HAYNES SERVICE & REPAIR MANUAL

HONDA

XL600/650V Transalp
XRV750 Africa Twin
'87 to '02

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Honda XL600/650V Transalp & XRV750 Africa Twin

Service and Repair Manual

by Matthew Coombs

(3919 - 336)

Models covered
XL600V Transalp. 583cc. 1987 to 1999
XL650V Transalp. 647cc. 2000 to 2002
XRV750 Africa Twin. 742cc. 1990 to 2002

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The Birth of a Dream

by Julian Ryder

There is no better example of the Japanese post-war industrial miracle than Honda. Like other companies which have become household names, it started with one man's vision. In this case the man was the 40-year old Soichiro Honda who had sold his piston-ring manufacturing business to Toyota in 1945 and was happily spending the proceeds on prolonged parties for his friends. However, the difficulties of getting around in the chaos of post-war Japan irked Honda, so when he came across a job lot of generator engines he realised that here was a way of getting people mobile again at low cost.

A 12 by 18-foot shack in Hamamatsu became his first bike factory, fitting the generator motors into pushbikes. Before long he'd used up all 500 generator motors and started manufacturing his own engine, known as the 'chimney', either because of the elongated cylinder head or the smoky exhaust or perhaps both. The chimney made all of half a horsepower from its 50 cc engine but it was a major success and became the Honda A-type.

Honda C70 and C90 OHV-engined models

Less than two years after he'd set up in Hamamatsu, Soichiro Honda founded the Honda Motor Company in September 1948. By then, the A-type had been developed into the 90 cc B-type engine, which Mr Honda decided deserved its own chassis not a bicycle frame. Honda was about to become Japan's first post-war manufacturer of complete motorcycles. In August 1949 the first prototype was ready. With an output of three horsepower, the 98 cc D-type was still a simple two-stroke but it had a two-speed transmission and most importantly a pressed steel frame with telescopic forks and hard tail rear end. The frame was almost triangular in profile with the top rail going in a straight line from the massively braced steering head to the rear axle. Legend has it that after the D-type's first tests the entire workforce went for a drink to celebrate and try and think of a name for the bike. One man broke one of those silences you get when people are thinking, exclaiming 'This is like a dream!' 'That's it!' shouted Honda, and so the Honda Dream was christened.

> 'This is like a dream!' 'That's it' shouted Honda

Mr Honda was a brilliant, intuitive engineer and designer but he did not bother himself with the marketing side of his business. With hindsight, it is possible to see that employing Takeo Fujisawa who would both sort out the home market and plan the eventual expansion into overseas markets was a masterstroke. He arrived in October 1949 and in 1950 was made Sales Director. Another vital new name was Kiyoshi Kawashima, who along with Honda himself, designed the company's first four-stroke after Kawashima had told them that the four-stroke opposition to Honda's two-strokes sounded nicer and therefore sold better. The result of that statement was the overhead-valve 148 cc E-type which first ran in July 1951 just two months after the first drawings were made. Kawashima was made a director of the Honda Company at 34 years old.

