some time and you some money.

GENERAL SERVICING AND MAINTENANCE

Despite what many riders on the Gold Wing Motor Cycle think, completing normal service tasks, such as changing the oil and oil filter (the most important item to ensure the long life of the engine) are relatively simple and well within the capabilities of the average owner.
All that is needed is a few good quality hand tools a vacuum balancer set (for the carburettors) and a workshop manual.
The main advantage in doing the servicing yourself is that you know exactly what has been done and that no items have inadvertently missed. It can also be very useful, as by carrying out the servicing your self, you become familiar with the machine which can be handy, should you unfortunate enough to break down. There is also the added bonus of saving a reasonable amount of money over the years. This money can then be spent using your bike for that extra Wing Ding or Treffen.
One service item whose importance is very often underestimated, is cleaning. Cleaning helps to keep corrosion at bay and very often shows any loose fasteners or other potential problems.

WINTERISING YOUR GOLDWING AND PUTTING THE BIKE BACK ON THE ROAD

Many owners of motor cycles put them away for the long dark winter months. The problems that can be encountered doing this are as follows:

1. A flat or useless battery. Using a battery conditioner such as an Optimate can prevent this.
2. Oil naturally accumulates acids and other nasty chemicals during use. These could attack the inside components during its lay up. It is therefore a good idea to change the oil and filter on the bike before taking it off the road.
3. A bike that will not start. This can be caused by the bike just being left and switched off. Fuel then evaporates in the carburettors and forming a gum. This in turn may block the jets etc. To prevent this, turn the petrol off and let the bike run until it runs out of petrol (on the 1500 model this can be achieved be carefully disconnecting the vacuum pipe from the automatic fuel valve, this is located just in front of the fuel filler cap).
4. Put some fuel stabilizer into the fuel tank. This will stop the fuel becoming `stale'.
5. If possible, remove the spark plugs, spray some light oil into the spark plug holes and turn the engine over with the kill switch turned off. Replace the spark plugs.
6. Place the bike on the centre stand and block the front of the engine to ensure both tyres are off the ground.
7. Cover the bike to prevent dust accumulating on the bike. Remember to look at the bike regularly to discourage vermin making a nest in the bike.

When it is decided that the bike can be removed from storage the following should be carried out before the bike is taken out onto the road

1. Give the bike a good visual check over, remembering to remove any chocks that you may have placed under the bike. Pay particular attention to the braking system.
2. Check the tyre pressures.
3. Check the engine oil level and consider changing the engine oil and filter. It may not be required, but is worth doing for piece of mind.
4. Disconnect any battery conditioner that may be fitted.
5. Check the battery voltage and electrolyte level, topping up as necessary.
6. Check the fuel level and remember to turn the fuel back on (or reconnect the vacuum line if disconnected).

Remember, if the bike has been out of use then so have your riding skills, proceed carefully for the first few miles.

SERVICE

ENGINE OIL

INTRODUCTION

No motorcycle will run well for very long without good engine oil to lubricate it. A can of engine oil and an oil filter are relatively cheap compared to the damage that can be caused by running on old oil.

CHOICE OF OIL

Honda recommends the following types of oil for the Gold Wing:

Average Atmospheric Temperature	Recommended Oil
-10 to +49 c	20W-40 OR 20W-50
-15 to +40 c	15W-40 OR 15W-50
-20 to +40 c	1OW-40

Most Motorcycle dealers will recommend an SAE 10W-40 oil for a motorcycle without hesitating, mainly because it gives good protection when cold.

CHANGING THE OIL

Take the bike out for a run to get it good and warm. Switch it off, park it up on its main stand and change the oil as follows:

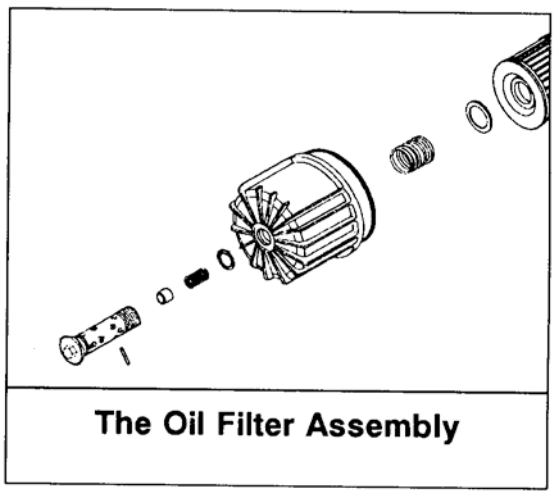
Remove the oil filler cap and place an old bowl under the drain bolt.

Remove the drain bolt and allow the engine oil to drain out. Take care, as the oil will be hot.

While the oil is draining out, remove the oil filter. Once the oil has finished draining, refit the drain plug.

On the 4 cylinder models fit a new oil filter element into the oil filter, and fit it back in place, not forgetting to fit the new 0 ring supplied with the filter element. On the 6 cylinder models fit a new oil filter. On all models apply a light coating of engine oil to the fitted `o' ring which seals the filter body to the engine case, with a light coating of oil.

NOTE: Do not over tighten the oil filter when fitting it back in place; otherwise it will be impossible to remove at the next service. If you have a torque wrench, then torque the bolt down to 20 - 24 NM.



The Oil Filter Assembly

Fill the engine up with the recommended amount of engine oil and replace the filler cap. Let the engine stand for a few minutes and then check the oil level.

WING TIP

If you find that the oil filter bolt on a 4 cylinder Gold Wing has been over tightened in by a previous owner, or that the flats have been rounded off, then you will need to do a little welding to get it removed as follows:

Place the bike on its main stand and disconnect the battery, rectifier/regulator and the alternator.

Using a Welder, weld a bar of about 12mm diameter and 100mm long to the head of the bolt.

Once it has cooled down the bar can be turned to loosen off the bolt.

Most good car garages should be able to weld the bar in place for you for a nominal sum.

ENGINE OIL SELECTION

Owners of the Gold Wing motorcycle are often confused over this matter. Honda specify a mineral oil of 10W40 viscosity with an API rating of SG. The reasons for this are as follows;

A thicker oil will take longer to reach vital engine components when the engine is cold.
A thicker oil may also cause problems with the hydraulic valve gear on the 1200 and 1500 models. The oil may `foam' trapping air in the oil and causing excessive play in the valve gear.
Oil with a higher API rating than SG may have additives that are not suitable for wet clutches. While there may not be any immediate sign of problems the clutch could eventually fail prematurely. All commercially available oils that I have encountered in recent years, sold for motor cycle use, have had an API rating of SG

As for choosing between Mineral, Semi Synthetic and fully Synthetic oils. The choice is yours. Bear in mind however that the Gold Wing engine is in a very lowly stressed unit and does not really warrant the additional cost of synthetic oil.
I personally use a good quality Semi Synthetic oil.
Another option is often to use a good quality mineral oil and change it more often than the frequency stated by Honda. Some would say that this is the best option.

ADJUSTING VALVE CLEARANCE
(1000 and 1100 versions only)

INTRODUCTION

Adjusting tappets on some motorcycles can be a time consuming and difficult job. Not so on the Gold Wing as all that has to be removed to gain access to them is the tappet covers themselves. Setting the tappets should take no more than a morning to do, and requires no special tools, although a good set of feeler gauges is needed.

CLEARANCES
The valve clearances are as follows:

	GLI000	GL1100
INLET	0.1 mm (0.004 in)	0.1 mm (0.004 in)
EXHAUST	0.1 mm (0.004 in)	0.13 mm (0.005 in)

PREPARATION

Since the engine must be cold before attempting to adjust the tappets, it is best to let your Wing stand overnight and start work on it in the morning. Prepare your bike as follows:

Place the bike on its main stand and remove any accessories such as fairing lowers that are likely to prevent you removing the cylinder head covers.

Remove the cylinder head covers by unscrewing the four bolts in each with a 10mm spanner. A little oil will spill out as you remove the covers.

Remove the timing hole cover (sited on top and to the rear of the engine - just in front of the fuel tank) using a large screwdriver.

Remove the inspection cap from the rear of the engine, in the centre of the alternator, using a 17mm spanner.

You are now ready to start adjusting the tappets.

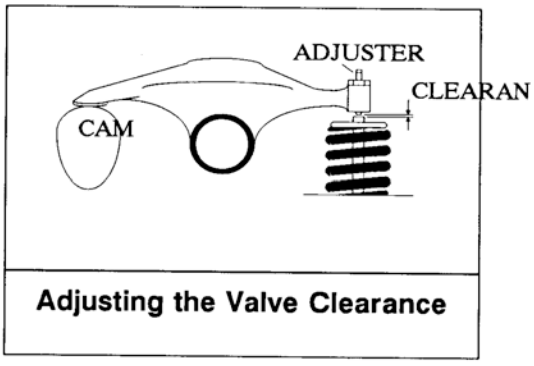
ADJUSTMENT

The tappets are adjusted as follows:

Using a 14mm spanner and turning the bolt clockwise (as you look at it), rotate the engine over until the Ti mark is lined up in the timing window with the index mark. If you overshoot the mark, don't turn the bolt backwards, but go round again. Cylinders 1 and 2 will now be at TDC.

Check that Piston No.1 is at TDC on the compression stroke, with both valves closed, not at TDC on the exhaust stroke with both valves slightly open. If they are, then rotate the crank one turn and re-align the Ti mark.

Slide a feeler gauge between the inlet valve tappet adjuster and the valve stem, and measure the tappet clearances marked 0 below



Adjusting the Valve Clearance

Using a 10mm spanner, loosen off the locknut on the tappet adjuster and adjust as necessary. Tighten the locknut and re-check the clearance. You will find that the tappet clearance will close up slightly when you tighten the locknut - allow for this when adjusting the clearance.

Once you are happy that the clearances are correct, rotate the crankshaft one full turn until the Ti mark lines up again. Piston No. 2 will now be at TDC on its compression stroke.

Slide a feeler gauge between the inlet valve tappet adjuster and the valve stem and measure the tappet clearances marked X below.

Adjust the tappets as described above.

	1	2	3	4
Inlet	X	O	X	O
Exhaust	O	X	O	X

Once you are satisfied that all valve clearances are correct, replace all covers and the job is completed.

FINAL DRIVE

INTRODUCTION

The final drive on the Gold Wing is lubricated with an EP (extreme pressure) oil. The drive will last for many years provided that the oil is changed when recommended. The amount of oil used and its is small, it may be worthwhile changing it at the same time as changing the engine oil.

CHECKING THE OIL LEVEL

Stop the engine and set the Gold Wing on its main stand on level ground. Remove the oil filler cap and check the oil level. The oil level should be level with the oil filler neck. If it is low, refill with recommended oil.

CHANGING THE OIL

Since oil on the final drive is extremely thick allow half an hour. Change the oil as follows:

Remove the oil filler cap.

Place a pan under the final drive casing and remove the oil drain bolt using a 10 mm spanner.

Leave the oil to drain for about half an hour if possible.

Replace the oil drain bolt securely and fill the final drive with recommended oil up to the specified level.

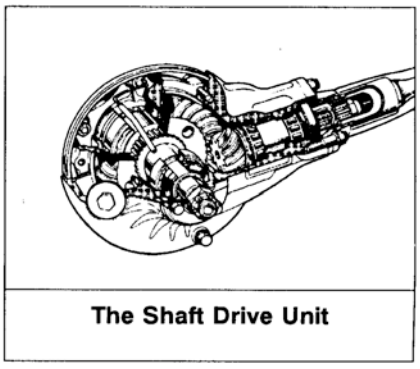
Capacity: 200-220 cc (6.8-7.5 oz.)

Recommended final gear oil: Gear oil conforming to GL-5

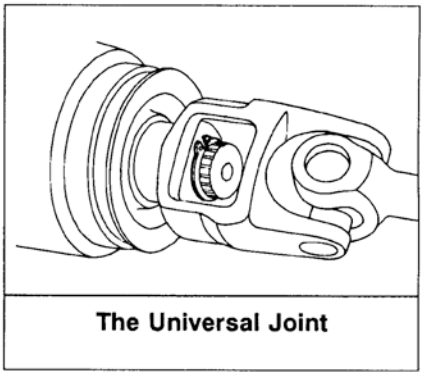
Atmospheric temperature Viscosity Recommended Oil

Above 5C (41F) SAE8O
Below 5C (41F) SAE9O

CAUTION: When filling, take care not to allow foreign matter to enter the gear case. - Do not let oil spill on the rear wheel and brake system parts.



The Shaft Drive Unit



The Universal Joint

DRIVE SHAFT

On all but the very early Gold Wing, there is grease nipple at the end of the swinging arm. Using a grease gun, pump approximately 20cc of general-purpose grease into it.

Pull back the rubber gaiter at the front of the swinging arm to expose the universal joint. This is a sealed item that cannot be serviced, but it does pay to smear a little grease over it to prevent it rusting. While the rubber boot is out of the way, check that the seal around the output shaft isn't leaking. If is then it will need to be replaced.

CLUTCH ADJUSTMENT

GENERAL

The 1000 and 1100 versions of the Gold Wing have a clutch sited at the rear of the engine that is operated by a cable. This clutch cable is adjustable at both ends. Additionally, there is adjustment on the clutch actuating mechanism.

ADJUSTMENT

Adjust the cable as follows:

Screw in the adjuster on the handlebar end of the cable until the cable is as slack as possible. Repeat this procedure on the bottom end of the cable.

Remove the Inspection cover/cap from the middle of the clutch cover.

Underneath the Inspection cap/cover, there is an adjuster and a locknut. Loosen the locknut by one turn using a 12mm spanner. Using a screwdriver, turn the adjuster until resistance is felt. Back off the adjuster by one turn.

Tighten the locknut, replace the Inspection cover/cap

Turn the cable adjusting bolt at the bottom end of the cable until there is about 10 - 15mm of free play in the cable.

Turn the cable adjuster at the lever end of the cable until there is 8 - 10mm free play in the cable. The clutch should now be correctly set up.

TIMING BELTS
(4 cylinder models)

INTRODUCTION

The Gold Wing is unusual in that cam belts rather than a more conventional cam chain or push rod system drives the camshafts. The great advantage of using belts is that they are quiet and very long lasting. The disadvantages of using belts are that they take up more room, don't like oil and do not like being unduly twisted. Examining and adjusting the belts is an easy job, but it requires great patience since access to them can be difficult.

PREPARATION

Place the bike on its main stand, ensure that the engine is cold and proceed as follows:

Remove the fairing lowers (if fitted).

Remove the two 6mm nuts at the top of the radiator, and the two 6mm bolts at the bottom. This will allow you to pull the radiator forward by about 25mm and give you a little more access.

Remove the timing cover, sited on top of the engine, just behind the carburettors.

Remove the inspection cap from the centre of the casing covering the alternator.

Remove the two bolts in each of the cam belt covers. Make a note of the position of each bolt as they differ in length.

The cam belts can now be adjusted.

INSPECTION AND ADJUSTMENT

Examine the belts for signs of wear and tear. The teeth on the belt should be clean and square. If the corners are rounded off, or show signs of damage then the belts should be replaced. If the belts are in good condition, then adjust them as follows:

Using a 12 mm socket spanner on the end of the alternator centre nut, turn the engine over until the Ti mark (as shown on the figure) on the crankshaft lines up with the index mark on the timing hole. The timing marks on the cam belt pulleys should now both be pointing outwards, and lining up with the marks on the engine (as shown on the figure). If not, then turn the crankshaft over through 360 degrees and check again.

Loosen off the two 8 mm bolts securing the LH tensioner system in place and adjust the tension on the LH belt until there is approximately 15 mm play on the longest length of the belt. The spring on the tensioner system should do this, but it often needs a helping hand. Tighten up the 8mm bolts while holding the tensioner in place.

Repeat the procedure for the RH belt.

The belts are now tensioned and all covers can now be refitted and the radiator secured back in place.

ENGINE COMPRESSION

GENERAL

An engine compression gauge is used to determine how great the pressure is in the combustion chamber at the top of the compression stroke. It can be used to determine whether an engine is in need of a decoke, a reborn or the valves need reseating.

PROCEDURE

Place the bike in the main stand and proceed as follows:

Remove the spark plugs.

Fit the compression gauge to the cylinder to be tested ensuring that the fit is gas tight.

Make sure that the KILL switch is in the off position, fully open the throttle and spin the motor on the starter motor.

Note the reading on the compression gauge and repeat the procedure on the other three cylinders.

Ideally, the engine compression should be 171 psi

If any cylinder has a reading of over 199 psi, it is a good indication that the engine should be decoked.

If any cylinder has a reading of below 142 psi, it is a good indication that it is losing compression past either the piston rings or the valves.

NOTE: On many engines, it is possible to pour a little engine oil down through the spark plug in or to determine whether it is the rings or the valves that are leaking. Since the cylinders on the Gold Wing lay horizontally, this test does not work.

MAJOR WORK

REMOVING THE ENGINE
(4 cylinder models)

INTRODUCTION

There are few tasks that require the engine to be removed from the frame other than for a complete engine strip. Tasks such as changing the clutch and decoking the cylinders can be done with the engine still in the frame. The Procedures detailed here are based on removing a GL1000 motor, but are essentially the same for all versions of the Gold Wing. The method described here entails removing more items than is really necessary, but will allow more clearance when manoeuvring the engine out of the frame.

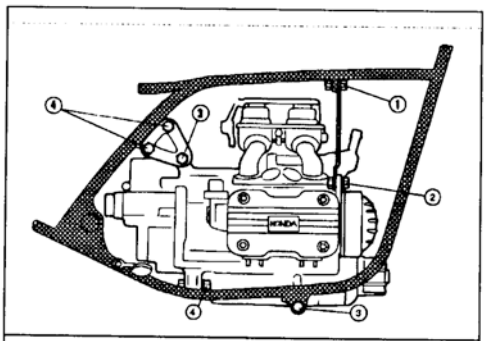
SPECIAL TOOLS

A right-angled pair of circlip pliers will be required to disconnect the shaft drive on the 1000 and 1100 models. A trolley jack will also be required to take the weight of the engine.

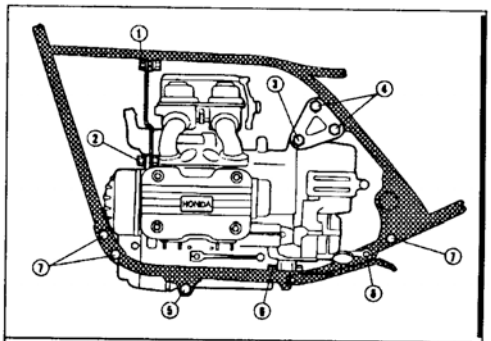
REMOVAL

Ensure that you have plenty of space in which to place items as they are removed and proceed as follows:

The engine of coolant and oil. The coolant drain plug is located on the front of the engine on the left hand side of the water pump cover. The oil drain bolt is located under the oil filter. Remove the oil filter.
Detach the choke cable from the carburettors.
Remove the inspection cover from the rear of the engine and detach the clutch cable.
Remove the fuel pipe running between the tank and the pump and between the pump and the carburettors. Disconnect the throttle cables from the carburettor assembly.
Disconnect the cable from the starter motor. Disconnect the tachometer cable.
Remove the bolts securing the silencers to the frame at the rear footrests. Loosen the bolts securing the manifolds to the header pipes. Remove the 4 bolts in each cylinder head securing the manifolds in place. The exhaust system can then be manoeuvred out and stored in a safe place.
Open up the dummy fuel tank and remove the tool tray. Remove the two hand nuts securing the dummy side panels.
Open up the air box and remove the air filter. Unscrew the two bolts inside and remove the air box.
Loosen the clamps securing the top and bottom water pipes onto the radiator. Remove the four nuts securing the radiator to the frame and pull it forward about 50 cm. Disconnect the fan. Turn the handlebars to full lock and remove the radiator.
Remove the air cut-off mechanism from the carburettor assembly. This unit is located on top of the assembly at the front and slightly to the right. Take care not to lose the two 0 rings as you lift it clear.
Loosen the clamps securing the manifolds to the carburettors. Remove the bolts securing the manifolds to the engine and pull the manifolds off. The carburettor assembly can then be manoeuvred out to the left and clear of the
Place the trolley jack under the engine and raise so that it just takes the weight of the engine.
Remove all of the engine mounting bolts, along with the heat shield, and removable section of the left hand lower frame.
Raise the engine so that it is just clear of its mounting points.
The engine can then be removed from the frame by pulling out to the left. Take care to ensure that the motor does not topple off the trolley jack in the process.
Pull back the rubber gaiter covering the drive shaft and using the circlip pliers, disconnect the drive shaft. Push the drive shaft backwards into the swinging arm as far as it will go.
Disconnect the engine sub harness.