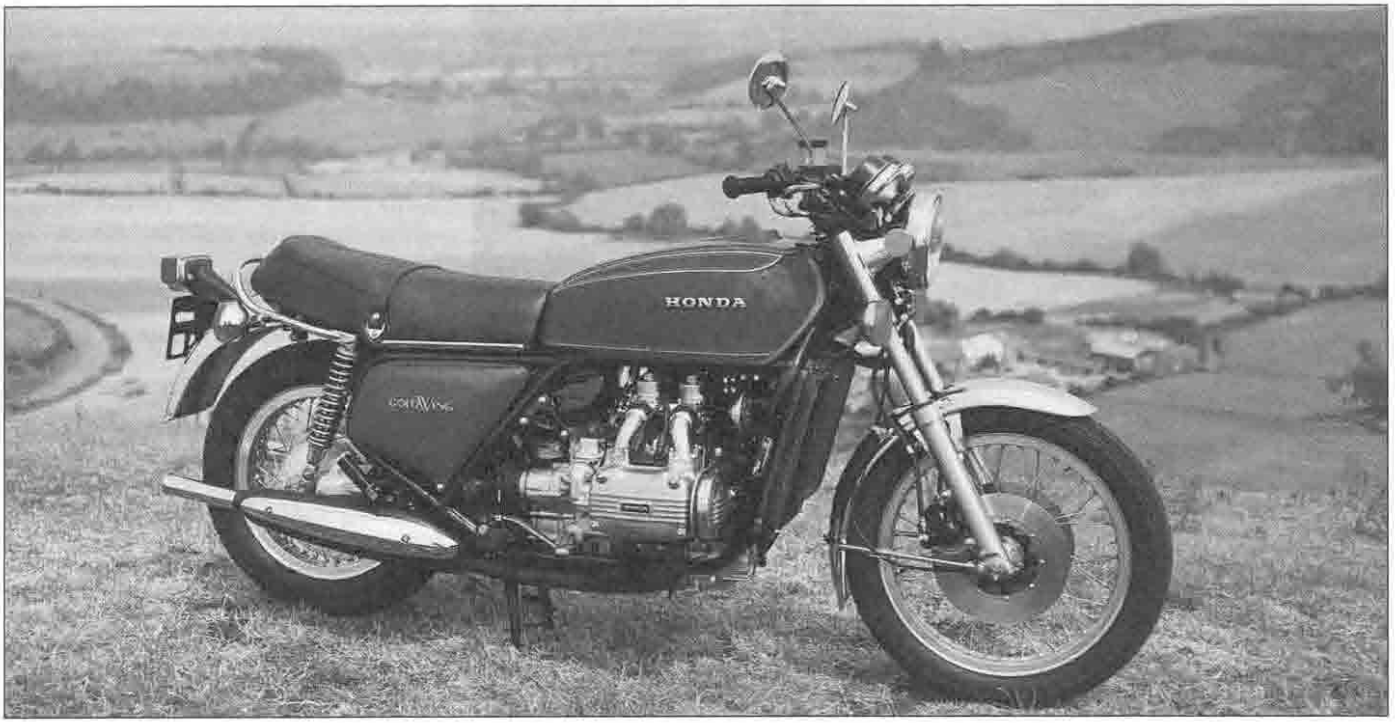
The E-type was a massive success, over 32,000 were made in 1953 alone, a feat of mass-production that was astounding by the

standards of the day given the relative complexity of the machine. But Honda's lifelong pursuit of technical innovation sometimes distracted him from commercial reality. Fujisawa pointed out that they were in danger of ignoring their core business, the motorised bicycles that still formed Japan's main means of transport. In May 1952 the F-type Cub appeared, another two-stroke despite the top men's reservations. You could buy a complete machine or just the motor to attach to your own bicycle. The result was certainly distinctive, a white fuel tank with a circular profile went just below and behind the saddle on the left of the bike, and the motor with its horizontal cylinder and bright red cover just below the rear axle on the same side of the bike. This was the machine that turned Honda into the biggest bike maker in Japan with 70% of the market for bolt-on bicycle motors, the F-type was also the first Honda to be exported. Next came the machine that would turn Honda into the biggest motorcycle manufacturer in the world.

The C100 Super Cub was a typically audacious piece of Honda engineering and marketing. For the first time, but not the last, Honda invented a completely new type of motorcycle, although the term 'scooterette' was coined to describe the new bike which had many of the characteristics of a scooter but the large wheels, and therefore stability, of a motorcycle. The first one was sold in August 1958, fifteen years later over nine-million of them were on the roads of the world. If ever a machine can be said to have brought mobility to the masses it is the Super Cub. If you add in the electric starter that was added for the C102 model of 1961, the design of the Super Cub has remained substantially unchanged ever since, testament to how right Honda got it first time. The Super Cub made Honda the world's biggest manufacturer after just two years of production.