RH Engine Mounts



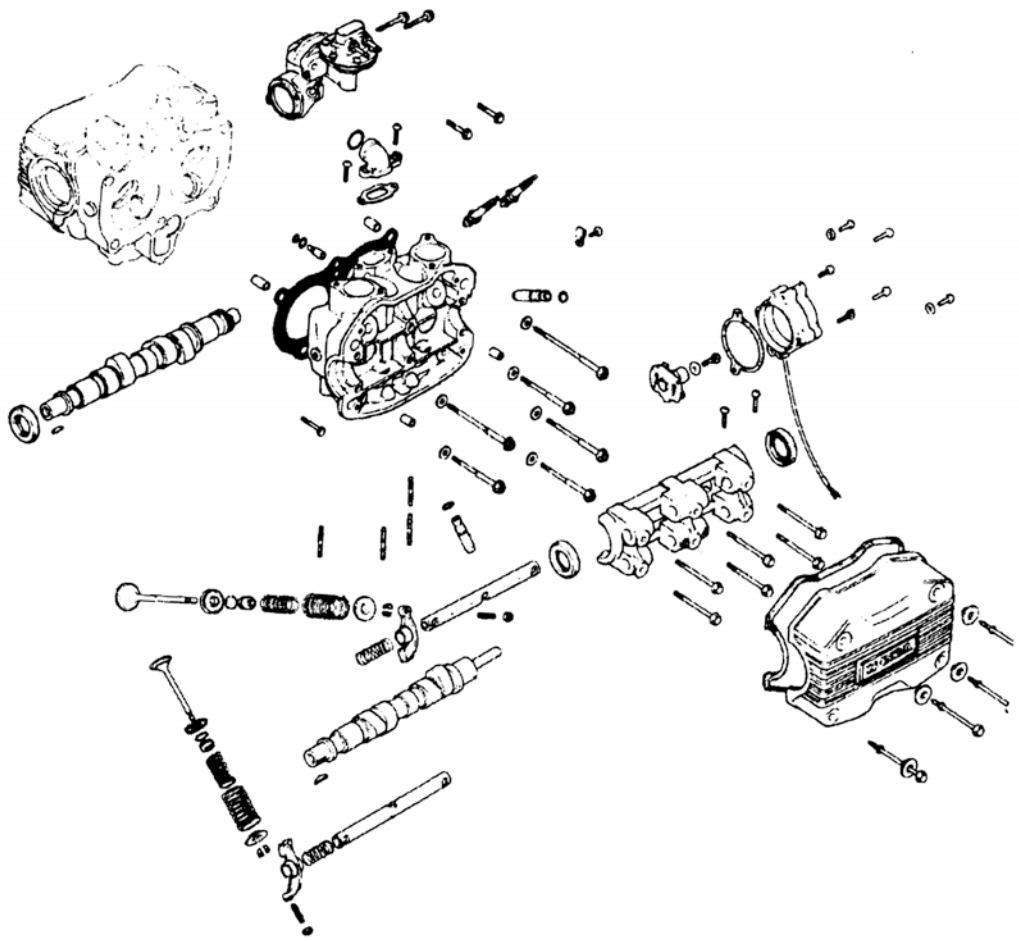
LH Engine Mounts

CYLINDER HEAD ASSEMBLIES
(1000 & 1100 models)

INTRODUCTION

The Gold Wing has two cylinder heads. They are both totally separate and there is no need to remove one simply because the other side has to be removed. Other than the fuel pump and the points housing the dismantling procedure is the same for both heads. The left hand head has to be removed if you are splitting the crankcase. The right one does not unless you intend to remove the pistons. The engine does not need to be removed from the frame to remove the cylinder heads, but this procedure assumes that it has.

The Cylinder Head Assemblies



SPECIAL TOOLS

No special tools will be needed.

PREPARATION

Once the external surfaces of the engine have been cleaned, proceed as follows:

Remove the pulley covers. As a safety measure, use a 19mm spanner on the large bolt on the front of the crankshaft and carefully turn the motor over (in a clockwise direction as you look at it) until the timing marks on the cam

pulleys face outwards and line up with the timing marks on the engine, when you remove the spanner the engine will rotate slightly, don t worry about this as it will close enough.
Use a marker pen to identify each belt so that it will be put on the same side and the same way round when it is refitted. Loosen the bolts securing both tensioner assemblies in place. Back the off to their full extent end then tighten the securing bolts again. With the belts now as loose as possible, gently work them of the pulley system. Take care not to bend them unduly.
To remove the Cylinder Heads, proceed as follows:
Remove the Points housing or petrol pump as appropriate, and tie them back out of the way. Remove the two 6 mm bolts holding the top water pipe to the cylinder head. Remove the 6 mm bolt sited at the bottom of the head between the exhaust ports. Disconnect the lead running to the Neutral light switch (not on the Later 1lOOs)
Remove the Rocker cover. Remove the 6 bolts securing the head in place with a 14 mm spanner. The cylinder head is now ready to be removed. It may need to be persuaded by gently tapping it with a wooden mallet.
Once the cylinder head has been placed to one side, remove the oil restrictor from the crankcase after first making a note of which way round it fits into its hole.
Remove the cylinder head dowels if possible. Once this has been done all traces of the old gasket must be removed from both the head itself and the crankcase. This can be done using an old razor blade, or a scraper, taking care not to mark the surfaces. Once all of the old gasket is cleaned off, gently rub both faces with a scouring pad to polish them up.
Clean up the water pipe fitting on top of the engine and check that the 0 ring is in good condition.
You are now ready to start rebuilding.

REPLACING THE CYLINDER HEAD

Once all of the components have been cleaned, rebuild the head as follows:

Replace the dowels, followed by the oil restrictor and its 0 ring. Hang the new head gasket on the cylinder head dowels. Look at the bottom centre section of the gasket to ensure that it is on the right way round.

DO NOT APPLY ANY GASKET CEMENT.

Ensuring that the water pipe on top of the engine enters into its elbow joint, offer the cylinder head up to the crankcase. Secure it in place with the 6 main cylinder head bolts
Torque down these bolts to 4ONm, and then replace the 6 mm bolt at the bottom of the head.
Refit the Rocker cover. Refit the exhaust pipes, secure the carb manifolds in place, and then reconnect the fuel pipes to the petrol pump. Refit the cam belt, ensuring that the engine is still at its Ti mark, and that the index mark on the pulley lines up with the index mark on the casing.
Crank the engine over slowly by hand to ensure that the valves do not hit the pistons.
Refit the cam belt cover. Secure the radiator back in place, refill it with coolant and the job is completed.

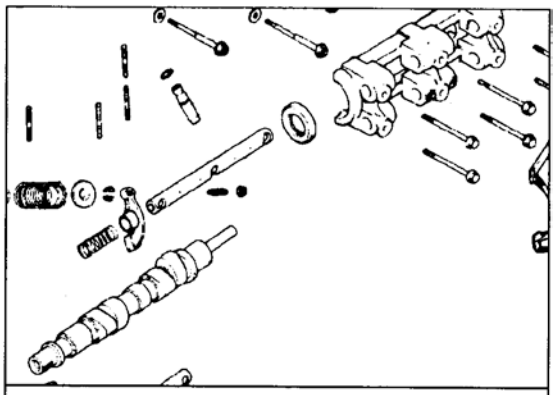
ROCKER ARM SHAFT REMOVAL

Remove the Rocker Arm Assembly as follows:
Carefully grip the cam belt pulley in a vice, using strips of wood to prevent the pulley teeth from being damaged. Remove the 8 mm bolt securing it in place. Pull off the pulley, taking care to catch the woodruff key as it is removed.
Unscrew the 2 6 mm bolts holding the rear pulley cover to the cylinder head.
Remove the 6 off 8 mm bolts securing the rocker arm assembly in place. The rocker Arm assembly can now be removed from the head. The camshaft, complete with the oil seals can now be lifted out.
Using a drift, carefully punch out the rocker arm shaft out of the assembly taking care to catch the rocker arms and springs as you do so. Make a note of the position of each rocker so that it can be put back it its original position.

VALVE REMOVAL

Punch four holes in a piece of cardboard with a pen and mark them so that you can identify each valve set for reassembly, to ensure that it goes back in its original position. You will need a valve compressor to do this. Any commercial compressor should do but the correct Honda tool is Tool
No.07957-3290001.
Remove each valve as follows:

Use the valve spring compressor, and remove the valve and its spring, seat and valve retainer. Push the valve through the cardboard and put its associated items with it.



The Rocker Arm Assembly

Repeat this operation for the other valves. The valves and seats are now ready for inspection.

VALVE REPLACEMENT

Replace each valve as follows:

Smear some engine oil over the valve and insert it into its guide. Replace its seat, spring and retainer. The valve springs are of the variable pitch type and should be installed with the Close pitch end towards the end. Compress the spring and insert the collets.
Remove the compressor and using a hide mallet, gently tap the valve collets to ensure that they are correctly in place.

ROCKER ARM AND ROCKER ARM SHAFT ASSEMBLY

Assemble the rocker arm as follows:

Place the Rocker Arm Assembly on a flat surface and loosely position the valve rockers and springs in place. (If you cant remember how they should be laid out, look at the other cylinder head). Push the shafts into position. Make sure that all the rocker arm shafts rotate freely.
Lubricate the camshaft and seals and place then in position in the cylinder head. Place the Rocker Arm Assembly in place and secure it with the 6 off 8 mm bolts.

CYLINDER BLOCK ASSEMBLY
(4 cylinder models)

GENERAL

The Gold Wing engine is unusual for a motorcycle in that the barrels are cast into the main engine casing to form a complete cylinder block. This does save weight and space but does entail extra difficulties when attempting to replace the piston rings etc. Splitting the cylinder block assembly is difficult to do, so do not decide to do so unless you have good reason for doing it.

PREPARATION

Prepare the main casing for disassembly as follows:

Remove the carburettors.
Remove the engine.
Remove the timing belt.
Remove the rear case.
Remove the front water pump casing
Remove the LH Cylinder Head (the RH head need not be removed unless you intend to do a complete engine strip.
Remove the 2 off 6 mm bolts securing the starter motor in place and using a hide mallet, tap it loose of the main casing. Remove and store the starter motor drive sprocket.
Remove the 6mm bolt securing the drive sprocket to the oil scavenge pump (located below and to the left of the clutch), remove and store the sprocket.

The cylinder block is now ready for disassembly.

CYLINDER BLOCK DISASSEMBLY

Ensure that the surrounding area is clean and spilt the crankcase as follows:

Remove the securing bolts in the right cylinder block, followed by the bolts in the left cylinder block.
Turn the engine so that it is standing on the RH cylinder block. Take care to protect the surface of the RH cylinder.
Raise the LH cylinder block clear of the engine. The block may nee to be tapped with a hide mallet to break the seal between the two halves. As the two halves separate, support the pistons so that they do not get damaged.

CYLINDER BLOCK ASSEMBLY

Assemble the cylinder block assembly as follows:

Ensure that the mating surfaces are clean, and smear a thin layer of BLUE HYLOMAR on them.
Carefully rotate the crankshaft until the two pistons are at mid stroke, and smear a little engine oil onto the piston rings and in the cylinder bores. Ensure that the gaps in the piston rings are not lined up.
Special tooling is available from Honda for inserting the pistons into the cylinder bores. This procedure assumes however that these tools are not to hand.
Lower the RH crankcase onto the engine until it is just above the bores. Continue to slowly lower it, rocking gently backwards and forwards until the piston rings enter the bores. The bores are heavily chamfered to aid this process. Lower the crankcase completely.
Replace the bolts securing the two halves together. Tighten the bolts down in two or three stages to exert even pressure and not distort the casings.
Replace the sprocket to the oil scavenge pump.
Replace the starter motor and its sprocket.

CRANKSHAFT ASSEMBLY

INTRODUCTION

The crankshaft is a single forged steel unit. It has three main shell bearings and a single ball race bearing at the rear. It is a fairly robust unit, but care must be taken not to drop it or nick it in any way.

PREPARATION

Prepare as follows:
Remove the Engine.
Remove the Cylinder Heads.
Remove the Water Pump cover.
Remove the Rear Case.
Split the crankcase.

PRECAUTIONS

Mark the pistons, con rods and gudgeon pins using a felt marker pen to ensure that they are replaced in their original positions.

DISASSEMBLY

Disassemble the crankshaft assembly as follows:

Remove the bolts securing the LH Con Rods to the Big Ends. Carefully pull the two left pistons away and store them safely. Remove the bolts securing the RH Con Rods to the Crankshaft and allow the pistons drop in the bores. Do not allow the pistons to drop right out of the bores unless you specifically want to.
As you remove each piston assembly, examine the edge of the shell bearings and make a note of the colour of the paint on them. This paint indicates the colour code of the bearing and it may be different for each bearing set.
Remove the bolts securing the main bearing caps and remove the caps themselves. Make a note of the colour code on each shell bearing.

NOTE: On the GL11OO the centre bearing is larger than the other two.

Carefully lift the crankshaft assembly clear on the RH cylinder Block. Lift upwards the forwards, working the primary chain of it as it is removed
The crankshaft assembly is then ready for inspection.

INSPECTION

The average homeowner will not have the equipment required to measure up the bearing surfaces to the required accuracy. Check for obvious signs of damage on each of the bearing surfaces. If there are signs of pick up or scoring the crank will need to be replaced/reconditioned.
If you wish to re-use the old Big End Shell Bearings, inspect them for any signs of damage, they should be the colour of tin. If copper is showing then they should be replaced.
The shell bearings are colour coded, each being marked with a faint dab of paint on the edge. Take note of the colours before ordering replacements.
Note: Each bearing set may be of a different grade. 12 If there is no paint mark, then use the following table:

Main Bearing Shells	A or I	B or II	C or III
47.992 - 48.000	Yellow	Green	Brown
47.984 - 47.992	Green	Brown	Black
47.996 - 47.984	Brown	Black	Blue

The columns across refer the marks on the right hand engine case, stamped in the casting on the front of the motor between the two plies.
The rows down represent the diameter of the Crankshaft Bearings.

INSTALLATION

Installation is the reverse order to disassembly; the following points however should be noted:

Coat all sliding surfaces with molybdenum disulfide, failing that use a good engine oil.
The holes at the bottom end of each Con Rod should face the top.

Each of the Bearing End Caps has an arrow marked on it. This arrow should point to the top of the engine.
NOTE: On the GLL100 and later models, the centre Bearing Cap is larger than the other two.

PISTON AND CON ROD ASSEMBLIES
(4 cylinder models)

GENERAL

The Gold wing has four Piston and Con Rod assemblies., two facing left and two right. The method of removing them is unusual in that the left two pull out of the bottom of the barrels (crankcase), and the right two are pushed out through the top of the barrels (crankcase).

REMOVAL
Prepare as follows:

Remove the Engine.
Remove the Cylinder Heads.
Remove the Water Pump cover.
Remove the Rear Case.
Split the crankcase.

NOTE: Mark each piston and Con Rod assembly with its number using a felt marker pen to ensure that they go back in their original positions.
Remove the assemblies as follows:

Rotate the crankshaft so that piston 2 is at TDC. Lay it down gently on a rag covering the crankcase. Remove the Con Rod End Cap. The assembly can then be pulled away. Take care to catch the shell bearings.

Rotate the crankshaft so that piston 4 is at TDC. Lay it down gently on a rag covering the crankcase. Remove the Con Rod End Cap. The assembly can then be pulled away~ Take care to catch the shell bearings.

Remove any carbon deposit at the top of cylinders 1 and 3.

Rotate the crankshaft so that piston 1 is at BDC. Remove the Con Rod End Cap. The assembly can then be pushed out of its cylinder. Take care to catch the shell bearings.

Rotate the crankshaft so that piston 3 is at BDC. Remove the Con Rod End Cap. The assembly can then be pushed out of its cylinder. Take care to catch the shell bearings.

Piston Ring Removal

The correct method of removing the piston rings is to use a piston ring remover. If one is not available however, they can be removed by carefully prising them open by hand, and working them of the piston. Take care to use persuasion and not brute force.

Gudgeon Pin Removal

Separating the pistons from the Con Rods requires the use of a press. Do not attempt to remove them unless you really need to.

INSPECTION

Visually inspect the shell bearings for signs of damage. If in doubt replace them anyway. The shell bearings should be the colour of tin. If copper is showing through, replace them.

Visually inspect the oil rings for signs of wear. If in doubt replace them.

ASSEMBLY

Assembly is the reverse order of disassembly. The following points however, should be noted:

Ensure that the piston ring gaps are staggered one third of a turn apart.

Two of the shell bearings have holes in them. These should line up with the corresponding holes in their respective Con Rods.

When inserting pistons 1 and 3 into their bores, compress the rings as they slide in. There is a specific Honda to for doing this, but it can be done gently by hand.

The oil holes in each con rod should face the top of the engine.
Each Con Rod and end cap have a number and a letter engraved on them, ensure that they match up.

Check that the side clearance on each con rod is within limits, if not they should be replaced.

Specification

Con Rod Side Clearance - Standard0.15 - 0.30 mm

Side Clearance - Service Limit 0.4 mm

Specified tightening torque 2.5-2.9 kg-m (18-21 lb-ft)

If the oil clearance is beyond the service limit, replace the bearing with a new one according to the specification below.

Assembly

Coat the bearing surfaces with clean engine oil or molybdenum disulfide. NOTE: Also make sure that the arrow mark on the cap is toward top

After tightening the bearing caps to the specified torque, hand turn the crankshaft to make sure it rotates freely.

Tightening torque: 3.8-4.2 kg-m (28-30 lb-ft)

Use added care when installing the drive pulleys so that the plate is positioned properly as shown.

Tightening torque: 3.3-3.7 kg-m (24-27 lb-ft)

When installing the timing belts, note the marks made during disassembly so that they can be placed back to their original places from which they were removed.

NOTE: Before adjusting the valve timing, use caution not to rotate the crankshaft or camshaft as such practice will cause interference between the valves and piston.

Timing adjustment

Turn the crankshaft until the mark Ti on the flywheel aligns with the index on the engine block. This will put piston 1 at Top Dead Centre (TDC).

Align the timing mark on the right driven pulley with the index on the cylinder head cover. Install the timing belt on the driven pulley, exercising care not to disturb the above setup.

NOTE: Be careful not to disturb the timing when installing the belt on the driven pulley.

Do not bend or crimp the belt. Do not apply oil or grease.

Align the timing mark on the left driven pulley with the index on the cylinder head cover. Install the timing belt on the driven pulley, exercising care not to disturb the above setup.

As a final check, rotate the engine slowly through one revolution to ensure that nothing hits.

LUBRICATION SYSTEM

GENERAL

A trochoid pump is driven by an extension of the clutch outer through a double chain to provide the required oil flow through bearing clearances and to other lubricated or oil-cooled parts. Since the engine must have clean oil at all times, the Lubricating System ~S equipped with an oil strainer and a full-flow filter. The filter removes dirt from the entire output of the pump before the oil enters the
engine. The oil pan has an oil level finder.

OIL STRAINER

Removal

It is unfortunate that in order to remove and clean the oil strainer, the engine has to be removed from the frame since the frame prevents you from removing it in Situ. On 1200 and 6 cylinder models the crankcase has to be split to get to this item so it is only practicable to carry this operation out when the engine is stripped for another problem.

On the 1000 and 1100 models, with the engine out of the frame, remove the inspection Cover located below the right hand cylinder head. The strainer can then be pulled out.

Inspection

Brush all foreign matter from the screen. Be careful not to damage it while cleaning. Blow compressed air on the screen until it is dry.
Check the screen to determine if it should be replaced.
A torn or damaged screen must be replaced with a new one.

Installation

Installation is the reverse order of the removal.

Position the strainer in place on the opening in the cylinder block; press the strainer all the way by hand until it stops.
Install the cover on the strainer with the gasket in between. Make sure the gasket is good condition and seats on the cover properly.
Assembly is the reverse order of disassembly.

NOTE: Before assembling the pump, soak the parts in solvent until all the oil and foreign particles are dissolved or loosened. After drying with compressed air, lubricate them thoroughly with engine oil.

Install the pump body to the block, aligning the two knock pins with the knock pin holes in the block.

After the pump has been assembled, rotate the shaft by hand to check that it turns freely.

After installation, make sure the pump is rotated freely by hand.

CHANGING A HEAD GASKET
(4 cylinder models)

INTRODUCTION

For all its complexity and size, the GoldWing is one of the few big four stroke motorcycles on which changing a head gasket is a comparatively easy job

REPLACEMENT PARTS

Provided that none of the 0 rings used have perished, then all you will need is a new head gasket.

REMOVING THE CYLINDER HEAD

Both cylinder heads are removed in a similar method, the only differences being that the 1000 and 1100 models have a fuel pump to the rear of the right hand cylinder head, and on the GL l000s, there is a CB housing on the LH cylinder head which must be disconnected. So taking the RH head as an example, place the bike on its main stand (with the engine cold) and proceed as follows:

Drain off the coolant, remove the bolts securing the radiator assembly to the frame and pull it forward to get a little more access room in which to remove the cam belt covers.

Remove the RH cam belt cover, and then crank the engine over until the arrow on the pulley lines up with the timing mark on the casing.

Loosen the bolts securing the tensioner in place and then carefully work the cam belt of the pulley.

Taking care not to bend the belt back on itself, place a polythene bag over it and tie it back out of the way.

Remove the nuts securing the exhaust pipes in place and loosen the nut and bolt holding the silencer to the frame. This should allow you to pull the exhaust pipes clear of the cylinder head.

Check that the fuel tap is turned off and then disconnect the fuel lines to the petrol pump

Remove the bolts securing the carburettor manifolds to the cylinder head. Remove the tappet cover.

Remove the 6mm bolt from the bottom of the cylinder head, followed by the 6 main cylinder head bolts. The cylinder head is now ready to be removed. It may need to be persuaded by gently tapping it with a wooden mallet.

CLEANING UP

Once the cylinder head has been placed to one side, remove the oil restrictor from the crankcase after first making a note of which way round it fits into its hole.

Remove the cylinder head dowels if possible.

Once this has been done all traces of the old gasket must be removed from both the head itself and the crankcase.

This can be done using an old razor blade, or a scraper, taking care not to mark the surfaces.

Once all of the old gasket is cleaned off, gently rub both faces with a scouring pad to polish them up.
Clean up the water pipe fitting on top of the engine and check that the 0 ring is in good condition.

You are now ready to start rebuilding.

REPLACING THE CYLINDER HEAD

Once all of the components have been cleaned, rebuild the head as follows:

Replace the dowels, followed by the oil restrictor and its 0 ring.

Hang the new head gasket on the cylinder head dowels. Look at the bottom centre section of the gasket to ensure that it is on the right way round. DO NOT APPLY ANY GASKET CEMENT.

Ensuring that the water pipe on top of the engine enters into its elbow joint, offer the cylinder head up to the crankcase. Secure it place with the 6 main cylinder head bolts

Torque down these bolts to 4ONm, and then replace the 6 mm bolt at the bottom of the head.

Refit the tappet cover. Refit the exhaust pipes, secure the carburettor manifolds in place, and then reconnect the fuel pipes to the petrol pump. Refit the cam belt, ensuring that the engine is still at its T1 mark, and that the index mark on the pulley lines up with the index mark on the casing.

Crank the engine over slowly by hand to ensure that the valves do not hit the pistons.

Refit the cam belt cover. Secure the radiator back in place, refill it with coolant and the job is completed.

CHANGING THE CLUTCH PLATES
(4 cylinder models)

INTRODUCTION

The clutch system on the GoldWing is a traditional multi plate clutch system. It is sited at the rear of the engine and although a lot of patience is required, the clutch plates can be removed and replaced without taking the engine out of the frame.

SPECIAL TOOLS

A special Honda socket is recommended for the clutch centre nut. It can however, be removed using a hammer and a brass rod

REPLACEMENT PARTS

The clutch plates differ on each version of the GoldWing.

PREPARATION

On the GL 1000 K1 and K2 version of the GoldWing, it will be necessary to remove the silencer assembly from the bike to gain enough access room. Once this has been done, place the bike on its main stand, and prepare the bike as follows:

GL 1000 K1 and K2 versions only, - remove the silencer assembly to allow gain access room under the rear of the engine to get to the clutch.

GL 1 000s only - remove the cover over the actuating mechanism at the rear of the engine.

Disconnect the clutch cable from its actuating arm. Tie it back out of the way.

Remove the two nuts and washers (at the lower right hand side of the cover), followed by the 6 bolts securing the clutch cover in place. The cover can now be removed. Use a hide mallet to tap the cover if it proves difficult to remove. The cover should then be removed by dropping it down and out from under the bike.

Remove the six bolts securing the keep plate over the clutch springs. Loosen them all evenly so that the plate isn't distorted.

Remove the plate, followed by the six clutch springs.

Examine each plate as it is removed for signs of damage such as broken tangs. Ensure that each plate is not warped by laying it on a flat surface such as a plate of glass.
Check the thickness of each plate to ensure that they are not worn out. The minimum thickness is 3.2mm. If any of the plates are found to be below the minimum thickness, then it is recommended
that the entire set be replaced.

REBUILDING

After cleaning all the components removed, rebuild the clutch as follows:

Fit the (new) clutch plates back into the centre section of the clutch, lining up their drive tangs so as to make assembly easier.

Offer up the assembly to the clutch housing and push it home on its shaft. Replace the lock washer, followed by the lock tab washer and then the clutch centre nut.

Tighten it down using the special Honda tool or a brass rod and a hammer. Replace the springs, followed by the keep plate and secure in position using the 6 off 6mm bolts.

The gasket between the clutch cover is normally damaged during removal, so clean the mating faces and use a gasket cement such as HERMATITE CLEAR on the clutch cover.

Offer it up and secure it in place. Reconnect the clutch cable, adjust the cable and the job is complete.

CHANGING CAMBELTS
(4 Cylinder Models)

Although relatively easy this task is harder on the four cylinder models than on the GL1500. The reason for this is that the radiator tends to get in the way. Follow the workshop manual exactly to make sure that no damage occurs. To make things easier, remove the radiator, or at least remove the lower mounting bolts and the small plate that the lower radiator hose is connected to. Replacement of this plate is not too difficult as the joint is sealed with an `O' Ring. Draining the coolant system is required to do this, but on most bikes it will probably be a good idea to change the coolant anyway.

Please follow all directions in the workshop manual when carrying out this task to prevent damage to the machine.

While pattern cam belts are available and have been used by many members of Goldwing's. I have never heard of a pattern belt, correctly installed failing, but as they are not genuine Honda parts I cannot recommend them.

Just in case you do decide to use them the belts required are as follows.

1000/1100	Honda Activan	Partco Number	MTB 74
1200	Bedford Rascal	Partco Number	MTB ?

REASSEMBLING CRANKCASES – A SIMPLE TIP.

When reassembling the crankcases after a rebuild, the Honda tool most missed is the piston ring compressor used when lowering the left-hand case into position. This tool consists of some pieces of plastic that are held together with Velcro. To assemble the cases without this tool I have used some Velcro on its own. Self-adhesive strips of the opposite sides Velcro, stuck together can, if placed around the piston and rings, hold them in position sufficiently well to complete the task. Remember to leave enough of the material free to enable the end to be pulled by a pair of long nose pliers. Some spacers, with lengths of wire attached can easily be made of some pieces of PVC to hold the pistons in place when carrying out this operation.

GL1500 GEARBOX NOISE

On a few occasions I have been asked to have a listen to a `rattle' from GL1500's. This rattle normally occurs in 1st, Neutral, 2nd, and 3rd gears only. On strip down the noise is normally traced to the selector fork for 4th and 5th gear being bent.

IF YOU HAVE THIS SYMPTOM ON YOUR 1500 DO NOT RIDE THE MACHINE UNTIL IT IS CHECKED BY A COMPETENT MECHANIC.

The noise you can hear could be 4th or fifth gear selector dogs touching. Should they actually engage the gearbox will lock up potentially causing the rider to lose control of the machine.

CHANGING THE CAMBELTS
1500 MODELS

To change the cam belts on the GL1500 follow the workshop manual.

The following tip will help to insure that the correct bolts go into the correct holes when replacing the cam belt cover.

Obtain a piece of wood (approx. 150x75x25 will suffice for this). Mark the piece of wood top, bottom, left and right and drill holes in two rows to take the bolts as you remove them. When the time comes, remove the bolts from the wood one at a time and replace them in the corresponding bolt holes.

COOLANT SYSTEM SERVICE

INTRODUCTION

The cooling system on the Gold Wing consists of a radiator, two water jackets and a water pump. Heat from the engine is transferred to the water surrounding the barrels, which is then pumped through to the radiator. When cold, a thermostat on top of the engine prevents this water going through to the radiator by diverting it back to the water jackets. The entire system rarely causes any problems, but it is wise to check the system over at least once a year.

REPLACEMENT PARTS

No new parts will be required to service the coolant system, but 2 litres of anti freeze (suitable for aluminium engines) will be required. It is also a good idea to use distilled water rather than tap water in the system. A gallon of distilled water can be bought at most chemists for about a pound. Alternatively most Motorcycle accessory shops will sell premixed coolant.

COOLANT LEVEL CHECK

Check the coolant level of the reserve tank with the engine running at normal operating temperature. The level should be between the FULL and LOW level lines. If necessary, remove the reserve tank cap and refill up to the FULL level line.

SERVICE

Place the Gold Wing on its main stand, ensure that the engine is cold, and proceed as follows:

Remove the dummy tank or dummy tank panels (depending on which version of Gold Wing you own).

Remove the radiator cap by turning anti-clockwise slowly. Put it to one side.

Place a bucket under the front of the engine and remove the radiator drain plug from the bottom of the water pump housing using a 14mm spanner. Allow the coolant to drain out.

Using a hosepipe, flush the radiator through with fresh water until the water coming out of the drain hole is clean.

On 4 cylinder models, remove the header tank from the bike, drain it and wash it out with fresh water. It can then be refitted.

Refit the drain plug.

Using a large clean container, mix up approximately 4 litres of coolant, comprising equal quantities of water and anti-freeze.

Using a funnel, fill the radiator up slowly. Once it is full, turn the engine over using the starter motor with the kill switch off to displace any trapped air. Top up the radiator. Refit the radiator cap.

Reconnect the rubber pipe between the header tank and the radiator and fill it up to its maximum mark.

Refit the dummy tank (panels) and the job is complete.

After the engine has been run for a few days, check to ensure that the header tank does not need topping up.

RECONDITIONING THE WATER PUMP
(4 cylinder models)

INTRODUCTION

With a little effort and ingenuity a leaking water pump can be repaired and brought back into full working order. It may be that Honda would rather you buy a new one, but there is nothing stopping the average home mechanic from repairing a worn one and saving themselves over E30.

SIGNS OF FAILURE

Underneath the front transmission cover, about 50mm behind the water pump, there is a small hole about 3 mm diameter. If you find that water or oil occasionally leaks from here then the water pump is in need of repair.

REMOVAL

Place the bike on its main stand and proceed as follows:

Remove the drain plugs and drain the engine of oil and coolant.

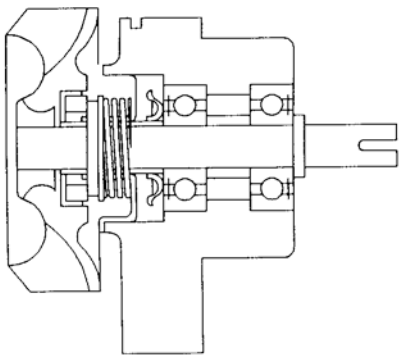
Remove the radiator from the bike, to give a little more access and to prevent it getting damaged.

Remove the oil filter bowl, followed by the covers from the water pump.

Undo the 6mm fixings that secure the front transmission cover to the engine and remove it.
Clean it up to remove all traces of engine oil and road grime.

Inside of the cover there are3 x 6mm bolts securing the water pump to the casing. Remove them, and then press the pump body out of the housing using either judicious taps with a hide mallet, or preferably a large socket and a bench vice.

Once the water pump assembly is out of its housing, take care not to drop it as the Bakelite impeller is easily damaged.



RENOVATION

Clean the water pump and proceed to renovate it as follows:

Clamp the pump body in a vice, taking care not to damage the impeller vanes with the vice jaws.

Remove the circlip from the shaft and then using a hammer and punch, drift the shaft and impeller out of the body. It's a tight fit, so it might need a little persuasion.

This will leave the pump body complete with bearings and PTFE seal. Removal of the bearings is easily done by knocking them out with a drift from the opposite side. The water seal will come out with the bearings.

Once the pump has been completely stripped, clean all items to remove any signs of corrosion. The bearings should be replaced as a pair, they are available from bearing service shops under part no. SKF 6000-2 RS

Press the bearings into place using a large socket and a bench vice. If there are any signs of damage to the seal, they can be polished out using a piece of 600 grade wet or dry paper laid on a sheet of glass.

Once this has been done, refit the seal. The impeller shaft is also pressed back into the pump body using a socket and a bench vice. Line up the distance piece in between the bearings and press the
impeller shaft until the circlip groove becomes visible through the back bearing. It will be tight and may creak but don't worry.

Replace the circlip and rotate the shaft to ensure that it runs freely. If it does then the pump is ready to be fitted back into the bike.

REFITTING

Refitting the pump to the bike is the reverse order of removal. However it is important to ensure that the gasket between the transmission cover and the engine is in good condition. If not then replace it with a new one. Don't try to use gasket cement instead as you will find that the gear change mechanism will jam against the cover.

He Mechanical seal from a CX 500 can apparently be made to fit with little effort. The Honda part number for this item is19217-611-000

RADIATOR AND FAN MOTOR

GENERAL

All versions of the GoldWing have a cooling fan powered by an electric motor. The motor is connected to a temperature controlled switch so that it only switches on when the engine is too hot.

Inspection

Examine the radiator, checking that the passages are free of any restrictions (such as dirt and dead insects). Check that the fins are not bent or collapsed.

Dirt and insects can be removed using a hose pipe. Bent fins can be straightened with the careful use of a small screwdriver.

If the damage covers more than 20% of the surface area of the radiator, it should be replaced.

Pressure cap test.

The cap can be tested with a radiator cap tester. The cap should hold pressure for at least 6 seconds when 0.75-1.05kg/cm 2 pressure is applied.
Specified blow off pressure:0.75-1.05 kg/CM2 (10.7-14.9 psi)

NOTE: Wet the sealing surfaces of the cap and tester with water before testing.

Check the radiator and radiator hoses for leaks.

The appearance of the hoses and connection will usually indicate their condition. If a hose is rotted and soft and collapses easily when squeezed, it should be replaced. a cracked or damaged hose, particularly at the areas where it is clamped, should be discarded.

Testing for air leaks into the system can be checked with Radiator Cap Tester without removing the radiator from the motorcycle as follows:

Warm up the engine and stop it after it has reached its normal operating temperature.

Remove the radiator cap. The cap should be removed slowly by turning it part way to let the steam and hot air to escape before the cap is removed entirely.

Fill the radiator with water up to top of the filler opening. Apply pressure air to the system by operating the tester handle.

Pressurise the system to 0.75-1.05 kg/cm2 (10.7-14.9 psi) It the pressure drops fairly rapidly, it is likely that the tester is not seated properly or air is leaking into the system.

Another accurate test for an air leak is to take of the radiator and submerge it in water. Apply air pressure through the filler opening. If bubbles appear in the container of water, the radiator is leaking.

Fan motor test

Check the motor coil for continuity with a radio tester. It there is continuity, the motor is normal.

Connect the blue terminal of the coupler to the positive terminal of a fully charged 12 V battery and the black terminal to the negative terminal. The motor should rotate freely.

Fan Type	DC Electric Motor
Rating	12V
No Load RPM	2,300 RPM
No Load Current	1.1A max

Direction Of Rotation	Clockwise as viewed from the drive side
RPM Under Load	1900 RPM
Current under Load	3.5A

Flushing the cooling system

If a new Radiator is to be fitted, the cooling system should be flushed as follows:

Allow the radiator to drain completely. Add a proprietary cleaning compound and fill the system with water. Run the engine for about 10 minutes after the engine reaches normal operating temperature (the white range on the temperature gauge). Stop the engine and completely drain off the coolant. Fill the cooling system with clean fresh water and run it again for about 10 minutes

Assembly

Assembly is the reverse order of disassembly. However, observe the following assembly notes:

Take care not to damage any of the fins on the radiator.

Top up the radiator id necessary after letting it run for a few minutes.

Check for leaks around the radiator hoses.

THERMOSTAT

Check the thermostat as follows:

Lower the thermostat into a pot of bold water, at this stage it should be fully closed.

Raise the temperature of the water. Using a temperature gauge, check the following specifications:

Temperature at which Valve opens	80 - 84 degrees Celsius
Full Open Temperature	95 degrees Celsius
Valve Lift	8 mm

Note heat the thermostat for about 5 minutes at 97 degrees Celsius before checking for full lift.

Thermostat Switch

The action of the thermostatic switch can be observed by placing it a pan of water and heating the pan. The switch should be turned ON when heated at 100+/-20C(212+/-3.50F). Use a ohmmeter to check the continuity of the switch.

Check the 0-ring for scores or scratches.

WATER TEMPERATURE GAUGE

Connect a specified voltage power supply to the gauge and thermo unit as shown. Place the thermo unit in a pan of oil and heat the pan. The gauge reading should agree with that on the thermometer also placed in the pan.

Water temperature gauge thermo unit

The operation of the thermo unit can be observed by placing it a pan of gear oil and heat the pan. To determine if the unit is normal, measure the resistance at various temperatures. Use a radio tester to measure.

Oil Temperature 60	80	110	120	(Deg C)

Resistance (Ohms)104 43.9 20.3 16.1

NOTE – Run the engine wiring harness through the right connecting pipe and cylinder block as shown.

Water temperature gauge

Connect the water temperature gauge to the testers as shown in Fig. 4-63 and the tester readings should be 10 to2O Ohms at 120”C and 35 to 55 Ohms at 85 C.

NOTE: Wait for 1-2 minutes until the gauge stabilises.

GL1800 HEADER TANK

I have heard from a friendly dealer in the states of a potential problem that could occur on this model, due to the location of the coolant header tank. It is located under the bike to the rear of the engine unit, in front of the centre stand pivot. A stone or other object being flicked up from the road, striking and puncturing the tank which could in turn result in a loss of coolant. Apart from the potential overheating problem, the coolant used in the system is very slippery and could end up on the rear tyre causing the rider to loose control.
Owners of this model may like to fit some sort of guard to protect this tank and I believe that one of the aftermarket companies is already producing a guard for this purpose.

GL1800 OVERHEATING PROBLEMS

My friendly contact in the states has contacted me about the above subject. Apparently this model can suffer from overheating when operating continuously at low speeds in higher temperatures. Honda has not yet identified the reason for this, but the airflow's through the radiators is under investigation.

Honda's advice on this is to vary you road speed a little, either faster of slower. If this has no effect then they recommend that the rider pull over as soon as it is safe to do so and allow the engine to idle until the engine temperature falls to normal operating temperature.

IGNITION TIMING
(GL l000s only)

GENERAL

The GL1000 Gold Wing has two sets of points, each set firing two spark plugs through a common coil. This means that each spark plug fires twice as often as is needed, once at the top of the compression stroke and once at the top of the exhaust stroke. The CB points are sited in a housing on the back of the LH cylinder head and it is important to ensure that the cam belts are correctly tensioned before attempting to set them up.

SPARE PARTS

If a new set of points are needed, their part number is:

30203-292-154 RH Contact Breaker

30204-292-154 LH Contact Breaker

SPECIAL TOOLS

There are two ways of setting up the ignition timing on the Gold Wing. One involves using a timing Strobe which is done with the engine running. The other method is done with the engine stopped with the aid of a simple 3-watt bulb connected to the engine by a pair of wires with crocodile clips. The static timing method has proved to be just as accurate and is much easier to do.

PREPARATION

Park the bike up on its main stand, make sure the engine is cold and remove the following items:

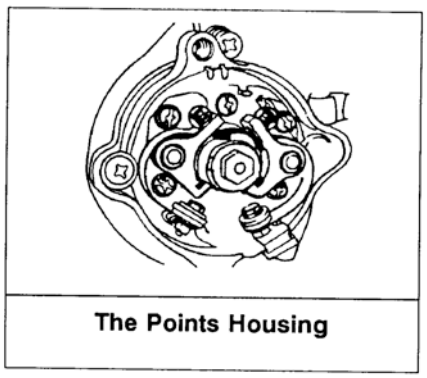
The timing cover (On top of the engine, just behind the Carbs).

The alternator inspection cover (At the rear of the engine, in the centre of the alternator casing).

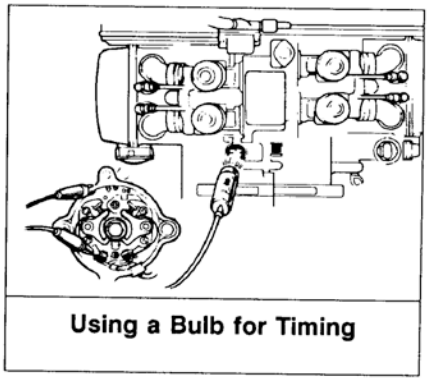
The points cover.

Pull the spark plug caps off the spark plugs to prevent accidental starting.

SETTING UP



The Points Housing



Using a Bulb for Timing

Open up the points by pushing the heel away from the cam and check that the point's faces are flat, clean and not pitted.
Any small blemishes can be removed by carefully using a small file, or some emery paper - make sure however, that the
points will still close squarely afterwards. Once you are satisfied that the points are clean, set them up as follows:

Turn the engine over, using a 12mm socket spanner on the alternator centre nut, until the LH set of points is at its widest opening. Inspect and adjust the gap between the points until it is set at 0.3 - 0.4mm. Repeat the procedure for the RH set of points.

Once you are satisfied that the points gap is correct, set the timing up as follows:

Connect one lead of the timing bulb to a convenient earthing point and the other lead to the spring clip part of the LH set of points. Suspend the bulb so that it hangs over the timing hole.

Turn on the ignition and crank the engine over slowly using a 12mm socket spanner on the alternator centre nut.

The bulb should light just as the Fl timing mark approaches the index mark on the timing hole. If it lights before, then the timing is too far advanced, and if it lights after, then the timing is retarded. Adjust as necessary. To advance the timing, rotate the entire mechanism clockwise.

Turn off the ignition; connect the bulb to the RH set of points.

Turn on the ignition and crank the engine over slowly using a 12mm socket spanner on the alternator centre nut.

Repeat the procedure in Paragraph 6.3, but use the F2 mark.

Once you are satisfied that the timing is correct, then all covers can be refitted and the job is complete.

BATTERY CARE

INTRODUCTION

With the exception of the 1800 all versions of the Gold Wing use the same 12V - 20 AH battery. This is a big battery by motorcycle standards and also an expensive one. Modern batteries are much more reliable than they used to be, but even so, a little maintenance does help to prolong its life.

REMOVAL

Place the bike on its main stand, ensure that the ignition is switched off and proceed as follows:

Remove the left hand side panel. On the 1000 versions pushing and turning the screw at the bottom of the panel through 90 degrees accomplish this. On later versions the panel just pulls off.

Unscrew and remove the bolt holding the earth terminal to the -ye terminal on the battery (the front most one as you look at it). ALWAYS REMOVE THE EARTH TERMINAL FIRST. Pull the lead clear of the battery.

Unscrew the bolt holding the positive lead in place and pull the lead back clear of the battery.

Connected to the top front of the battery there is a clear plastic breather tube. Disconnect this and pull it clear of the battery.

Disconnect the large rubber strap holding the battery in place and remove the battery from the bike.

WARNING - TAKE GREAT CARE NOT TO DROP THE BATTERY OR KNOCK IT OVER AS IT CONTAINS ACID.

SERVICING

Wash the outside of the battery off using hot soapy water. There may be some corrosion around the terminals and this will also come away. Once the outside of the battery is clean, then service it as follows:

Ensuring that the battery is on a flat, level surface, unscrew and remove the 6 caps across the top. Make sure that the area around the caps is clean first to prevent any dirt falling in.

Using an electrolyte tester, check the charge state in the battery.

Check the level of the electrolyte and top it up if necessary to ensure that it is between the minimum and maximum marks on the outside of the battery. If the battery is fully charged, then fill it up to the MAX mark. If the battery requires charging, then fill to just above the MIN mark.

If the battery doesn't require charging, then replace the caps and put it back in the bike. Connect up the +ve terminal first. Ensure that the breather tube is connected up to the outlet on the battery.

CHARGING

All lead acid batteries are best charged at the lowest charging rate that your battery charger has. The recommended maximum charging rate for the Gold Wings battery is 2 amps. A completely dead battery would take 10 hours at this 2 amp rate to reach its maximum charge again.

SPARK PLUGS

INTRODUCTION

Each cylinder is fitted with a sparking plug that is capable of delivering a spark and igniting the compressed fuel. If the spark plug is worn or fouled then performance will be impaired.

REMOVAL
Place the bike on the main stand, ensure that the ignition is switched off and proceed as follows:

Remove the fairing lowers (if fitted).

Remove the spark plug caps. If the rubber gaiter on each pair of plug caps is missing, make a note of which plug caps position.

Using a spark plug wrench, remove the spark plugs.

INSPECTION

Using a pipe cleaner, make sure that the drain hole at the bottom of each spark plug well is clear.

OVERHAULING THE STARTER MOTOR
4 CYLINDER MODELS

INTRODUCTION

The starter motor on the GoldWing is considered by Honda to be a non-serviceable item, but it is not beyond the average home mechanics ability to strip down and rebuild it to get it back into full working condition. A new motor costs over £150, so it's well worth trying to salvage it if at all possible.