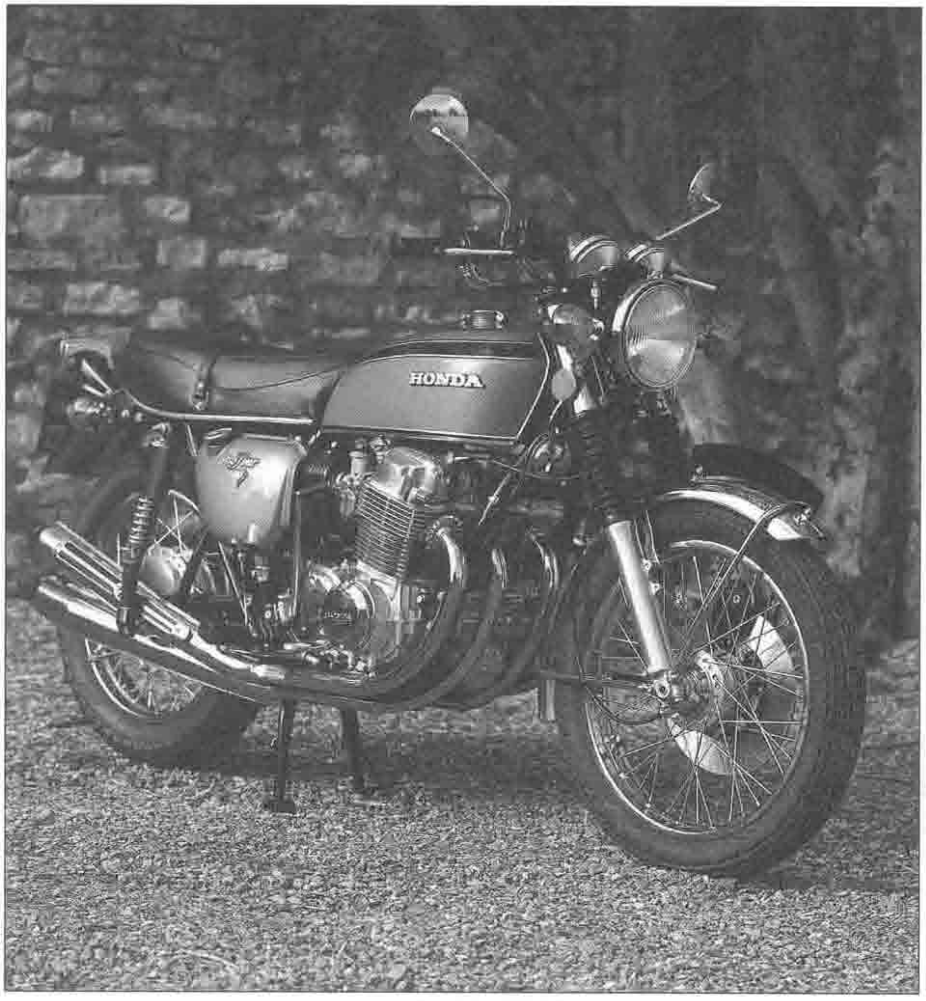
The CB250N Super Dream became a favorite with UK learner riders of the late seventies and early eighties

Honda's export drive started in earnest in 1957 when Britain and Holland got their first bikes, America got just two bikes the next year. By 1962 Honda had half the American market with 65,000 sales. But Soichiro Honda had already travelled abroad to Europe and the USA, making a special



The GL1000 introduced in 1975, was the first in Honda's line of GoldWings

Carl Fogarty in action at the Suzuka 8 Hour on the RC45



An early CB750 Four

point of going to the Isle of Man TT, then the most important race in the GP calendar. He realised that no matter how advanced his products were, only racing success would convince overseas markets for whom 'Made in Japan' still meant cheap and nasty. It took five years from Soichiro Honda's first visit to the Island before his bikes were ready for the TT. In 1959 the factory entered five riders in the 125 class. They did not have a massive impact on the event being benevolently regarded as a curiosity, but sixth, seventh and eighth were good enough for the team prize. The bikes were off the pace but they were well engineered and very reliable.