SIGNS OF FAILURE

If your GoldWing Motor is hard to start because it's turning over too slowly, as if the battery is flat and the battery is fully charged, then its time to look at the starter motor.

REMOVAL

Place the Wing on its main stand, select first gear to stop it turning over by accident, and proceed as follows:

Remove the nuts securing the LH exhaust header pipe to the cylinder head, remove the pipe and place in a secure area.

Remove the gear lever. Remove the starter motor cable. Take care that the terminal post doesn't rotate as you undo the nut

Remove the two 6mm bolts securing the starter motor in place. Tap the starter motor with a hide mallet until it slides forward and frees itself from the engine.

DO NOT TURN THE ENGINE OVER UNTIL YOU HAVE REFITTED THE STARTER MOTOR

STRIPPING THE MOTOR

To Strip the motor into its component parts, proceed as follows:

Clamp the starter motor in a vice between two bits of wood, and remove the three long cross head screws holding the motor together.

Carefully remove the cover opposite the splined drive, to reveal the brushes.

There are three shims here, two thin ones each side of a thick one. Remove the two small screws holding the brushes in place. This will allow you to remove the brush contact plate complete.

Carefully remove the remaining cover at the other end of the starter motor, - this will come away complete with the two planetary gears. There will also be three shims here as on the other end.

Remove the remaining grease cover and then slide out the complete armature taking care not to damage it.

REPAIR

EXAMINATION AND RENOVATION

The main cause of failure in the starter motor is the build up of carbon dust within it, so it is important to ensure every piece of the motor is thoroughly cleaned. Remove any traces of broken gasket. These gaskets are not available from Honda, but the motor can be rebuilt without them.

Once all the parts have been cleaned, smear a little grease around the planetary gearing, don't go mad, a little will do. Honda do supply the brushes, so these should be replaced if worn. Their part No is:

The commutator, - the part that the brushes run against, will probably be stained black. It can be cleaned off using very fine glass paper (not wet or dry paper) to bring it back to its original copper colour.

The motor can now be rebuilt.

ASSEMBLY

Assembly is the reverse order of dis-assembly. Where gaskets are not being put back in, then a little gasket cement must be used to make sure that no water can find its way into the motor.

TESTING

Before refitting the motor to the bike, it can be tested by mounting it in a securely fixed vice, and applying a set of jump leads to it from a 12v battery. The earth lead to its casing, and the live lead to the terminal bolt.

FAULT FINDING - IGNITION CIRCUIT

INTRODUCTION

A fault in the ignition circuit can normally be remedied quickly simply by replacing the faulty unit. The bigger problem is finding out which component is to blame. On the GoldWing though, much of the ignition circuit is duplicated and so tracking down a faulty unit can be done by a process of elimination. All the Goldwing's share a similar ignition system, with any major differences pointed out where they occur.

FAULT - RUNNING ON THREE CYLINDERS

Faulty Spark Plug Start by determining which cylinder is not working. To do this, start the bike up, leave it running for a few minutes, and work out which exhaust header pipe isn't warming up. Take great care not to burn your hands.

Stop the engine, and swap the plug over with another on the bike. Start the bike up again and if:

The same cylinder misfires, then the plug is OK, and the fault lies with the HT lead/Plug cap.

The other cylinder misfires, then the plug needs replacing.

Faulty Spark Plug cap. Use the same process of elimination as used for the spark plug, and if:

The same cylinder misfires, then the cap is OK and the fault lies with the HI lead.

The other cylinder misfires, then the cap needs replacing.

FAULT - RUNNING ON TWO CYLINDERS (or 3 on the 6 cylinder models)

FAULTY HI COIL. Locate the supply wires going to the HI coils, and swap them over. Swap the HT leads on cylinders 1 and 3 over with those on 2 and

Start the engine up, and if:

The same two cylinders misfire, then the coils are OK and there is a fault on the points/CDI system

The other two cylinders misfire, then the HI coil is faulty and needs replacing.

Don't forget to plug all wire back into their original connections.

GL 1000 TESTING THE CB POINTS

Refer to Maintenance, and set the points up as described there.

OTHER IGNITION FAULTS

A fairly common fault on the 1000 Goldwing's is for the ballast resister to fail, to test whether this unit is at fault, proceed as follows:

Start the engine up, and hold the starter button on for a few seconds after the engine has started. The engine Should run as normal, except that the starter motor is turning over. Let go of the starter button and if the engine stops, then the ballast resister needs replacing.

Later model 1200's can develop a misfire once the engine has reached operating temperature, which disappears when the engine cools down a bit. This can normally be traced to the pulsar coils mounted at the front of the engine, underneath the cam belt covers.

BANK ANGLE SENSOR ON TRIKES AND OUTFITS

One of the problems that can be encountered when fitting a sidecar or trike kit to a GL1500 is the bank angle sensor operates due the sideways forces generated during cornering.
To overcome the problem, carry out the following:

1. Locate the GREEN 3-pin plug located under the front of the top box. This is the connection for the bank angle sensor
2. Disconnect the plug
3. Connect the red/silver wire and the green wire together
   The problem is now solved, but note that for safety's sake return the unit back to standard if the machine is converted back to a solo in the future.

GL1500 CHARGING PROBLEMS

The charging system on the GL1500 seems to fail at about 35-40,000 miles. Many owners are not aware that this is often due to worn alternator brushes. These brushes are reasonably easy to replace, provided you are competent with a soldering iron and the cost of new brushes it quite reasonable, provided that the workshop manual is followed.

GL1200 CHARGING PROBLEMS

It has become general knowledge that there is an inherent problem with GL1200 Alternator failure. A common cause of this failure is due to the alternator connection shorting out. This is three-pin plug and socket located just forward of the battery.
To reduce the likelihood of this happening, locate the plug and disconnect it. If the plug and socket are in perfect condition fill the plug and socket with good quality grease. Silicon grease such as MS4 will do the job adequately.
Should the plug and socket be in poor condition (through either corrosion or through the plastic melting), the connection should be remade. If a new, suitable, plug and socket is not available, a satisfactory method that can be carried out is to cut the wires as close to the plug and socket as possible and solder the wires together.

Do not forget to insulate the connections.

GL1200 AND GL1500 MISFIRE

On several occasions members have asked if I knew the cause of a mysterious misfire. This misfire was usually only present when the engine was hot.

One cause on the later 1200's with the ignition pulsar coils on the front of the engine and all 1500 models occurs due to the pulsar coils breaking down when hot.

The only cure is to replace the pulsar coils. The problem should then be solved.

COMMON CRUISE CONTROL FAULT

On many occasions I have been asked to sort out a fault on the GL1500 cruise control. This has invariably been found to be a faulty switch or lever. If either of the brake light switches or the clutch switch are not allowed to turn off when the lever is released, the cruise control system will `arm' but will not `set'. To further investigate and pinpoint the problem follow the following sequence.

1. Operate the front brake light switch slowly and two separate clicks should be heard. The first is the cruise cancel switch, the second the switch that operates the brake light circuit. Try pushing the lever forward to its limit, or operating the switches with a thin tool, if a click is then heard replace the lever, or fix a thin spacer to the lever to make sure the switch operates. Care should be taken however to ensure this spacer does not take up the free play in the lever before the brake itself is applied. This problem is often the result of fitting some after market levers. Try fitting a standard lever to see if this works the switch satisfactorily. If not the switch may have to be replaced.
2. When operating the clutch lever slowly one click should be heard virtually instantaneously and another click just before the end of its travel. If these are not present follow the above sequence.
3. When operating the rear brake lever, again two clicks should be heard. They operate in the same sequence as the front brake switch. This problem is more troublesome however, as the cruise control cancel switch is in a very inaccessible position close to the exhaust system. Once it is located it may require a simple adjustment, or may need replacement.

If the above does not cure the problem (in about 1% of cases) a more detailed investigation may be required, with a full workshop manual or electrical trouble shooting manual essential.

Below is a really good tip from John Kent for adjusting the top speed on the 1500 cruise control. In the article it is stated that it only works on post 1995 models. As the part numbers for the components effected are the same for models from 1990 models, it may work for all models from 1990 – 1999, but this has yet to be tested by myself.

BEATING THE ~80 MPH LIMIT OF THE GL1500'S CRUISE CONTROL
TRIED, TESTED AND DEVELOPED BY JOHN KENT

For the past 13 years - ever since its introduction - riders have been looking for a way to extend the maximum speed at which the cruise control could be set. The efforts that I'm aware of approached the problem with the thought of "fooling" the cruise control unit into "thinking" that the bike was going slower than it actually was.
After hearing a few trike owners comment that their maximum cruise control setting was different - lower - than a stock Wing's, and that the final drive gear ratio was normally changed to give the trike more power to pull the extra weight, I did some digging in the shop manual and found that
1) My 95 Appendage's Cruise Control sensed engine speed as well as road speed, and
2) There were inputs to the Cruise Control from 4th and 5th gear positions.
Sure, the fact that there was still input from the speedometer meant that road speed could still be the determining factor, and, since the Cruise Control will only work in 4th and 5th gears, the inputs could merely be giving the CC that information, but -- more tests were in order.
First, I determined, by road test, that ~80 mph CC limit was the same in both 4th and 5th gear. I also noted that the actual (GPS indicated) speed was always 78 mph, while the speedometer would indicate between 78-81 mph on any given ride, although the engine RPM was always the same. I took this as another indication that engine speed, not road speed, was the determining factor for maximum cruise speed.
It now appeared that the solution to the problem could be to try to make the CC think that the transmission was in 4th gear, although it was actually in 5th. Now, how to do this. Examining the manual (see diagram) showed the colour code of the wires inputting the transmission sense into the cruise control, and also showed a connector - C33- where these wires could be accessed after inputs had gone to the engine control system. After all, I only want to fool the Cruise Control, and not the engine control module.

The picture (below) shows where this connector is located. The picture was taken by someone standing in front of the right saddle bag; the shiny black surface in the lower right of the picture is the front of the rear fender. Even though the picture caption states that the trunk is removed , as you can see by the location of the shock, it's only necessary to remove the seat to get to it.

For the test, I merely cut the red/white and green/orange wires, and cross connected them, so that the CC thinks the transmission is in 4th when it's really in 5th, and 5th when it's really in 4th. Now for the road test! I set the cruise control in 4th gear and tapped up to increase the speed. Sure enough, 65 mph was as high as it would set. Shifting into 5th, I reset the cruise and, again, started tapping up to increase the speed. 75... 78... 80... 85! Yes! and 90 mph. The cruise control maintained 90 mph as well as it used to maintain 75. I figure that it will set up to 100 mph and 4500 rpm (which is 80 mph in 4th gear.)

I know that it works on a 95, and I'll be trying it on a 96 in the next few days. I believe that it will work on any GL1500 that senses engine speed with the cruise control. For now, I think I'll leave the wires crossed; I don't foresee a reason to want to use the cruise control above 65 mph in 4th gear. A couple of other ways that should work, and that I may try later are:

1) Cut both wires, connect the red/wht wire (4th gear) from the cruise control to ground, and leave the other wire disconnected - I could then engage the cruise in any gear up to what ever speed 4500 rpm is, or

2) Cut both wires, leave the grn/org wire to the cruise control disconnected, and connect both wires from the shifter to the red/wht wire coming from the cruise control using a diode in each wire with the cathodes away from the cruise control. I could then set the cruise control up to 80 mph in 4th gear and 100 mph in 5th.

GL1500 RADIO LIGHTS

While there is a possibility that there is a loose connection on the circuit board under the top cover of the radio more than likely the bulbs are burned out.
After you get the radio out (see the shop manual) take the bottom plate off the radio and then remove the 4 screws that hold the top on. The bulbs are in the top and the top is connected to the radio by a harness that doesn't appear to be removable. There is enough room to separate the radio and top so you can get to the bulbs but be careful with the harness, it will be under a strain.
There are 2 types of bulbs needed in the 1500 radio and your Honda dealer probably doesn't have them. The SE and the Standard use the same bulbs. The Radio is a Panasonic which is a division of Matsushita
XAMR001SA is an assembly of two bulbs and a connector. This is the lights for the knobs.
XAMR011SA is a single bulb in a complex mounting base. These are used for the switches. A viable replacement for these has not to my knowledge been found.
Supplier -
Call Matsushita @ 800-447-4700 to find a dealer near you.

CARBURETTORS

INTRODUCTION

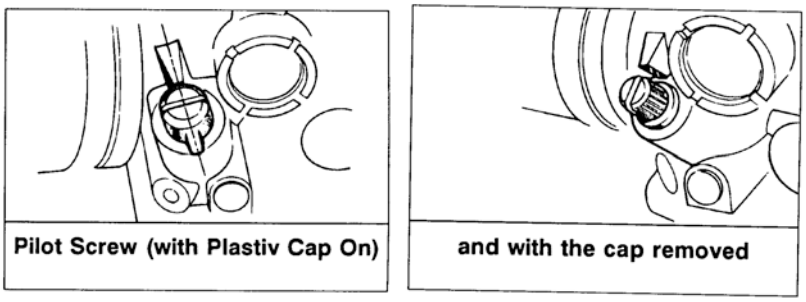
The carburetion system on the Gold Wing consists of 4 Constant velocity carburettors. They are mounted in two banks of two, each carburettor serving a single cylinder. If one carburettor is not working at the same rate as the others, then it can have an adverse effect on the performance. Setting them up however is not a particularly hard job.

A pilot screw is fitted to each carburettor. These should not need adjustment unless they are being replaced. To adjust a pilot screw, proceed as follows:

Warm up the engine. Carburettors should always be adjusted at their normal working temperature. Switch the engine off.

Remove the plastic covers from each screw and wind each one in until it just bottoms out, noting how many turns each screw bottoms out. Wind the screws back out to their original position. A new pilot screw should be positioned 1-3/8turns out.

Replace the plastic caps with the tab on the cover facing downwards.



Pilot Screw (with Plastiv Cap On) and with the cap removed

BALANCING THE CARBURETTOR S

Special Tools

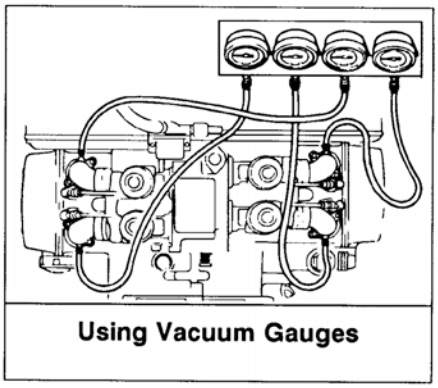
To set up the carburettors with any degree of accuracy, it will be necessary to use a vacuum gauge set. Beg steal or borrow one before going any further.

Preparation

Place the bike on its main stand and run the engine until it is warm. Switch off the engine and continue as follows:

Put a blanket over the dummy fuel tank and place the vacuum gauge set onto it. Remove the blanking screws from the bottom end of each inlet manifold.

With the vacuum gauge set, there should be a set of adaptors; these should be screwed into the inlet manifolds. Connect the tubing from the vacuum gauge set to the adaptors.



Using Vacuum Gauges

Start the engine and let it run on tick over until it is warm. Most vacuum gauges have a screw up near the gauge used to dampen down the gauge in order to obtain a steady reading, adjust this screw if necessary. Balance up the carburettors as follows:

Adjust the screw on the linkage between No 1 and No 3 Carburettors until No 1 carburettor reads the same as No 3.

Adjust the screw on the linkage between No 4 and No 3 Carburettors until No 4 carburettor reads the same as No 3 carburettor.

Adjust the screw on the linkage between No 4 and No 2 Carburettors until No 4 carburettor reads the same as No 2 carburettor.

Once all gauges are giving the same reading the gauges can be removed and blanking screws replaced.

NOTE: It doesn't t matter what readings the gauges are actually giving, as long as they all agree with the gauge on No 3 carburettor.

OVERHAULING

INTRODUCTION

The GoldWing is fitted with four carburettors, mounted in two pairs and linked together to a throttle mechanism sited behind the air box. Constant velocity carburettors are used, chosen for efficiency rather then performance. This type of carburettor gives little trouble but on high mileage Wings accumulated dirt and grime can cause them to run a little rough. Cleaning out the carburettors is not a job requiring great skills, but you will need a clean surface to work on once you removed them from the bike.

SPECIAL TOOLS

No special tools are required to overhaul the carburettors, but a vacuum gauge set will be needed to set check them when finished as described in MAINTENANCE

REMOVAL

Making sure that the engine is cold, proceed as follows:

Remove the fairing lowers (if fitted).

Open up the dummy fuel tank and remove the tool tray. Remove the butterfly nut(s) securing the top of the air box in place. Remove the lid followed by the air filter.

Using a 10mm spanner, unscrew and remove the two 6mm bolts securing the air box in place, once this has been done the air box can be removed from the bike. On the 1000 versions, this can be a little difficult because of the neck on the air box, but it will come out.

Disconnect both throttle cables from its mechanism at the back of the air box and tie them back out of the way. Do the same for the choke cable.

On the 1100 versions, disconnect the rubber pipe running from the CDI unit to the bottom of No 3 carburettor.

Disconnect the fuel pipe running from the carburettors to the fuel pump. Disconnect and remove the fuel line between the fuel pump and the fuel tap. Do not forget that the fuel filter will also have to be disconnected from its mounting point.

Loosen off the clamps securing the inlet manifolds to the carburettors, unscrew and remove the bolts securing each manifold to the cylinder head.

Place a rag between the carburettor bank and the top of the engine to protect the lacquer on the motor and then pull each manifold of its carburettor.

On the 1000 models, sited on top of No 1 carburettor is the air cut-off valve. Disconnect the rubber tube running to it and remove the two screws securing it in place. Remove it from the bike along with its two 0 rings.

The complete carburettor assembly can now be removed from the bike by gently working it out on the left hand side. Once the assembly is clear of the bike, loosen the large brass screw on each float chamber and drain any petrol off into a container. The carburettors can now be disassembled.

DISASSEMBLY

Before attempting to strip the assembly, make sure that you have four separate shelves/boxes/areas in which to store items so that you can ensure that they go back onto the same carburettor that they were removed from. Degrease and clean the entire assembly to remove any road grime, place it on a clean work surface. The procedure for stripping all four carburettors is the same, and so only one is detailed as follows:

Remove the two screws securing the top of the carburettor in place, and remove it along with the spring, pilot and plastic spacer ring. Clean these parts thoroughly using paraffin, petrol or brake fluid. Do not use an abrasive polish such as chrome cleaner.

On the 1200 version, under the chrome cover there is a spring and a rubber diaphragm, remove these and examine the diaphragm for any tears or small holes. If there are any then the diaphragm must be replaced.

Turn the carburettor assembly over and remove the float bowl, clean it out and put it to one side.

Remove the pin holding the float assembly in place by pushing it out with a needle. Disconnect the float assembly from the valve and lift it away from the carburettor. Shake the float assembly and listen to it for any noise that would signify it has petrol in it. If it has then it must be replaced. Another check is to float it in a bowl of water.

Remove the valve from its seating and examine the condition of its sealing face. Replace if damaged.

Pull the filter out and clean it. Put it to one side.

Taking note of where each jet is sited, remove the screws and keep plates holding them in place, and remove the jets. Clean them carefully, using an airline to blow any dirt out of their holes. Do not try to clean the holes by poking wire through them as this will cause damage.

After making sure that all the parts are clean, dry and undamaged, the carburettors can now be rebuilt. This is simply a matter of replacing the components in the reverse order. The only check that must be carried out to check the float level as follows:

With the carburettor bank upside down, lift the float up until it is just touching the sprung plunger on the valve. Measure the distance between the bottom of the float and the bottom face of the carburettor. If it is incorrect, then adjust it by bending the tang that the valve touches.

Once the carburettor bank has been refitted, it may take a while for the engine to start up, as the fuel pump will need to fill the carburettors up first.

CARBURETOR PROBLEMS.

A problem that occurs regularly on Gold Wings as well as other motorcycles is that after the bike has been left standing for a considerable amount of time, it will not run properly when an attempt is made to start it. The engine will sometimes run perfectly when at higher revs, but will refuse to tick over.

The cause of this is normally because of the fact that the machine has been left with the carburettor's full of petrol. Over time this evaporates, leaving a varnish like residue that is very difficult to remove from the smaller jets i.e. the slow running jets.

This has become more common with the advent of lead free petrol and the petrol makers are aware of it. I know this because I contacted one of them for advice and the only help they could give me was `do not leave a machine for extended amounts of time with petrol in the fuel system'. Very Helpful.

If this does happen to you, the only option is to obtain the best solvent you can find and thoroughly clean the carburettors out after dis-assembly. Be very careful when carrying out this option as the fumes from the solvent may be toxic. Additionally the solvent may destroy any rubber of plastic seals located within the carburettors.

PETROL TANK LEAKS

I have now had reports of corrosion causing leaks on fuel tanks, particularly on the 1500 models. These leaks appear on the left-hand side of the tank, approximately half way along and half way up the area of the tank covered by the left-hand side panel. The cause of this appears to be water collecting on the inside of the tank in this area It may be a good idea to have your bike checked by the mechanic who services your bike. If you decide to carry out this check yourself be aware that this is a hazardous task due to the likelihood of petrol fumes. The method is detailed below.

1. Move the bike outside or carry this operation in a very well ventilated area.
2. Disconnect and remove the battery to ensure that there is no chance of a spark being generated by the bikes electrical system.
3. Drain the fuel tank (siphoning may achieve this).
4. Disconnect and remove the fuel pump assembly (this is located under the seat and is bolted to the top of the fuel tank).
5. Turn on a torch (not a mains operated lead lamp) away from the immediate area (to prevent a chance of a spark) and shine it through the hole left once the pump assembly has been removed. Any corrosion will be seen easily.
6. If severe corrosion is found replace the tank. There are treatments that will seal the tank, but as the tank has to be removed anyway it may be a better proposition to replace it with a new of good second-hand one. Be aware that removing and replacement is quite a lengthy operation and should take a qualified mechanic 3- 5 hours to complete.
7. Reassemble.

I must stress the hazards involved when carrying out this task. Petrol is extremely volatile and will ignite very easily, possibly causing the loss of the bike, property and even serious injury to those involved in carrying out this task.

BRAKES

INTRODUCTION

The braking system on all versions of the Gold Wing consists of two discs on the front wheel, and a single disc on the rear. On the GL 1100 Aspencade, 1200 and 1500 models, one front disc is linked with the rear brake and operated by the rear brake pedal, and the other disc operated from the front brake lever. The basic procedure though, is the same.
The 1800 models have a unified braking system that may include an ABS braking system. The hydraulic brakes on this bike are really complicated and should only be worked on by someone with experience of this system.

Checking the Brake fluid levels

Check to see if the brake fluid level is between the upper and lower level lines shown in as marked on the Master cylinders. If the Brake fluid is low, check that the pads are due for replacement, and if so, replace them before topping up the fluid level. The recommended brake fluid is DOT3 (or SAE J 1 703).

Front brake pad wear check

If the left or right pad wears down to the red line, replace both pads as a set. Some makes of brake pads do not have a red wear line printed on them. Replace these when the friction material is worn down to 1mm.

Front brake pad replacement.

Remove the two 8 mm socket bolts, remove the callipers A and B from the support bracket.

Remove the two calliper set bolts, then separate the calliper B from the calliper A.

Remove the pad spring and front brake pads.

To install, reverse the removal procedures.

REAR BRAKE PAD WEAR CHECK

If the red mark on the left or right pad aligns with the red zone on the calliper, replace both pads as a set. If you cannot see the red zone, replace the pads when the friction material has worn down to 1mm thick.

Rear brake pad replacement.

Remove the 5 mm bolt, and then remove the pad cover from the calliper assembly.

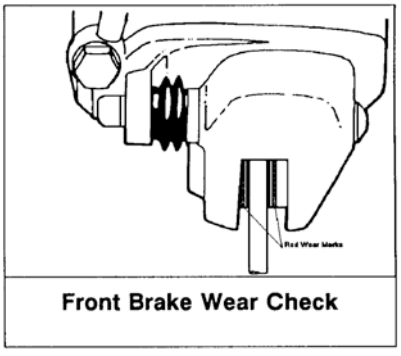
Push the pad set spring, and then pull out the upper pad pin.

Pull out the lower pad pin.

Remove the pads and pad set spring.

To install, reverse the removal procedures.

NOTE: The pad pins are stepped. Install the pad set spring to the slim portion of each pin.



Front Brake Wear Check

PATTERN BRAKE PADS

In the January edition of the Thames Valley Regional newsletter the question was asked about pattern pads used on the GL1500.
My advice to owners of GL1500s is DON'T use them with genuine Honda discs. The reason for this is that in my experience pattern brake pads tend to wear out the discs a lot quicker than the standard pads and don't seem to work as well anyway.
The savings in using pattern brake pads are by far outweighed by the cost of new discs each.

BLEEDING THE BRAKING SYSTEMS

A new of can of brake fluid will be required. Do not use a can that has already been opened as it may be contaminated. It is best to let a new can stand for a couple of hours before opening to let any air dissolved in it to disperse.
The recommended brake fluid is SAE J1703

PREPARATION

Place the bike on its main stand, place an old rag around the master cylinder in case of accidental spillages, and proceed as follows:

Remove the top of the brake fluid reservoir and ensure that the fluid is topped up to the maximum mark.

Remove its protective rubber cap and then using an 8 mm spanner, loosen the bleed nipple on the brake calliper to be bled. Tighten it so that it just seals.

Fit a clear pipe to the end of the bleed nipple and feed this into a glass jar. Pour sufficient brake fluid into the jar to cover the end of the pipe. (This is to prevent air being drawn back into the system).

Bleeding can now commence.

BLEEDING

To bleed one calliper, proceed as follows

Pump the brake lever a few times and then hold it on so as to pressurise the system.

Loosen the bleed nipple a half turn so that the fluid bleeds out, and then close it once the pressure has fallen.

Repeat the last two paragraphs until the brake fluid bleeding out is clean and free of any air bubbles. Keep an eye on the brake fluid reservoir so as to ensure that the level does not fall too low.

Remove the pipe from the bleed nipple, and then fully tighten it.

Replace its protective rubber cap.

The remaining two brake callipers should be bled in the same way.

I am very often asked what the secrets are when carrying out this task. It is a simple task, providing the correct sequence is followed, as laid out in the workshop manual. Please be aware of the following hazards:
Brake fluid will attack rubber and paint. Any spillage should be cleaned off with clean rag and a cleaner such as furniture polish immediately.
It will also effect the skin, so wearing gloves is also recommended.
All items of the breaking system must be kept clean and free from dust and moisture.
Always use a new container of brake fluid, this oil will readily absorb water which in turn will reduce the efficiency of the brakes.

Before attempting this, ensure that it is the fluid that requires changing, a lot of owners are disappointed to find that the improvement in the brakes is minimal after carrying out the task.
Spongy brakes can be the result of several problems besides bad fluid. The following can cause this symptom

Old brake lines, the brake lines as supplied with the bike deteriorate with age and if the lines are held tightly between your fingers you can feel the hoses expanding. The only cure for this is to replace the brake lines, braided steel ones can be obtained for a reasonable price and are actually better than the standard Honda items.
Calliper sliding pins. Once these wear the calliper will `float'. This then requires more lever travel before the brake starts to operate.
Calliper mount bearings. On the models fitted with anti dive, the calliper moves when the brakes are applied. If the pivot bearing wears, the effect is the same as when the slide pins being worn.
Master cylinder seal wear. These when worn will also result in more lever travel being required to operate the brake.

While replacement of the fluid is recommended by Honda every two years it is worth checking the above as if one of these is found to be causing the problem it may result in having to allow the fluid to drain away, and the brake lines having to be bled again.
As for the operation of changing the fluid/removing air from the system I have found that this is a lot easier if a proper brake bleeding kit that uses a vacuum pump to pull the fluid through make things a lot easier. I have even used a large syringe to carry this out with excellent results.

BINDING BRAKES.

More and more members are starting to restore the older models. A problem that is starting to become commonly reported is that one of the brakes is binding. After trying to cure this by refurbishing the callipers and replacing the master cylinder seals the problem still persists.

I have found that the problem can be caused by not thoroughly cleaning the master cylinder. Dirt remains trapped in the oil-way that allows the fluid to escape back in to the reservoir sided of the cylinder. This means that the hydraulic system remains pressurized and the brake will not release.

A bit of judicious cleaning should solve this problem.

CHECKING BRAKE PADS

I have come across several bikes where the brake pads were worn down to the metal backing. On asking the rider/owner why the pads had got so worn the reply is often that the owner found checking the brake pads was very awkward.
A simple way to check the front pads is to use a mirror and a torch. Simply position the mirror at the bottom of the rotor covers so that the calliper can be seen. It is then a simple matter of shining the torch into the mirror and adjusting its position so the pads can be seen. This is a lot easier than grovelling on the ground. Unfortunately to inspect the rear brake pads it is still a matter of getting down onto your hands and knees, checking them with a torch.

CHANGING BRAKE PADS AND CHECKING THE BRAKE CALIPERS

If you decide to carry out the tasks detailed below, please ensure that you feel confident in doing it and have a workshop manual to follow. The brakes are an important part of the machine. If the tasks are not carried out correctly the brakes could fail resulting in an accident.

When changing brake pads owners very often just push the piston back into the calliper to allow room for the new pads to fit. This can and very often does lead to sticking brakes and sometimes damage to the calliper. During use the pistons very often collect dirt from the road and dust from the old pads. This dirt is very abrasive and can contain salt. This dirt cause's corrosion of the calliper cylinder bores which very often works its way behind the brake piston seals and can cause corrosion that will destroy the calliper. Before pushing the piston back into the calliper body, operate the brake lever to push the brake piston seals out slightly, inserting the old brake pads once the calliper is removed will prevent the pistons coming out completely. Next clean them with a NON ABRASIVE CLEANER, carefully turning the piston to ensure that it is cleaned all the way around. If an abrasive cleaner is used, what is left of the plating that Honda apply to the pistons will be removed. Once the pistons are cleaned, use a suitable tool to push them back into the calliper body, remembering that when one piston is pushed in the other may try to come out.

Before the replacing the calliper (all callipers on late 1100's, all 1200's and the rear calliper on 1500's), check that the sleeve that the smaller of the calliper mounting bolts passes through is free to slide. If it is not remove the sleeve, which may require some force and replace the rubber boots after cleaning the boot seating grooves and apply a little brake grease on re-assembly. Note that the rubber boots may need to be replaced if they have any tears in them or they have lost their shape. During assembly apply a little brake grease to all bolts that hold the brake callipers in place.

FRONT FORKS

INTRODUCTION

The front forks on all versions of the Gold Wing, whether air assisted or not, are filled with a quantity of oil. This oil serves to provide a damping medium and lubricate the internal moving parts of the fork leg. Changing to a different grade of oil will not, as some people believe, change the spring rate of the front forks. What it will do is to change the damping characteristics, - thinner oil will give less damping effect and thicker oil more. The oil in the fork legs tends to get overlooked at service intervals, but it is wise to change it at least once a year.

RECOMMENDED OIL

Honda recommend the use of Automatic Transmission oil in the forks, but most of the big oil companies do sell oil specifically for motorcycle fork legs, I suspect that there is very little difference between that and ATF (but they do sell it in different grades, so that you can tune the damping to suit your requirements).

CHANGING THE OIL

Place the bike on its main stand, release the air pressure if fitted with air assistance, and proceed as follows:

Place a bowl under one fork leg and remove the blanking bolt, (sited about 50 cm from the bottom of the fork or on the anti dive case). Allow the oil to drain out. Pumping the forks up and down will help to remove the oil.

Repeat the procedure on the other fork leg and then refit the drain plugs.

Using a trolley jack or some support blocks, lift the front wheel so that it is just clear of the ground. Alternatively, you can put extra weight on the back of the bike until the front wheel leaves the ground.

Remove the fork caps from the top of the fork legs. On bikes with air assistance the balance pipe between the two will have to be disconnected first.

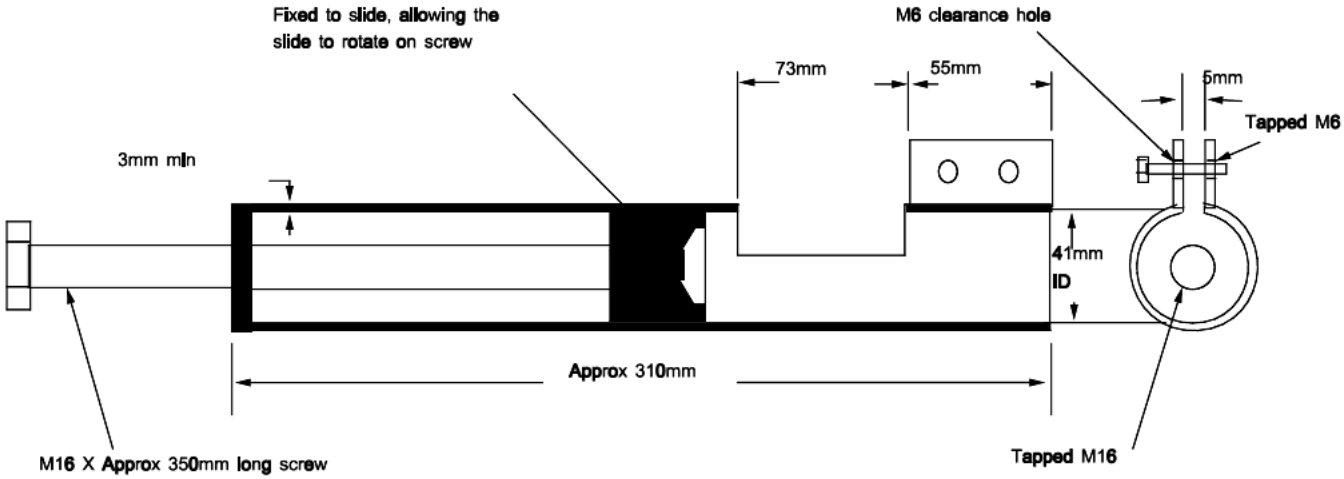
Using a funnel, carefully pour the recommended quantity of oil into each fork leg.

	At service	At rebuild
GL 1000	170 - 180 cc	190 - 200 cc
GL 1100		
GL 1200		
GL 1500		

Replace the fork caps. This can be a little difficult because of the springs, unless the front wheel is clear of the ground.

CHANGING FRONT FORK SPRINGS AND OIL

When servicing any of the internal parts of the front fork components please read the manual closely. On the Goldwing the front fork springs are longer than the front fork tubes and the springs contain a lot of energy when the front fork top nuts are released. On the 1500 models in particular it is advisable to use a special tool to remove and replace these nuts. I have seen them done without this tool, but the person who carried out the operation weighed in excess of 18 stone!
A special tool can easily be produced with a little ingenuity (see below) after looking at the item shown in the workshop manual.



FORK SPRING COMPRESSOR TOOL FOR GL1500 GOLDWING

RE-CONDITIONING GL1100, GL1200 AND 1500 AIR SHOCKS

INTRODUCTION

The rear suspension system on the GL 1100, 1200 AND 1500 Gold Wing comprises of two air assisted shock absorbers (1 on the 1500 models). These units are interconnected and as such, an air leak in one will lead to both units losing pressure. Repairing a faulty unit is not a hard job and can be done Without any special tools.

SPARE PARTS

For any spare parts that may be required refer to the diagram.

PREPARATION

Stand the bike on its main stand, release any air pressure in the system and remove the faulty shock absorber.

STRIPPING DOWN THE AIR SHOCK

Clean the unit thoroughly to remove all traces of dirt and oil, and strip the unit down as follows:

Remove the rubber boot. Remove the circlip, followed by the backup plate (Item 10) behind it.

The oil seal will now be exposed. Remove it by filling the shock absorber with compressed air through its top hole. Keep the shock absorber upright when doing this and over an old bowl as when the seal blows out, so will the oil!

Examine the guide bush for signs of wear and replace it if necessary.

REBUILDING THE SHOCK ABSORBER

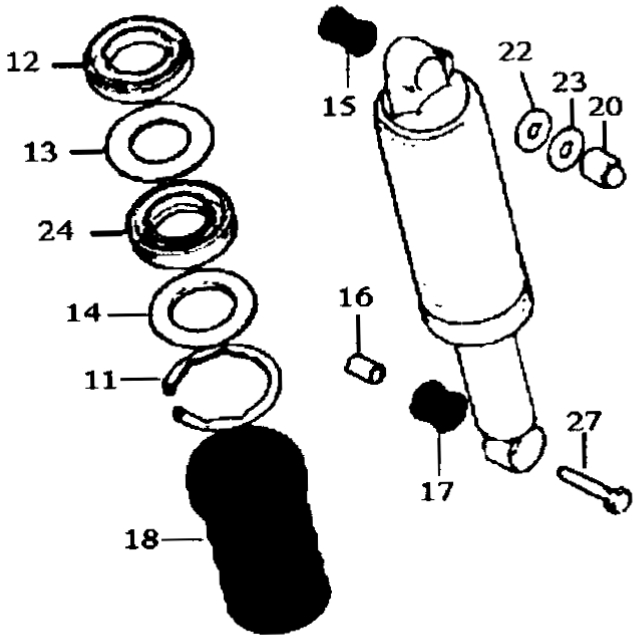
Clean all items to be refitted, and proceed as follows:

Block the top air hole and pour 365cc of Automatic Transmission Fluid (ATF) into the shock absorber.

Install the guide bush and first backup plate.

Dip the new oil seal into some ATF and install it in the shock absorber case. (It's important to ensure that the seal is pushed in correctly. A tube of approximately the same diameters as the seal can be used to push it into its housing squarely).

Once this has been done, the unit can be refitted to the bike.



SPARE PARTS LIST

Number	Description	Part Number	Quantity
11	Circlip	52447-463-003	
12	Guide	52462-463-003	
13	Ring, A	52463-463-003	
14	Ring, B	52464-463-003	
15	Rubber Joint	52484-292-000	
16	Collar	52486-463-000	
17	Bush	54289-399-601	
18	Boot	52611-463-003	
19	Connector	53139-463-000	
20	Nut	90309-315-000	
21	16mm Washer	90439-463-000	
22	10.3mm Washer	90521-292-000	
23	10.3mm Washer	90527-230-000	
24	Oil Seal	91257-463-003	
25	0 Ring	91301-469-003	
27	Bolt, 10 x 35	93200-10035-OB	

CHANGING THE FRONT WHEEL BEARINGS

INTRODUCTION

The front wheel on all versions of the Gold Wing employs two single ball race bearings, one bearing pushed into a housing on each side of the wheel. Replacing the bearings is simply a matter of drifting out the old bearings and replacing them with a new pair. It is not worth replacing one bearing only, so always set out to replace both bearings even if, on examination, one of the old bearings appears to be ok.

SPARE PARTS

All that should be needed to replace the front wheel bearings is the bearings themselves. They are both the same and are standard 6302U bearings. It is also worth buying a new bearing retainer cap as these are made of soft aluminium alloy and are almost always damaged on removal. These parts are available through Honda under part number:

Description	Part Number	Quantity
Bearing, Radial Ball	96140-63020-10	2
Retainer, Front Wheel Bearing	44643-300-000	1
Dust Seal, 22 x 36 x 8	91 252-300-003	1

(The dust seal fits inside the Bearing Retainer)

STRIPPING THE FRONT WHEEL

Place the bike on its centre stand, lift the front wheel clear of the ground using a car jack to support the weight of the bike and then after ensuring that the bike is stable, remove the front wheel. Strip it down as follows:

Clamp the wheel spindle in a vice and loosen off the main spindle nut.

Unclamp the wheel from the vice and pull the spindle out completely.

Remove the speedo drive assembly from the wheel, followed by the disc brakes.

The left hand bearing is held in place by an aluminium retaining ring, this should be removed using a special Honda tool. It can however, be removed just as easily using a hammer and drift. It will however, damage it and a new one will be needed to replace it.

Using a short length of bar about 15mm diameter and 100mm long, knock out one bearing by passing the bar through the wheel and tapping the bearing alternately on each side with a hammer.

Once the bearing has fallen out, remove the spacer from inside of the wheel. Turn the wheel round and knock out the remaining bearing.

Once the old bearings have been removed, clean out the bearing housings completely and smear a little grease over the bearing spacer to prevent it rusting.

Place the new bearing over its housing, put a piece of wood on it and gently tap into its housing using a hammer.
Turn the wheel round, put the spacer into the wheel and knock the remaining bearing into place

Fit the new oil seal into the bearing retainer and secure it in place over the left hand bearing. Once it is secured in place, centre punch it to lock it in position.

Re-fit the speedometer assembly, followed by the disc brakes and then the spindle.
Fit the wheel back into the bike.

CHANGING THE REAR WHEEL BEARINGS

INTRODUCTION

The rear wheel on all versions of the Gold Wing employs two single ball race bearings, one bearing pushed into a housing on each side of the wheel. Replacing the bearings is simply a matter of drifting out the old bearings and replacing them with a new pair. It is not worth replacing one bearing only, so always set out to replace both bearings even if, on examination one of the old bearings appears to be okay.

SPARE PARTS

All that should be needed to replace the rear wheel bearings is the bearings themselves. It is however, also worth buying a new bearing retainer cap as these are made of soft aluminium alloy and are almost always damaged on removal. These parts are available through Honda under part number:

Description	Part Number	Quantity
Radial Ball Bearing, 6204U	96140-62020-10	1
Radial Ball Bearing, 6304U	96140-63040-10	1
Dust Seal	91253-356-005	1
Rear Wheel Bearing Retainer	91231-286-000	1

STRIPPING THE REAR WHEEL

Place the bike on its centre stand, remove the wheel and:

Remove the disc from the wheel to prevent it getting damaged.

Remove the cush drive assembly from the right hand side of the wheel. It may need a little persuasion, but it should just pull straight out.

The left hand side bearing is held in place by a retaining collar. There is a special Honda tool for removing this, but it can be removed by using a drift to knock it round. Using a short length of bar, about 15 mm diameter and 150mm long, knock out one bearing by passing the bar through the wheel and tapping it with a hammer

Once the bearing has fallen out, remove the spacer from inside of the wheel. Turn the wheel round and knock out the remaining bearing.

Once the old bearings have been removed, clean out the bearing housings completely (smear a little grease over the bearing spacer to prevent it rusting).

Place the new bearing over the bearing housing, put a piece of wood on it and gently tap into its housing using a hammer.

Turn the wheel round, put the spacer into the wheel and knock the remaining bearing into place.

Fit the new dust seal into the new bearing retainer and fit the new retainer in place over the left hand bearing. Once the retainer is secured in place, use a centre punch to lock it in position.

Refit the cush drive into the right hand side of the wheel, applying a little grease to it so as to prevent corrosion. Refit the disc to the wheel.

The wheel can now be refitted to the bike.

CHANGING A TUBELESS TYRE

INTRODUCTION

When tubeless tyres were first fitted to motorcycles, great play was put on the fact that they were difficult to change. Whilst there is a certain amount of truth in that statement, it isn't as hard as some would make out, and changing a tubeless tyre can in some cases be easier than changing a tubed one.

SPECIAL TOOLS

There are a number of special tools that can be bought to help change tubeless tyres, but this article has been written assuming that none of them are available. You will however, need a good set of tyre levers.

PREPARATION

Remove the wheel from the bike and then clean to remove any road dirt. Once this has been done, deflate the tyre and remove the tyre valve.

REMOVING THE TYRE

The hardest part of changing a tubeless tyre is persuading the tyre to separate from the rim of the wheel. Tyre shops have a special machine that does this with great ease, but it can be done at home using one of the following methods:

Stand the wheel in a vice such that the vice jaws grip the tyre as close to the rim as possible. Tighten down the vice until the tyre breaks away from the rim. If no suitable vice is available, then you will need to stand something on the tyre until it breaks away from the rim. One method that has worked is to carefully tilt the GoldWing sideways until there is enough room under one foot of the main stand to place the tyre underneath. Place the tyre under the foot and let the weight of the bike come to rest on it. You will need to do this twice, once for each side of the tyre. It does work, but take care not to topple the bike over!

Once the tyre has broken away from the rim in one place, it can be worked by hand until it breaks away all the way round.

Once it has broken away, work the tyre beading into the well of the wheel. Mix a little washing up liquid (or Swarfega) with some water and apply this to the tyre.