The TT was the only time the West saw the Hondas in '59, but they came back for more the following year with the first of a generation of bikes which shaped the future of motorcycling – the double-overhead-cam four-cylinder 250. It was fast and reliable – it revved to 14,000 rpm – but didn't handle anywhere near as well as the opposition. However, Honda had now signed up non-Japanese riders to lead their challenge. The first win didn't come until 1962 (Aussie Tom Phillis in the Spanish 125 GP) and was followed up with a world-shaking performance at the TT. Twenty-one year old Mike Hailwood won both 125 and 250 cc TTs and Hondas filled the top five positions in both races. Soichiro Honda's master plan was starting to come to fruition, Hailwood and Honda won the 1961 250 cc World Championship. Next year Honda won three titles. The other Japanese factories fought back and inspired Honda to produce some of the most fascinating racers ever seen: the awesome six-cylinder 250, the five-cylinder 125, and the 500 four with which the immortal Hailwood battled Agostini and the MV Agusta.

When Honda pulled out of racing in '67 they had won sixteen rider's titles, eighteen manufacturer's titles, and 137 GPs, including 18 TTs, and introduced the concept of the modern works team to motorcycle racing. Sales success followed racing victory as Soichiro Honda had predicted, but only because the products advanced as rapidly as the racing machinery. The Hondas that came to Britain in the early '60s were incredibly sophisticated. They had overhead cams where the British bikes had pushrods, they had electric starters when the Brits relied on the kickstart, they had 12V electrics when even the biggest British bike used a 6V system. There seemed no end to the technical wizardry. It wasn't that the technology itself was so amazing but just like that first E-type, it was the fact that Honda could mass-produce it more reliably than the lower-tech competition that was so astonishing.

When in 1968 the first four-cylinder CB750 road bike arrived the world of motorcycling changed for ever, they even had to invent a new word for it, 'Superbike'. Honda raced again with the CB750 at Daytona and won the

World Endurance title with a prototype DOHC version that became the CB900 roadster. There was the six-cylinder CBX, the CX500T – the world's first turbocharged production bike, they invented the full-dress tourer with the GoldWing, and came back to GPs with the revolutionary oval-pistoned NR500 four-stroke, a much-misunderstood bike that was more a rolling experimental laboratory than a racer. Just to show their versatility Honda also came up with the weird CX500 shaft-drive V-twin, a rugged workhorse that powered a new industry, the courier companies that oiled the wheels of commerce in London and other big cities.

It was true, though, that Mr Honda was not keen on two-strokes – early motocross engines had to be explained away to him as lawnmower motors! However, in 1982 Honda raced the NS500, an agile three-cylinder lightweight against the big four-cylinder opposition in 500 GPs. The bike won in its first year and in '83 took the world title for Freddie Spencer. In four-stroke racing the V4 layout took over from the straight four, dominating TT, F1 and Endurance championships with the RVF750, the nearest thing ever built to a Formula 1 car on wheels. And when Superbike arrived Honda were ready with the RC30. On the roads the VFR V4 became an instant classic while the CBR600 invented another new class of bike on its way to becoming a best-seller. The V4 road bikes had problems to start with but the VFR750 sold world-wide over its lifetime while the VFR400 became a massive commercial success and cult bike in Japan. The original RC30 won the first two World Superbike Championships is 1988 and '89, but Honda had to wait until 1997 to win it again with the RC45, the last of the V4 roadsters. In Grands Prix, the NSR500 V4 two-stroke superseded the NS triple and became the benchmark racing machine of the '90s. Mick Doohan secured his place in history by winning five World Championships in consecutive years on it.

In yet another example of Honda inventing a new class of motorcycle, they came up with the astounding CBR900RR FireBlade, a bike with the punch of a 1000 cc motor in a package the size and weight of a 750. It became a cult bike as well as a best seller, and with judicious redesigns continues to give much more recent designs a run for their money.