Once this has been done, gently work the tyre over the rim, making minimum use of the tyre levers.

Clean up the wheel and you are ready to fit the new tyre.

FITTING THE NEW TYRE

Smear a little of the washing up liquid around the bead of the new tyre to act as a lubricant and offer it up to the wheel.

Check for any Direction of Rotation arrows that may be on the tyre and ensure that it is the right way round. Some tyres have a yellow or red dot on the sidewall and this should line up with the tyre valve.

Work the first tyre bead onto the wheel, making minimum use of the tyre levers, and sit it in the tyre well.

Do the same for the second tyre bead. Now that the tyre is on the wheel, you will need an airline. If you haven't got one available, then transport the wheel to the nearest garage. Remember to to stick the tyre valve in you pocket!

Connect the airline to the tyre and inflate it without putting the valve back in. It may take a few seconds but the tyre will suddenly decide to inflate and seal against the rim.

Inflate it to about 2Opsi and then let it down again.

Fit the tyre valve and inflate to the correct pressure.

Check the wheel to ensure that it is sitting against the rim properly, and it's ready to be fitted back to the bike.

FIXING A PUNCTURE IN A TUBLESS TYRE

INTRODUCTION

When tubeless tyres first came onto the market, one of the criticisms levelled at them was if punctured they could not be easily repaired. Puncture tyre repair kits are now available however, that make it possible to affect a fairly permanent repair at the side of the road. These kits provide a much more permanent repair than do the aerosol can type, which appear only to have about a 50% success rate. The makers of these kits do advise that a tyre that has been punctured is eventually taken to a shop for a permanent repair, so that the inside of the tyre can be checked for any damage. Tubeless tyre repair kits are available at most good tyre shops. The kit sold by Metzeler comprises of:

A small file and hook

Two rubber plugs

A tube of Glue

A tyre Valve adaptor

Two compressed air cylinders

The whole kit would just fit in a cigarette packet

REPAIRING THE PUNCTURE

Place the bike on its main stand, turn the tyre so that the hole can be seen and proceed as follows:

If the tyre is wet, dry the tyre so that water as little water as possible is worked into the tyre. If the object that made the hole is still in the tyre, pull it out.

Using the file, roughen up the hole to provide a good key for the glue.

Once this has been done, open up the glue and work some of it into the hole. Insert one of the rubber plugs into the hook, and push into the tyre until you can feel the head of the plug come through the inside of the tyre. Withdraw the hook.

Pull the protruding part of the plug to ensure that the head of the plug is up against the inside of the tyre, and then leave it to dry for a few minutes.

Screw the adaptor onto the valve, and screw on one of the compressed air bottles. The tyre should then inflate. Because of the size of the Gold Wing tyres, it may be necessary to use both bottles to get the tyre hard enough to ride on.

Remove the spent bottle, followed by the adaptor. Check that the rubber plug is not leaking, by putting a little water (or spittle) on it, and then cut it off level with the tyre.

Ride to the next garage and check the tyre pressure.

This type of repair should not give any trouble, but it is wise to have the tyre properly repaired as soon as is possible so that the inside of the tyre can be checked for damaged.

REPAIRING DAMAGED FAIRINGS

INTRODUCTION

Although the design of fairings has improved considerably over the last few years, it still only takes a minor knock or bump to crack or damage one, and if not repaired immediately, even the smallest of cracks will eventually condemn a fairing to the scrap heap. Though fairings are now made from materials other than glass re-enforced plastic (GRP), they may all be repaired in the same way.

MATERIALS

There are many different types of fillers and repair pastes on the market, but the one that gives good results is ISOPON P40. This is a repair paste and not just a filler, it comes ready mixed with glass fibre strands. It is also worth buying a sheet of aluminium reinforcing mesh.

PREPARATION

Having cleaned down the area around the crack to remove any road dirt, oil or grease, the first thing that must be done is to prevent the crack getting any longer. This is done simply by drilling a hole of about 3 - 5 mm diameter at the end of the crack. This spreads the stresses at that point and stops the crack getting worse. Having done this, the next step is strengthen the fairing on the inside.

REPAIR

If necessary, use ropes, wooden wedges, bungee straps and anything else that comes to mind to ensure that the two halves of the crack lie together correctly. Once the crack is held together correctly, proceed as follows:

Offer the aluminium mesh up to the inside of the fairing, and bend it to follow the contour of the fairing. It can be cut with scissors if necessary to clear any obstructions such as indicator housings etc. Using the roughest grade sandpaper that can be obtained, thoroughly scuff the inside of the fairing to provide a good key for the repair paste.

Mix up the repair paste and smear an even coat over the inside of the fairing about 2 - 3mm thick.

Press the aluminium mesh into this and then apply more repair paste over the entire area.

Provided there is enough room, this layer should be built up as much as possible and should be at least 6mm thick in the middle.

Whilst the repair paste is still workable, smooth it of to produce as good a finish as possible. Many people make the mistake of deciding to let the repair paste go hard first, but once it is dry, it is hard work trying to get a smoothly contoured finish and a rough finish is likely to provide more stress points.

Once the repair paste has gone hard, use a suitable tool such as a chisel, to form a groove along the crack on the outside of the fairing. This can the be filled with a filler and sanded down to produce a smooth finish.

Once dry, paint it over and the repair is complete.

SAGGY FRONT SUSPENSION

One of the other problems encountered is that the original front fork springs may partially collapsed with age. Stronger springs are available from suppliers advertising in the Wingspan.
When changing them be VERY CAREFUL as the springs are several inches longer than the fork legs. If the fork top nut is not controlled while being removed, the nut may be released with considerable force and could cause injury. Honda sell a special tool for ensuring that this does not happen and it is recommended that the tool or a similar home made tool is used for removing and replacing the fork top nuts.
Once the nuts are removed on 1500 models it is useful if they are drilled to accept a bolt small enough to fit into the hexagon or an air valve (as per the American model SE's). This will mean that front fork oil replacement can be carried out without having to replace the fork top nut in the future.

PROJECTS

FITTING ACCESSORIES

The following may help if you decide to fit chrome accessories by yourself.

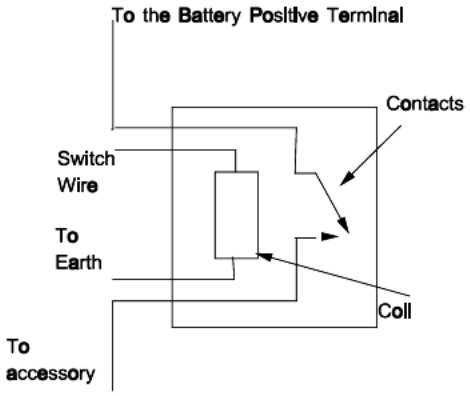
1. **ALWAYS** offer the part up to the bike before fitting. This will make sure the part will fit and the person who sold it to you is more likely to be co-operative if the screws, tape etc are intact. When doing this make sure the part will not interfere with any moving parts of the bike.
2. Make sure the part is for the right model. If it is not be extra careful fitting it as you may end up with a bike that is dangerous.
3. It may seem obvious but READ the instructions. If all is still not clear try to look at another bike with the same accessory fitted before fitting the item yourself.
4. If the part is to be stuck on, either with self adhesive tape or liquid glue make sure the area is really clean. Use a solvent that is safe on the area to be cleaned and wipe dry with clean, dry lint, free rag.
5. If there is a requirement to drill holes in the bike to fit the part, put tape over the area to be drilled. This tape can then be marked with a pen to show where the hole is to be drilled. It will also help to protect the surrounding area should the drill slip.
6. When drilling a hole, use a hand drill if possible. This will make it less likely for the drill to slip and damage the surrounding area.
7. When the job is finished, make sure the parts fitted do not interfere with the steering or other moving parts of the bike.
8. Stand back and admire the work that you have completed.

FITTING ELECTRICAL ACCESSORIES

Many owners fit their own electrical accessories to their bikes. Providing certain rules are followed there should be no problem in doing this. To make it easier for fault finding it is advisable to use the correct colour cable, a chart giving the standard Honda colours most commonly used are given below.

Colour	Used For	Colour	Used For
Red	Feed direct from battery. Live at all times	Black	Switched live, becomes live when the ignition switch is in the on position
Blue	Live when Main Beam is selected	White	Live when Dip Beam is selected
Brown	Live when side lights are switched on	Brown/White	Live when side lights are switched on
Green/ Yellow	Live when brake switch is operated.	Black/ Light green	Live when ignition switch is switched on or in ACC position
Light Blue	Live when LH indicator is switched on	Orange	Live when RH indicator is switched on
Light Blue/ White	Normally live with ignition on, but dead when LH indicator on	Orange/ White	Normally live with ignition on, but dead when RH indicator on

It is important that the accessory fuse is not overloaded. Under no circumstances should this fuse be replaced with one of a larger size.
It is advisable that all accessories should be fed from the battery via a relay and a fuse fitted as close as possible to the battery. The relay should be wired so that the relay is switched off when the ignition is switched to off. A further switch may be installed if required.



As an example, when wiring additional rear lights the switch wire should be connected to any brown or brown/white wire located on the bike.

When wiring in accessories, make sure the cable is of sufficient size. The cable size and fuse controlling it should be worked out using the formula Current = Watts divided by voltage.

For example if you are fitting a pair of 55watt spotlights the current would be
Current = (55W times 2) divided by 12 volts = 110 watts divided by 12 volts = 9.16 amps.
In this case the cable to be used should have a minimum rating of 10 amps with a 10 Amp fuse fitted.

FITTING A GL 1100 MOTOR INTO A 1000 FRAME (Part 1)

INTRODUCTION

The GL 1000 and 1100 engine are similar enough to make it possible, with a little conversion work, to fit an 1100 engine into a 1000 frame. Externally there is very little difference between the two engines except that the 1100 engine has a CDI unit on the back of the rear casing. This unit increases the overall length of the motor such that it would foul the 1000 frame without fouling. The two ways of overcoming this are:

To modify the frame with a little cutting and welding around the swinging arm to obtain enough room to clear the CDI unit.

To modify the engine by removing the CDI unit.

Both methods have their advantages and disadvantages, but the method I used was the latter of the two as modifying the engine would enable me to leave the frame completely standard and I wouldn't have to obtain the GL llOOs electronic ignition system. If anyone has tried modifying the frame, let me know how you got on.

MODIFYING THE ENGINE

The modification work consists of removing the CDI unit, and converting the engine to use the GL 10OOs original points housing as follows:

Remove the CDI unit from the rear casing and put it to one side.

Remove the rear casing from the engine and pull the CDI drive shaft out of its tang on the crankshaft. Replace the rear casing.

Using the CDI unit as a template, make up a blanking plate to replace the CDI unit with, and bolt it to the rear casing. This blanking plate can be made from 3 - 5mm thick aluminium plate.

Replace the camshafts with those from the 1000.

Fit the 1000 points housing and points or a Piranha ignition kit.

You can treat the engine as a 1000 and fit it into the frame as per normal. You will however need to buy a GL 1100 clutch cable.

ON THE ROAD

Having fitted a modified GL 1100 engine into my KZ, I can tell you that this conversion works and performs quite well. There is a small problem though, in that mating a GL 1100 engine to a GL 1000 shaft drive unit has made the engine under geared by about 5 - 600 rpm. This loss of gearing may not be acceptable to some, so part two of this project describes how to strip down an 1100 motor and convert to 1000 gearing.

FITTING A GL1100 MOTOR INTO A 1000 FRAME (Part 2)

INTRODUCTION

In part 1 I described how a GL 1100 motor could be modified to fit a GL1000 frame. The conversion worked well except that I found that because the set up consisted of an 1100 motor and a 1000 shaft drive unit, the overall gear ratio was about 14mph per 1000 revs, giving a top speed at the red line of 112 mph, which works out at 5000 rpm at 70 mph. This would be great for a sidecar outfit, or for cruising around a 50 mph, but I wanted to raise the gearing as it felt too busy on the motorways.

One way of raising the gearing would have been to have fitted an 1100 shaft drive unit, but that involved too much cutting and welding and I wanted to use nothing but totally standard parts if at all possible. I decided to strip both the 1100 motor and my 1000 motor and see what I could do.

My original intention was just to replace the final drive gears on the 1100 with those from the 1000. Unfortunately, it wasn't so simple as the two engines have slightly different gear shaft diameters! So after doing a lot of measuring, cursing and spanner work, I eventually raised the gearing by replacing the following parts with parts from the 1000 motor:

The complete gearbox, with the exception of 5th gear, which was one tooth higher on the 1100 motor.

The clutch, along with its cover

The final drive gear on the output shaft

The rear engine casing

The gear selectors

The camshafts (along with the contact breaker housing)

The rear casing

Don't let the thought of replacing all these parts put you off doing this job, the result is worthwhile and works well, giving you the advantages of the extra power of the 1100 motor along with its beefed up crankshaft and primary chain, combined with the correct gearing for a GL 1000 frame.

REPLACEMENT PARTS

Assuming that the 1100 motor needs no worn parts replacing, all you will need to complete this conversion are the following gaskets:

DESCRIPTION	PART NUMBER	QUANTITY
GL1100 Head Gasket,	12251 -463-000	
Transmission Cover Gasket	11391-371 -000 1	

STRIPPING THE MOTOR

There is not enough room in Wing Span to cover stripping down a GoldWing motor in detail. That information can be found in any good workshop manual. What I shall describe here is the assemblies that need to be removed, and which parts should be replaced. So starting with the GL 1100 motor sitting on a bench, drained of oil, proceed as follows:

Turn the crankshaft over until the Ti mark lines up.

Remove the cam belt covers and then the cam belts.

Remove the water pipes from the top of the engine.

Remove the fuel pump assembly from the RH cylinder head.

Remove the LH cylinder head.

Remove the front transmission cover.

Remove the rear clutch cover, followed by the clutch housing.

Remove the clutch, oil pump chain and its sprocket.

Remove the inspection cover on the RH side of the engine to expose the final drive gear.

Pull out the final drive shaft, and as it comes out, remove the final drive gear through the inspection hole in the RH crankcase.

Remove the starter motor, followed by the alternator and drive shaft assembly (this is to save weight when trying to separate the crankcases).

Remove the bolts securing the crankcases together, and separate them. This may prove to be difficult, but use gentle persuasion, and not brute force to get them apart. Make sure that the pistons do not fall down on to the RH crankcase and damage
themselves in doing so.

Once the crankcases are apart, lift up the main shaft until it clears its gear selectors, feed it out from the primary chain and put it to one side.

Remove the cap in the front of the engine holding the countershaft bearing in place, slide the whole shaft to the front slightly, remove the rearmost gear and then remove the countershaft assembly from the engine.

Pull out the pin holding the gear selector rod in place, and push the rod out through the front of the engine.

The engine is stripped as far as you need go.

CONVERSION

Converting the engine is now simply a case of rebuilding using the parts listed above from the 1000 engine. You have to decide now though, whether you want exactly the same gearing as you had before, in which case you simply put in the 1000 gear assemblies, or whether you would like to raise 5th gear by about a 100 revs, in which case, replace the front most gears on the two shafts with the pair from the 1100. The 1000 gears are - Main shaft 33, Countershaft 31, and the 1100 gears are - Main shaft 33, Countershaft 30. It is most important to change them as a pair. Once you have done this, you are ready to rebuild the motor.

REBUILDING

Clean all the assemblies and rebuild the motor as follows:

Fit the 1000 gear selectors followed by the Countershaft.

Remove the Primary Driven Sprocket from the 1000 Main shaft and replace with the one from the 1100 engine (The 1100 unit is wider). Fit this assembly into the engine ensuring that the gear selectors locate correctly, and that the primary chain is properly
engaged.

With a lot of patience, and great care, offer up the LH crankcase, carefully guiding the pistons into their bores, and secure it back in place. Use a gasket compound such as blue Hylomar on the mating faces.

Refit the front transmission casing using the new gasket.

Refit the alternator assembly, starter motor chain and starter motor.

Fit the 1000 clutch, oil pump chain and the oil pump sprocket.

Refit the final drive shaft, using the 1000 final drive gear.

Fit the 1000 rear casing, followed by the 1000 rear cover. If the gasket is damaged, discard it and use gasket cement instead.

Refit the LH cylinder head.

Remove both the 1100 camshafts from the cylinder heads, and replace them with the 1000 cams. Fit the points housing to the LH head.

Finish of the engine by replacing the cam belts, followed by their covers and refitting the water pipe assembly to the top of the engine.

FITTING THE MOTOR INTO THE FRAME

Leave the carburettor bank off the motor, and fit it into the frame as per normal. To fit the carburettors, you will have to remove the tops to the two RH carburettors and refit them after putting the bank in position.
There you have it, a GL 1100 motor geared to suit a 1000 frame. From a servicing point of view, treat it as a GL 1000 except the Valve Tappet clearance which must be set up as per an 1100.

ON THE ROAD

I done this conversion to my bike now, and have found that it works well, I'm happy with the gearing, as the 1100 fifth gear just about makes up for the fact lye got a 16' Lester rear wheel fitted, and although its now not a standard motor, it runs as smooth as silk.

FITTING ELECTRONIC IGNITION TO A GL 1000

INTRODUCTION

The 1000 cc version of the GoldWing was fitted with contact breakers as original equipment. These had the advantage that they were cheap to make, but from the owners point of view they are a nuisance as they need to be maintained in top condition or performance would suffer. One way of keeping performance at its peak and cutting down on servicing is to fit an electronic ignition kit. These kits are proving difficult to get hold of now, as the last l000s were sold in this country in 1980, and demand for accessories for these bikes tailed off. One kit that is still available though is the Piranha Electronic Ignition Kit. It is the optical type using light emitting diodes and a rotor blade. The units have proved to be very reliable and should last the life of the engine without ever needing to be adjusted once set up.

NEW PARTS

The new parts that will be required are all contained within the Piranha Kit itself. The kit No for a GoldWing is:

PREPARATION

Place the bike on its main stand, ensure that the engine is cold and proceed as follows:

Remove the Dummy tank panels, LH side panel and the CB points cover.

Disconnect the battery.

Remove the cap from the timing hole cover, located on top of the engine just the rear of the carburettors and replace it with the timing window supplied with the Piranha kit.

Remove the cap from the from the centre of the alternator cover.

Using a 12mm socket turn the engine over until the F2 timing mark is lined up with the line on the timing window. Do not turn the engine over anti-clockwise (as you look at it). If you miss the F2U mark, go round again.

Follow the wire harness leaving the points housing up to its connections in front of the battery.

Disconnect it here along with the condensers. The condensers may be removed from the bike as they are no longer used.

Remove the two cross head screws securing the points timing plate to the cylinder head and remove it.

Remove the 6mm bolt securing the advance and retard mechanism to the camshaft, and remove the complete assembly.

There is a small locating pin in the camshaft, make sure that it doesn't fall out.

Hold the advance and retard mechanism in one hand and carefully prize open the balance weights. Remove the point's cam. and replace it with the new item.

Replace the advance and retard unit onto the cam, ensuring that it engages correctly with the locating pin on the cam.
Fit the new Piranha base plate over the advance and retard unit and secure the entire assembly in place using the 10mm retaining bolt and washer.

Checking that the F2' mark is still properly aligned, rotate the base plate so that the lamp housings are placed at roughly the quarter past six position'. Carefully rotate the right hand lamp until the trailing edge of the right hand rotor is positioned in its centre. Temporarily secure the base plate in place using the two cross-head screws fitting the cable clip back in place under the right hand screw.

RECOVERING A SADDLE

INTRODUCTION

A torn seat is not only uncomfortable, but detracts from the good looks of a bike that might otherwise be in good condition. Recovering a seat isn't that hard to do and is far cheaper than buying a new one. MPS for instance, will sell a kit to recover a GoldWing seat for E9.95. I tried one of these kits out on my own seat which had at last developed a tear, but found that the plastic trim supplied by them looked cheap and amateurish, so I fitted it in place by salvaging some of the original trim from my own seat. Its a little harder to do it this way, but the result is well worthwhile.

SPECIAL TOOLS

No special tools are needed, but you may need a sharp knife with which to remove the old cover.

PREPARATION

Remove the seat from the bike. The actual method of doing this will vary depending on which version GoldWing you have, but basically there are two fixings at the back on each side of the seat, - remove these, pull the seat to the rear and it should come free. Once you have done this, proceed as follows:

The first thing to do is remove the chrome trim around the seat without breaking it. To do this, turn the seat upside down and straighten out the aluminium rivets found there. Remove the spring clips holding the rivets in place by prizing them off with a screwdriver. The trim can then be pulled gently away from the cover, bringing the rivets out with it.

Using an old screwdriver, bend the tangs holding the cover in place on the underside of the seat pan until they are at an angle of 80 - 90 degrees from flat. Pull the old seat cover off.

Once the cover is off, remove the foam seat and clean it thoroughly. Discard any edge protecting trim around the seat pan and clean it thoroughly. If it is damaged or rusty, then now would be the best time to paint/repair it.

FITTING THE NEW COVER

Ensure that the foam seat is dry, place it back on the pan and proceed as follows:

Open up the seat recovering kit and lay the new seat cover on the floor, good side downwards.

Put the seat on top of the cover and gradually work the cover over the foam. Don't pull to hard as the cover will tear very easily! Once the cover is over the seat, turn it over and inspect it to make sure it is on centrally. If you are happy then you are ready to start fixing it in place.

Starting at the front, pull gently but firmly on the surplus material and fold it down under the seat pan and push it onto a tag. Bend the tag down flat. Continue doing this round the seat, working from side to side until you reach the back.

From the underside of the seat pan, push a small screwdriver through the holes where the rivets holding the chrome trim will go. Offer up the trim to the outside of the seat, pushing the rivets in it
through these holes. The spring clips can then be pushed back on the rivets and the rivets bent over.

The seat is then finished, and should look as good as new.

UPDATING THE CHARGING SYSTEM ON A GL 1000

INTRODUCTION

If the charging system on your GL 1000 has failed, then it is possible to repair and upgrade to the system used on the 1100. This entails removing both the regulator and the rectifier from the 1000, and replacing it with the combined unit from the 1100. To understand the advantages of the new system, it is necessary to explain the differences.

The GL 1000 system

Three yellow wires run from the alternator. The first wire runs to the rectifier, and then on to the battery. The second wire goes to the regulator and then on to the rectifier. The third wire runs up to the lighting switch and is switched on with the lights and then back to the rectifier.
On this system then, two alternator coils are on all the time with only one of them being regulated. The third being switched in when the lights are turned on.

The GL 1100 system

Three yellow wires run from the alternator direct to a combined regulator/rectifier. On this system, their are fewer wires, less components, and all three wires are being regulated.
If you have additional electrical accessories on your Wing, it can be seen that the charging system from the 1100 would be best as it can use all three coils with the lights off to generate electricity.

REPLACEMENT PARTS

A regulator/rectifier unit from a GL 1100 from a breakers. You will also need the following 5 amp wires

Yellow	1 metre
Red	0.5 Metre
Red/White	0.5 Metre
Black	0.5 Metre
Green	0.5 Metre

If you buy a regulator/rectifier from a breaker, make sure that it works correctly, even if you have to pay your local bike shop to check it for you.

TOOLS

An electric drill with a 6mm drill bit will be necessary. Bullet connectors and a crimping tool will also be needed.

PREPARATION

Preparation for fitting the 1100 unit is as follows

Place the bike on its main stand, remove the side panels and the dummy tank panels. Disconnect the battery

Unplug and remove the rectifier from its position in front of the battery.

Unplug and remove the regulator from its position on the left side of the dummy tank.

Tape over the empty sockets on the wiring harness as they will not be used.
Follow the wire harness up from the alternator to its plug and unplug it.

FITTING THE NEW REGULATOR/RECTIFIER

The new unit will fit in the same position as the old regulator, but will need to be rotated slightly in order to fit. Offer the unit up to the bike, mark the position of the new mounting holes, remove the unit and drill out the holes. Secure the new unit in place using suitable fixings.

ELECTRICAL CONNECTIONS

Connect up the wires coming out of the new unit as follows

The three yellow wires coming out of the new unit to the yellow wires at the alternator plug (Any yellow to any yellow).

The green wires directly to earth.

The black wire to ignition live (This can be connected using the wire going to the old regulator socket).

The red/white wire directly to the battery.

TESTING

A voltmeter attached across the battery should give a reading of 14 - 15 volts at 5000 rpm with lights on or off.

CHANGING THE HANDLEBARS

INTRODUCTION

Changing the handlebars on the 1000 and 1100 versions of the GoldWing should present no difficulties to anyone. Its simply a matter of undoing four cap head screws, removing the old bars, replacing them with the new ones and clamping them up again.

Problems can arise though, with all the items that have to be attached to the new bars such as the throttle cables etc. So here are a few hints that might help you when trying to get everything to fit back in place.

CONTROL CABLES

Check that there is enough slack in the throttle cables and the clutch cable to reach the controls on the bars. If not then you will have to invest in a longer set. The longest control cables available from Honda are the ones for the GL100 DXB. If these are not long enough then you will have to resort to buying a special kit.

BRAKE LINE

If your new bars are more than a few inches higher, then you may find that you will also need a new length of brake line. This is best done by replacing it with a length of Goodridge stainless steel braided brake line. This is available now from most good motorcycle dealers, who will be able to make it up to any required length. You could just replace the old line with a length of normal brake
line, but the extra length would make it feel spongy.

WIRING HARNESS

If you find that the cables from the switches no longer reach their sockets, then you will have to extend them. This isn't a hard job to do, but it can look terrible if not done correctly. To extend the cables, remove the protective covering sleeve from the wiring harness with a sharp knife and proceed as follows:

Cut each wire in turn, moving down the cable about 50 cm after cutting each wire. This will help to prevent the wire harness bulging in one place when finished. Strip back the end of each wire to reveal its core.

Cut up some black electrical cable to the length you would like to extend the harness and strip back the ends of each wire to reveal its core.

Connect the wires up together using a crimping tool and some in line connectors (available at most car shops), connecting like coloured wires together. Soldering these wires isn't a good idea, as the wire is liable to break at the point where the solder finishes.

Once you have done this, cover the exposed harness with an old bicycle inner tube and wrap PTFE tape around it. The inner tube gives the harness a little more protection and allows the finished harness to be slightly more flexible.

STEERING LOCK

Once you have fitted your new handlebars, turn them from full lock to full lock and ensure that they don't foul anywhere. Not very likely if you are fitting higher bars, but if they do foul somewhere then you will have to restrict the steering lock to prevent this.

FITTING ACCESSORY GAUGES

INTRODUCTION

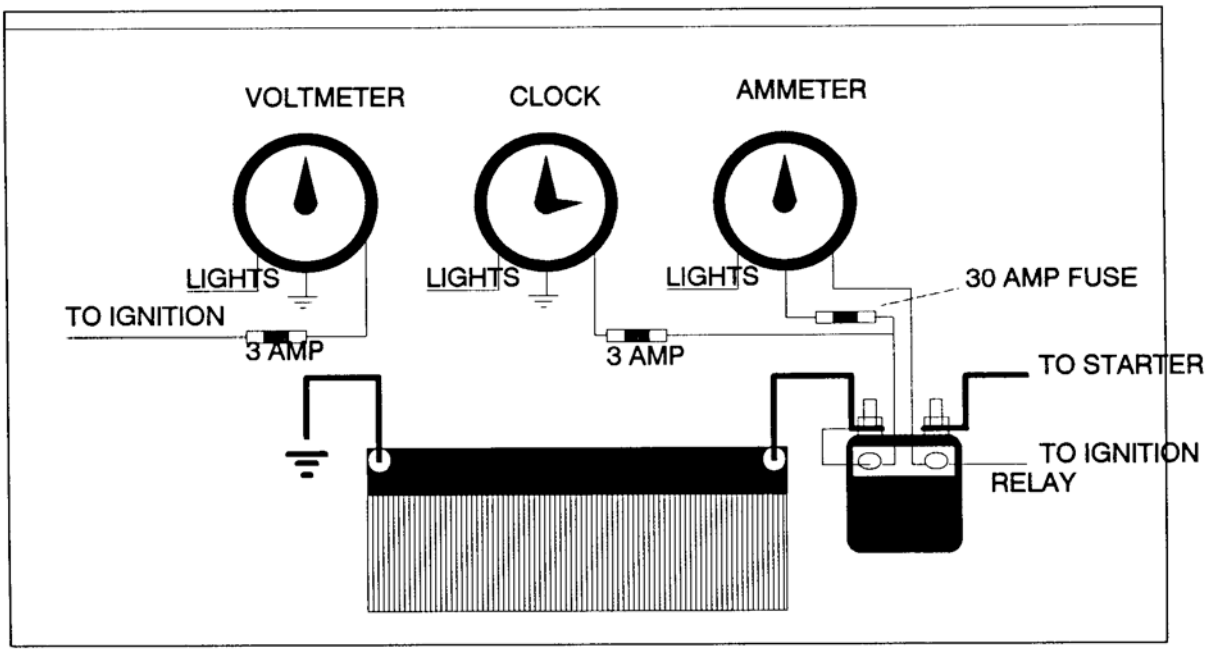
Fitting an accessory gauge (such as a clock) to your GoldWing is not a difficult task, the biggest problem will be working out where to site it and how to actually fit it in place. The actual fitting of any gauge should be carried out in accordance with the instructions that are provided with it. The wiring for the most common types of gauges is covered below:

CLOCK

There are normally three wires coming out of a clock, one earth wire which should be wired direct to the frame, one live wire which should be wired direct to the +ve terminal of the battery (via the fuse) and one wire for the clock light, which should be wired up to the Brown/White wire on the GoldWing (This Wire feeds the instrument lights in the Speedo/rev counter).

VOLTMETER

There are normally three wires coming out of a voltmeter, one earth wire which should be wired directly to the frame, one live wire which should be wired into the Black ignition wire on the GoldWing (this wire can be found behind the main ignition switch) and one wire for the gauge light, which should be wired up as described above.



An ammeter should be wired so that all the current used by the bike passes through it, EXCEPT FOR THE STARTER MOTOR CURRENT. This is done by connecting the meter in line on the positive side of the battery. To accomplish this, without having to cut any of the bikes existing wires, proceed as follows:

Remove the main 30 amp fuse sited behind the battery, (on GL1lOOs and onwards, the fuse is on top of the starter relay). Connect each of the two wires coming out of gauge to the fuse holder, one to each side. The one remaining wire for the gauge light, should be wired up to the Brown/White wire on the GoldWing. (This Wire feeds the instrument lights in the Speedo/rev counter).

Fit a 30 amp in-line fuse to the supply wire to the ammeter.

If, when in use, the meter appears to be wired up backwards, simply change the connections over at the old fuse terminal

PLASTIC COATING
(Submitted by Big Al)

INTRODUCTION

You may have noticed adverts in the motorcycle weeklies on plastic coating and after having some done I can say that I'm very impressed with the results. The treatment can be used very effectively on anything from a complete frame down to those small, difficult bits like the main stand, footrests etc.

Its a very simple method, consisting of heating the parts up to a certain temperature, and then dipping them into a tray of powder which is in fact, fine grains of plastic and after about 3 seconds lifting them out again. At this stage, it looks as if the component is covered in sand. Then, before your very eyes, the plastic melts to form a smooth glossy skin which hardens as it cools.

The result is a tough plastic skin which is impervious to oil, salt and water and anything else that the weather can throw at it. It should last for years and is very chip resistant. The cost is very reasonable, and can be reduced if you clean the frame up yourself (not really worthwhile unless you are extremely poor).

The firm which did mine was. I found them very helpful and quick, they did my pieces while I waited and it only took half an hour. They also do DIY kits available in 7 different colours. You simply pop your component in the oven for half an hour or so, depending on size, and then dip it into the powder and allow it to air cool.

FITTING BRAIDED STEEL BRAIDED BRAKE HOSES

INTRODUCTION

The brake lines fitted to most big motorcycles are prone to deterioration over a period of time, becoming brittle and liable to crack. If you find that the brake lines on your Wing are in need of replacement then it is worth considering fitting Goodridge braided brake hose. This type of hose consists a thin Nylon tube surrounded by a reinforcing stainless steel mesh. They are produced to aircraft specification and will outlast ordinary rubber lines by many years. They also have the added advantage that they do not expand under pressure and so make the whole braking system feel much more taught and controllable.

BUYING THE HOSES

Most good motorcycle shops now sell Goodridge Hoses and will make them up to any desired length. All you need tell them is which model GoldWing you have and they will be able to supply you with a kit. If you have raised the handlebars, then they will be able to supply you with a longer hose.

FITTING NEW HOSES

Replacing the hoses is not a particularly hard job, but you must take care not to spill any brake fluid onto the bike as it makes a very effective paint stripper. Bearing this in mind, proceed as follows:

Fit some rubber piping onto the bleed nipples on both of the front brakes and run them into a glass jar. Loosen off the nipples

Remove the cover from the master cylinder on the handlebars, and slowly pump the brake lever until all the brake fluid has drain out.

Unscrew the banjo bolts holding the lines in place and remove them. Take care as a little brake fluid is liable to seep out. Use a rag to catch any spillages.

Fit the new hoses in place of the old ones, ensuring that a washer is placed each side of the banjo before securing it in position. Do not over tighten the banjo bolts as they are hollow and will break.

Once the new lines have been fitted, refill the system with new brake fluid and bleed it as described in MAINTENANCE.

TAKING THE BIKE OUT

Until you have got used to the feel of brakes fitted with the new lines take care as they may catch you out. You will find that they are more taught and have a more immediate feel to them.

SETTING UP A SIDECAR
(Submitted by Paul Evison)

INTRODUCTION

The GoldWing has a number of characteristics that make it well suited for sidecar service. It has an engine that is in a fairly mild state of tune, giving plenty of torque without being peaky. The motor is smooth and quiet, a great advantage to a sidecar passenger. Having a shaft drive fitted is another plus. It is essential though, that a sidecar is set up properly, and there are three points that need to be checked to achieve this, each described below.

TOE IN

In order for a sidecar to turn to the left or right with ease, it should be rigged such that its wheel points not parallel to the axis of the bike, but slightly inwards so that if lines were drawn on the road to show the direction that the bike and the sidecar were pointing, they would eventually meet. Normally dimension A would be 35mm less than dimension B. The front lower fitting on a sidecars fittings is the one to be adjusted to alter the amount of toe in.

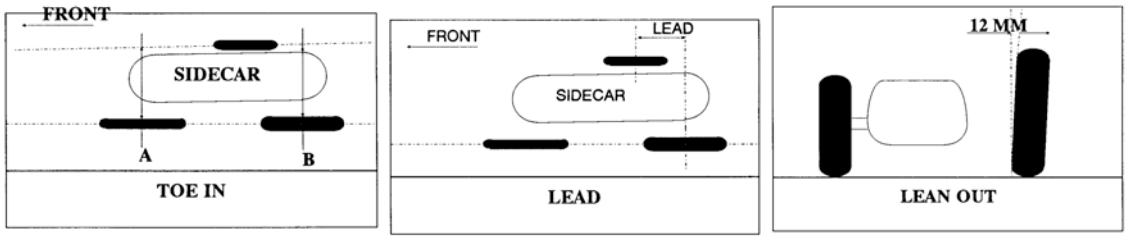
LEAD

Sidecars are normally mounted such that the wheel of the sidecar is ahead of the rear wheel of the Bike (Hence it is leading the rear wheel). It is measured as the distance between the centre of the rear wheel spindle and sidecar wheel spindle. The rear lower fitting on a sidecars fittings is the one to be adjusted to alter the lead.

LEAN OUT

In order to prevent a sidecar outfit pulling the bike to one side, it should be set up such that when it is empty the bike should lean away from the sidecar by about 12mm. Measuring this dimension is difficult, but it can be done using a plumb line attached to the back of the bike, or by setting a square edge up against the rear wheel. The top rear fitting on a sidecars fittings is the one to be adjusted to alter the amount of lean out.

It is normal for a sidecar to have four fittings attaching it to the bike. The fourth fitting is there to add rigidity and support the rear top fitting.



TRAILERS

A trailer must be towed from the centre of an outfit, to stop trailer wobble. The maximum speed when towing a trailer is 50 mph.

The weight of the trailer must not exceed 150 kg, or two thirds the weight of the motorcycle and sidecar unladen weight.

PROBLEMS

SYMPTOM	POSSIBLE CAUSE
Steering Wobble	Low front tyre pressure
	Loose or worn steering head bearings
	Worn wheel bearings
	Front tyre out of alignment
	Broken or bent wheel spokes
	Loose nuts or bolts

	Too much trail
	Under damping
Heavy Steering	Too little handlebar Leverage
	Unsuitable front tyre
	Too much trail
Outfit pulls toward sidecar	Too little lean out
Outfit pulls away from sidecar	Too much lean out
Steering heavy away from sidecar	Too little lead
Steering heavy toward sidecar	Too much lead
Bottoming rear suspension	Too little spring overload/springs too weak

FITTING A RADIO/CASSETTE PLAYER

INTRODUCTION

Having a radio fitted to your GoldWing is now almost becoming standard practice. Its one way of whiling away the time when you've got a long motorway trip ahead of you. It also allows you to listen to local radio stations who will often warn you of traffic delays on the road ahead.

CHOOSING A RADIO

Obviously, your choice of radio/cassette player will depend to a great extent on the amount of money you wish to spend, but here are some tips help you pick the best type for use on a Wing.

The suspension on motorcycles isn't kind on cassette players, and cheap players will distort the sound when the bike hits a bump. Sharp radios tend to do this, Amstrad and PYE players do not.

Radios with auto search are good, making it easier to find a new radio station whilst on the move.

LED displays are better to read, and normally have a clock function thrown in as well.

Choose a radio that can pick up on FM, as this suffers less from interference than the other wavebands.

SITING

Positioning the unit is important. They don't like the rain and so need to be placed somewhere that is likely to offer some protection. Inside of the fairing is one place as its also as far from the engine as is possible.

FIXING IN POSITION

The method by which the unit will actually be fixed to the Wing will depend greatly on which type of radio you have bought. Fitting instructions should however, be included with the unit.

WIRING

Details on how to wire up the unit should also be included as part of the instructions included with the unit. Briefly though, they should be connected as follows:

The earth wire should be connected to the frame.

The live wire should be connected to the ignition live (black) wire via a fuse (or via the accessory box).

If the unit has a clock fitted than the third wire should be run directly to the battery (via a fuse).

SCREENING

The most difficult part of fitting and using a radio is cutting down the amount of radio interference generated by the bike itself. The FM waveband is normally fine, but other wavebands can be inaudible due to interference. Its almost impossible to cure, but it can be cut down considerably as follows:

Run an earth wire between the carburettor bank.
Fit a radio choke in the live supply wire to the radio (available at most car shops).

Site the aerial on the fairing, that way the aerial cable doesn't have to pass over the engine.

Fit spark plugs with an R at the end of their number - this means that they are radio suppressed.

Fit new spark plug caps if the built in suppressors appear faulty.

None of these tips will alleviate the problem, but they will help to cut down the interference.

FITTING A GL1100 MOTAD EXHAUST SYSTEM TO A GL1000
(CHROME OR STAINLESS STEEL)

As the system is supplied the down pipes are to long. To overcome this cut one inch off of the length of each down pipe from the end, which enters the silencers. It will then be found that one of the down pipes fouls the side stand. To overcome this, put a slight dent in this pipe. The neatest way to form this is to use a round bar against the pipe. It will then be necessary to make a simple bracket to go from the mounting on each silencer to the mountings on the frame. The system works well on the GL1000 with no re-jetting required.

FITTING A GL1100 CLUTCH OPERATING MECHANISM TO A GL1000

With a little work it is possible to fit the clutch operating mechanism from a GL1100 to a GL1000. This modification has two benefits. the first is easier clutch operation, the second is ease of clutch cable replacement.
Parts required:

- GL1100 Model A or B, clutch outer casing, complete with inspection cap (new or second-hand)
- Cable mounting bracket that is fitted to the engine on the GL1100 clutch outer casing gasket
- GL1100 clutch cable
- Piece of 6mm studding approximately 50mm long
- Gasket compound

To fit follow these instructions:

1. Drain the engine oil
2. Disconnect the existing clutch cable at each end
3. Place a drip tray under the rear of the engine and remove the outer clutch casing (Some oil will come out of this area of the engine even when the oil has been drained)
4. Clean the mating surfaces on the rear engine cover and the GL1100 outer clutch case
5. Remove the clutch adjuster cap, adjuster screw and its lock nut. Save this nut for re-use
6. Install the clutch outer case using the new gasket and gasket compound
7. File one end of the stud to form a semi-circle
8. Screw in the piece of studding, with the rounded end going towards the engine, until it stops
9. Install the lock nut
10. Back off the studding approximately two turns
11. Turn the lock nut till it stops against the casing
12. Mark the stud for length, allowing six threads to show through the lock nut
13. Remove the stud and lock nut
14. Cut the stud to length
15. Slot the outer end to allow a screwdriver to be used for adjustment
16. Install inspection cap
17. Install the cable mounting to the rear of the GL1000 engine (it is only possible to use an engine case bolt to do this but it will still work satisfactorily)
18. Install GL1100 cable
19. Adjust cable.

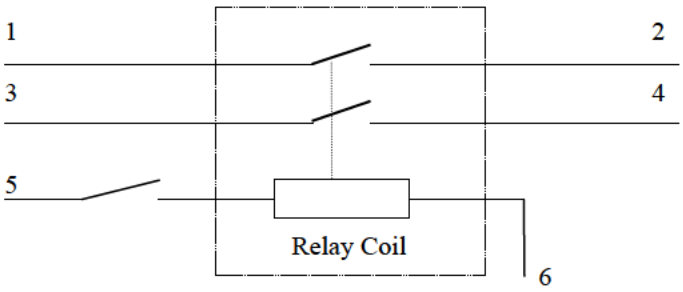
Prepared and tried by Keith Cross and Peter Cubitt

CONVERTING GL1500 CORNERING LIGHTS TO RUNNING LIGHTS

This modification can be carried out to all GL1500's that utilize the standard cornering light system. They will come on as soon as the ignition is switched on, completely independently of the normal light switch (where fitted). To carry out this modification carry out the following: -

1. Disconnect the battery.
2. Remove the belly pan and both fairing lowers.
3. Locate the relays controlling the cornering lights.
   These are located on either side of the bike attached to the frame down tube, in front of the fan housings. On some earlier models both relays are on the same side of the bike.
4. Strip back the harness to these relays to expose the wiring to them.
5. Locate the orange/white wire on one side and the light blue/white wire the other side. Cut and insulate the ends of these wires.
6. Reconnect the battery.
7. The cornering lights will now come on when the ignition is switched on.

If there is a requirement to be able to revert to the original operation, rejoin the wires that were cut.
To have the facility to revert back to the standard layout connect the wires cut across a set of contacts, either in a 2 pole switch or relay. See the diagram below for circuit.



1,2,3 & 4 + wires described in text
5 = from control switch
6 = to chassis earth

ALTERNATOR WARNING LAMP

Ever wondered why Honda doesn't fit that useful little item fitted to cars, an alternator warning light? Well here's a little tip to fit one to your GL1500. It applies to all models from 1988 through to the 2000 models.
There are two methods that can be used, although they are both based on the same Idea.

Method A

1. Remove the negative terminal from the battery
2. Remove the left-hand side panel and engine cover
3. Locate the sleeved wire that comes over the frame and to the alternator
4 Carefully strip back the sleeving with a sharp knife to reveal the black/light blue wire inside
5. Cut this wire allowing room to strip the ends of the wire and crimp on one male and one female bullet connector to the ends, ensuring that they are long enough to connect back together if necessary
6. Run two wires from this area to a convenient place to mount an after market warning lamp (available from Halfords or a similar car accessory shop). Please note that this must be a bulb type fitting. An LED may not work correctly
7. Mount the lamp fitting in a suitable (visible from the saddle) place and connect it, via two wires, to the connections made near the alternator.

Method B

1. Carry out steps 1-5 from method A
2. Remove the grill below the screen accent and the screen accent itself
3. Remove the screen
4. Remove the fairing pockets, and the piece of plastic between the stereo and fairing
5. Remove the mirrors
6. Remove the headlight adjustment knob and the upper fairing vents
7. Remove the screen adjusters
8. Remove the instrument cover
9. Disconnect the Speedo cable and unscrew the screws holding the instruments in position
10. Remove the blanking plug for the spare warning light hole
11. Install a lamp fitting in this hole (available from Honda spares stockists)
12. Connect this lamp holder via two wires to the connections made near the alternator
13 Re-assemble the bike.

NOTE: If the lamp fails to light at any time when the ignition is initially turned on, check the bulb, connections and wiring modifications immediately, as the alternator may not keep the battery charged. A method of overcoming this problem is to connect ends of the wire that was cut by the alternator together.

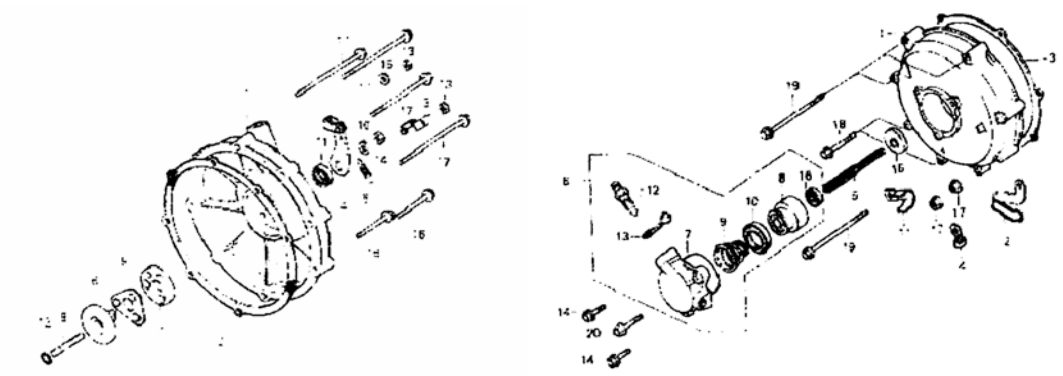
FITTING UK SPEC LIGHT SWITCH TO US SPEC GL1500 GOLDWING

Items Required	Honda Part No.	Number Required
UK spec light switch	35170 MN5 602	1
Washer screw 4x12	93893 04012 07	1
Male bullet crimpas required		
Female bullet crimp	as required	
Brown/White wire	as required	

Parts of machine to be removed:
Battery cover
Centre panel between stereo and instruments
LH handle bar cover
Handle bar clamp cover
Unfortunately this is not as straightforward as it first appears as the wiring loom of the two bikes are quite different. Only the headlight can be switched without extensive alterations to the bikes electrical system.
To switch the headlights only, the blue/white wire that supplies the main left-hand switch cluster needs to be located. This wire can be found either by stripping back the loom near to the handle bar clamps or in the 9-pin black plug/socket under the right-hand lower on top of the fan housing. The blue/white should be cut, one end of this should be connected to the blue/white in the plug to the installed light switch and the other end to the brown/blue in the plug of the switch to be installed.

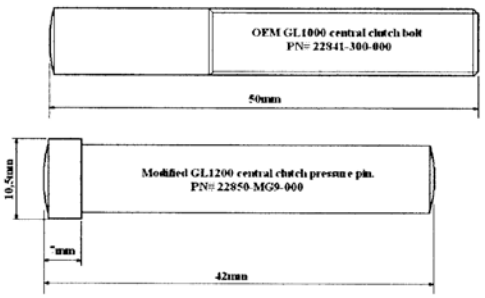
GL1000 HYDRAULIC CLUTCH CONVERSION.

After riding my 1978 GL 1 000K3 for about 14 years and having to renew my clutch cable every year and a half or two due to most cables for sale are to short I wanted to have a better option.
I thought of a hydraulic operated clutch, like a GL 1200. And so I went on search if there are parts I could modify for my 1000. Well I was lucky. The GLL200 clutch cover is almost the same casting as on a GLI000, but with another operating mechanism, instead of a lever it's by a hydraulic cylinder.
Below you see the pictures from a parts manual of those two. Left GL1000, right GL1200.



You can discard all things you see in the left picture, and for the modification you need all parts you see in the right picture. Just the whole 1200 clutch cover with pressure pin and slave cylinder. And on the handlebar you need the GL 1200 clutch master cylinder with lever and the piping from master to slave cylinder.

The only real modification is PN# 5 in the right picture (middle), you need to shorten this one and put a sleeve on it on one side to centre it in the clutch lifter guide. See next picture.



For the sleeve around the modified 1200 pin I used a piece of pipe from the hardware store which was a pressure fit around the pin with an external diameter of around 10,5mm. To get a snug fit into clutch lifter I sanded it down in an electric drill using a file and smoothed it afterwards. You can also use locktite for the tighter fit; the sleeve must not get loose while in the engine. The sleeve is just there to centre the pressure pin into the clutch lifter and pressure bearing
With this done you can put the clutch cover and slave cylinder back together, install the new pressure pin with the sleeve towards the engine.

I also used new seals for the clutch cover and overhauled the slave cylinder. At the handlebars I overhauled a GL 1200 clutch master cylinder, bought the set of piping from the slave cinder towards steering stem, and a flexible hose from the pipe towards master cylinder. I also connected the 1200 choke on the handlebar to the GL 1000 carburettor, and discarded the OEM choke cable.

Perhaps you need to adjust the measurements of the pin; these are as I got 'm, but every clutch is different because of wear. This setup is now on my bike for almost 3 years and it's working just fine.
I can write down lot more, but the main thing is that pressure pin you need to modify. And if people going to do this they know what they need and what to do....1 hope.
I hope it'll work when you're done with it.

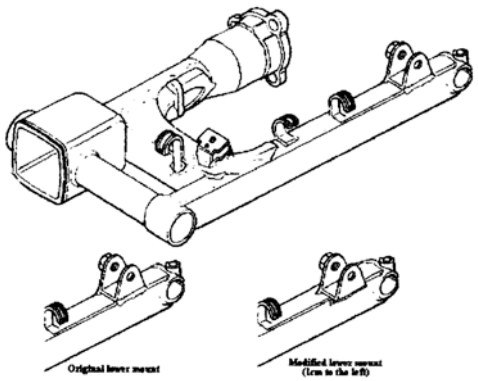
FITMENT OF A GL1100 SWINGING ARM + FINAL DRIVE IN A GLI000.

It is possible to fit a GL 1100 swinging arm into the GL 1000 frame. This way the bike gets a longer wheelbase of around 2.5". This way the stability of the bike increases, Because of the GL 1100 final drive of 3.10/1 ratio instead of the GL 1000 3.44/1 ratio the RPM at any given speed will decrease. This way your engine runs at lower speeds and the fuel consumption should decrease. But when overtaking you'll have to downshift more as before. With this conversion you also get the GL 1100 brake calliper at the rear. If you use the 1982-' 83 models you get a dual piston calliper with smaller pistons. You can also fit the unified braking system if you like. For the wheels you can use the "comstar" or the "11 spoke cast wheel". The '82-' 83 wheels are smaller in diameter as the GLL000 rear wheel, but this doesn't affect the seat height. The rotation radius is around 0.5" less as the 1000 tire I use.

The parts I used are:

GL 1000 swinging arm pivots
GL 1000 rear master brake cylinder
GL 1100 drive shaft
GLL 100 swinging arm
GLL 100 brake calliper
GLI 100 wheel & axle
.

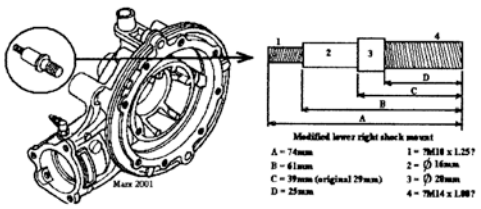
GL 1000 pivot nut (in frame)
GL 1000 drive shaft
GL1 100 drive shaft joint
GLL 100 final drive
GL1 100 shocks + air hoses & valve
Bolts, nuts to put all back together



Picture 1

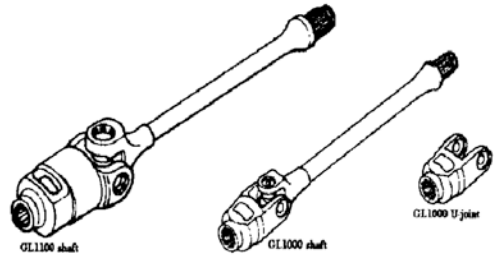
First thing you'll have to do is modify the lower fitment of the shocks on the swinging arm and final drive. The shocks are about 0.8" further from each other as on a GL 1100. These mounts must be relocated. At the left side you need to grind the "fork" from the swinging arm with an angle grinder. (careful! Not to damage to much).
You need to re-weld the "fork" 0.4 inch further to the left (away from the centre-line of the swinger). Best is to re-weld the fork using MIG. This modification is seen in picture 1.

Next thing you need to do is make a new right side lower shock mount on a lathe (or a machine shop). This one is also 0.4inch longer.
You can see the measurements in "picture 2". The size of the thread is measured at the machine shop, I don't know it. The measurements are METRIC in millimetres.



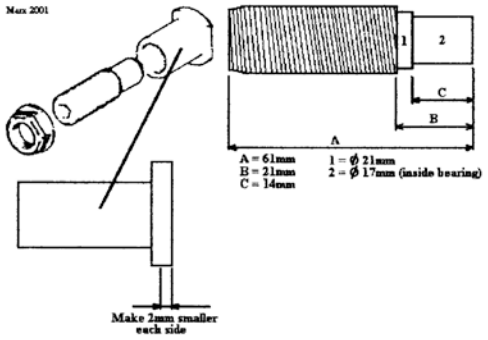
Picture 2

The biggest modification is to swap the small 1000 U-joint onto the 1100 shaft. I didn't do it myself this was done by my local engine shop. If you don't do this the shaft will be miss-aligned with the engine output shaft. This because the small U-joint of the 1100 is about 1" longer as the small 1000 U-joint. The modification is seen in "picture 3"

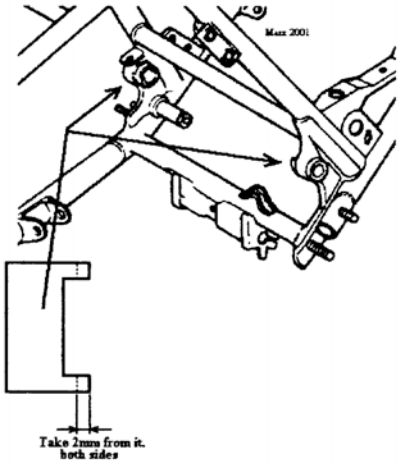


Picture 3

Next thing to modify is the GL1000 pivot bolt and nut (thing in frame). The measurement of these bolts and nuts are pictured in “picture 4”. You need to do this modification on both sides.
For the dust seal in the swinging arm you need to buy 2 new ones, 21x40x5 or 20x40x5 (original was 26x40x5)
You can also MIG weld I pivot bolt “lock nut” to the pivot bolt. The taper bearings can be adjusted from 1 side like the GL 1100 has it. Welding the nut is not a must, but you can do it after adjusting the bearings



Picture 4



Picture 5

The next thing and last big modification you need to do is to grind something from the frame. You need to grind the extensions from the frame where the pivot nut is hold into place. You need to take 2mm from each side of the frame. You can see the modification in “picture 5”When you made all these modifications you can put the swinging arm into the 1000 frame. Don’t forget to install the drive shaft first before installing the swinging arm in the frame. Of course you put new bearings in the swinging arm and the new dust seals. While you at it inspect the bearings in the 1100 wheel. I also overhauled the calliper by installing new seals in it to install stainless steel pistons. The machine shop made these for me for much less money as the OEM ones from Honda. When the swinging arm is in the frame, put in the pivot bolts and torque them with 1100 spec. One side with 1OONm, other side with 1 8Nm. Install the 1100 shocks; find some space to route the air hoses and a place to fit the air valve. Connect the 1100 calliper to the 1000 master cylinder and install the calliper, wheel and axle in the rear of the bike, fasten everything and check for loose connections/bolts/nuts.
I’ve even calculated the speed difference between the 1000 and 1100 final drive. That’s about 7Mph (1 2Kmh) faster travelling at 3000RPM as before with the 1000 final drive.

GL1500 CARBURETTOR PROBLEMS

It's been a while coming but the 1500 now ticks over like a dream. There's still some hesitancy from tickover but I think that's because I haven't completed the idle drop test.

Symptoms.

Surging on tickover

Running lean

Smelling "rich"

Poor throttle response/control at low RPM.

High fuel consumption.

History

This bike had been laid up for 5 years in Orlando, Florida. It had been started regularly but was not run on the road. Being kept in a metal garage probably didn't help.

Having repaired the auto fuel valve, it was then discovered that one of the carb diaphragms had split. Both were changed and the opportunity was taken to give the carbs a thorough clean. The float bowls were filthy with a brown substance. Because the pilot screws needed special tools to remove, replace and adjust, they were left alone. MISTAKE!

Things were also confused because the sub air filter has also disintegrated. This clogged up the tubes and the associated valves. Fortunately, once the filter was replaced and the tubes and valves cleaned, these functioned as they should.

Having done all this, the bike, although better, was far from well. The decision was taken to remove the carbs once again.

Process

The pilot screws require a special tool to remove, replace and adjust them. It is not available in the UK and costs $60 in the USA plus shipping etc. Being tight, I tried something else.

Using a modellers drill, I drilled two small holes into the head of each screw until they met to form a slot. Using compressed air (protective glasses needed), the residue was blown away. Using a suitable flat bladed screwdriver, the pilot screws could now be withdrawn. Don't forget the spring, washer and rubber "O" ring. The rubber "O" ring will probably be wedged in the hole. When they come out they will be useless but care is needed when extracting them.

One screw was fine. The other was thick with the same brown gunge found in the float bowls.

Replacement assemblies can be obtained from Dave Silvers but they appear to be a part that is in limited production and may not be available for much longer. With the exception of the "O" ring, mine could have been cleaned up and replaced but I preferred to order new.

When the new screws arrived and using the same modellers drill – this time with a cutting disk, I cut a cleaner slot for the screwdriver to fit into. Before you replace your carbs, it is worth checking that you have a long enough screwdriver to perform the idle drop test – it needs to be some 12" long. Also check that the blade is a good fit and does not overhang the screw. You will have problems if it does.

Before fitting the new screws, I gentle replaced the old screws and painted the surrounding area white. I did the same to the new screw heads. This makes them easier to see when the carbs are reinstalled (and it's still not easy!).

After that, it's a case of following the book but using the screwdriver instead of the special tool.

Good luck.

Theory.

I've little doubt that the muck built up as a result of the bike standing for so long. It may be that a "mechanic in a bottle" (redex etc) may have solved the problem in time but I don't like riding a bucking bronco on the public roads – they're dangerous enough. I've also no idea how long (if ever) a chemical treatment would take to work.

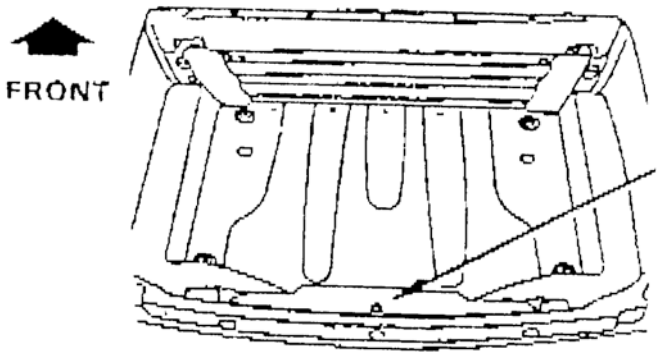
1500 TRUNK LOCK RELEASE

FROI\IT

WHOOPS! So, despite the warning you have dislocated your lock operating system.

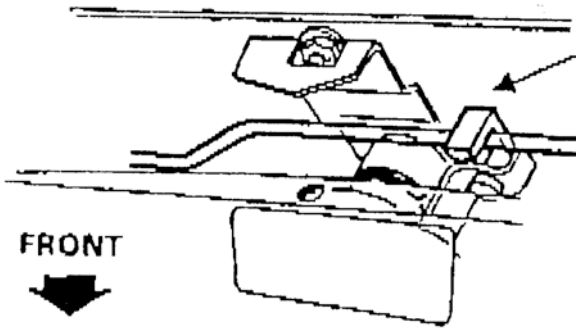
There are two ways to overcome the problem.

The trunk on the GL1500 has access panels for lights and cable adjusters. There is also a large centre cover panel in the rear of the trunk.



Cover Panel (Release bar and guide 1ocated behind this cover..)

If this cover has been removed, it is important that the metal release bar (attached to the cover panel) is positioned under the black plastic guide during installation. If it is not, the trunk release mechanism will not operate.



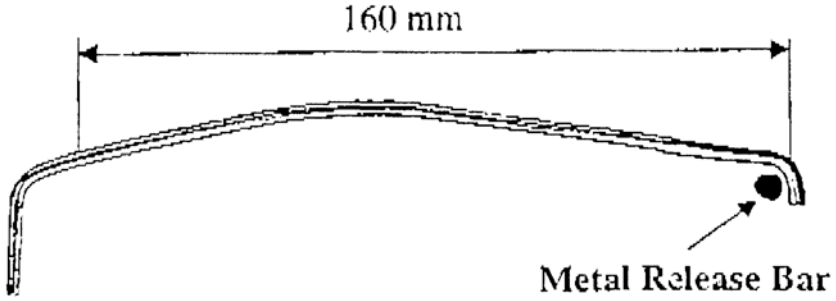
Plastic Guide (Be sure the bar is under the guide)

Metal Release Bar
(attached to the cover panel

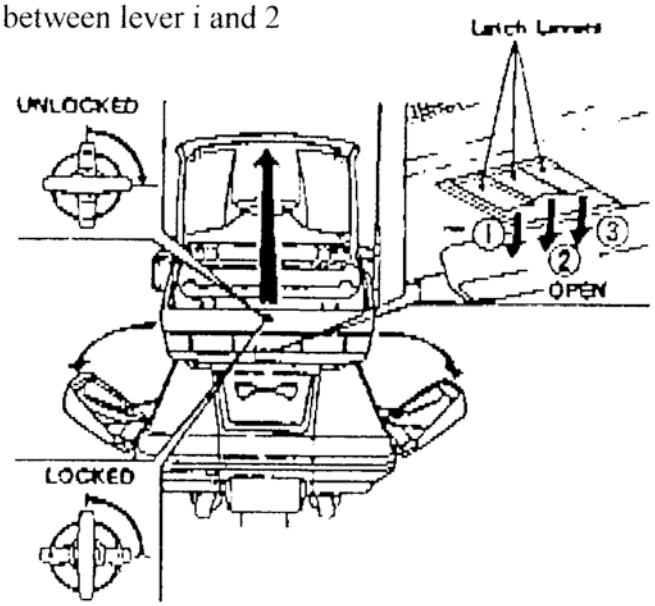
Carefully position and hold the guide in its upper position whilst sliding the bar under it - it is a hit tricky but it will slide under. Check thernovernent of the release tabs by moving the key to the left before closing the lid. Secure the cover with its screws and check the operation once more, then close the lid.

Method I (using a fine metal bar.)

Fabricate a fine bar (i.e. out of a bicycle wheel spoke) having the following dimensions:



Insert "Top A" in between lever i and 2



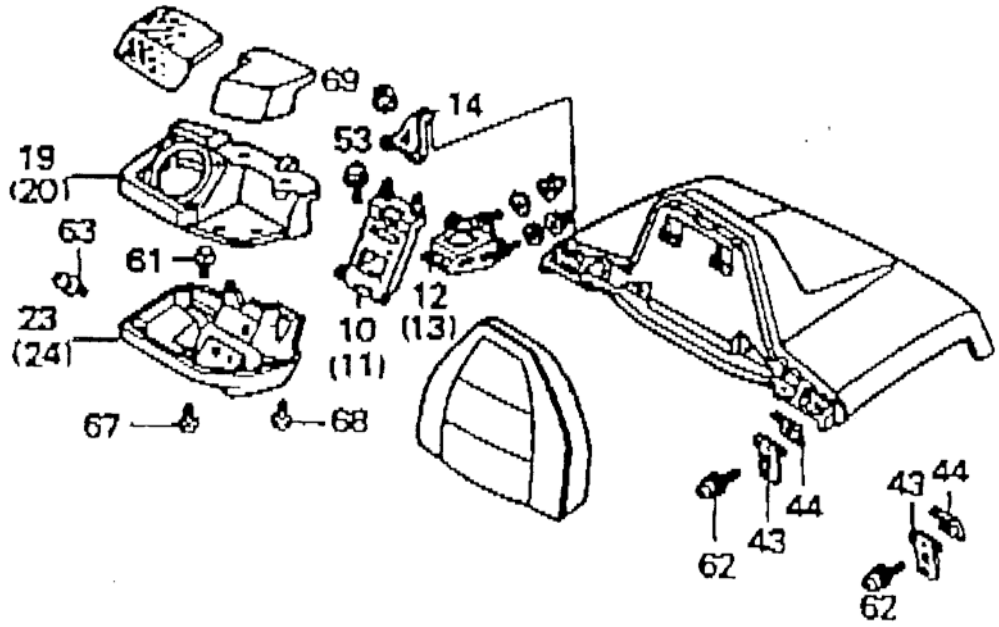
Gently direct '~Top A" in upward direction and try to position it on top of the release bar. Note: The distance between the release bar and the latch levers is approximately 160mm.

Once "Top A" is well positioned on top of the release bar, pull firmly downwards. If not successful try method 2.

Method 2 (by dismantling surrounding parts.)

To reach the mechanism act as follows:

On both sides remove No.67 the 3 tapping screws (5xl6) holding the speaker lids (19.20) Because screw No.68 (5x20) cannot be removed, the lids have to stay in place.



Thanks to the fact that the assembly is quite flexible, the hinges (1 0& 11) can still be reached.

On both sides, remove screws No.6 1 Small washer and No.63 Large washer. Remove screws of hinges 10 and 11, undo the two nuts No.69 on top of the hinges. Detach the hinges from the box and pull up the lid by gently moving the assembly in its fastenings. Using a Philips screwdriver, remove the four screws No.62 aand detach the striker No.43 from the box.

HOPE YOU WERE SUCCESSFUL