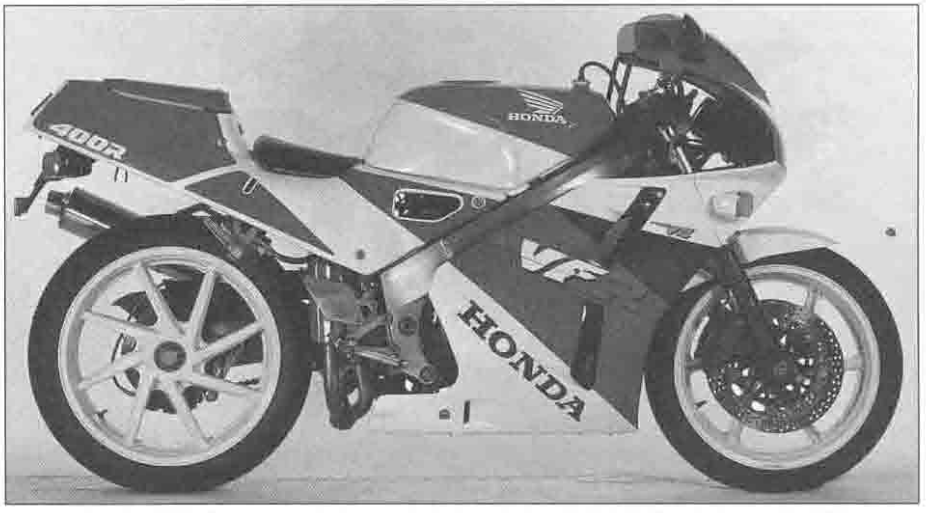
When it became apparent that the high-tech V4 motor of the RC45 was too expensive to produce, Honda looked to a V-twin engine to power its flagship for the first time. Typically, the VTR1000 FireStorm was a much more rideable machine than its opposition and once accepted by the market formed the basis of the next generation of Superbike racer, the VTR-SP-1.

One of Mr Honda's mottos was that technology would solve the customers' problems, and no company has embraced cutting-edge technology more firmly than Honda. In fact Honda often developed new technology, especially in the fields of materials science and metallurgy. The embodiment of that was the NR750, a bike that was misunderstood nearly as much as the original NR500 racer. This limited-edition technological tour-de-force embodied many of Soichiro Honda's ideals. It used the latest techniques and materials in every component, from the oval piston, 32-valve V4 motor to the titanium coating on the windscreen, it was – as Mr Honda would have wanted – the best it could possibly be. A fitting memorial to the man who has shaped the motorcycle industry and motorcyles as we know them today.

The CX500 – Honda's first V-Twin and a favorite choice of dispatch riders

Honda Transalp & Africa Twin

When Honda announce that they have invented a new type of motorcycle, the world tends to think of the initials CB, VFR and NR. Imagine, then, the confusion the world's press felt on being confronted with the Transalp and being told that it was a 'Rally Tourer'. This was 1987 and the Paris-Dakar rally had already spawned knobbly-



The VFR400R was a cult bike in Japan and a popular grey import in the UK

The 1998 XL600V-W Transalp

tyred race-replicas like the Yamaha Ténéré, the bike that sold over 10,000 units in six months on Continental Europe.

But Honda, being Honda, didn't serve up a replica of their mighty NXR750 works desert racer, in fact the only thing the NXR and the Transalp XL600V had in common was the V-twin configuration of their engines. Just like the first VFR750, the first Transalp was decidedly understated, plain even. This was, of course, an attempt to get away from the already burgeoning obsession with sportsters in several important markets by re-inventing the all-round motorcycle in a non-boring fashion.

To this end, they bored and stroked the VT500's motor and fitted it in a steel duplex-cradle frame with good quality suspension at both ends. The forks had an off-road friendly eight inches of movement and the rear shock over seven, but the rider got the sort of comprehensive instrumentation you only saw on a top-end road bike plus the sort of powerful brakes that are more of a hindrance than help on dirt surfaces. The Transalp could be taken off road but no-one in their right mind would buy one for trail riding, however the plush suspension and comfortable power delivery worked perfectly on the sort of pot-holed, gravel strewn minor roads that characterise much of the rural parts of countries like France and Italy. Not that the Transalp was a slouch on good tarmac, Honda were confident enough to launch it alongside the new CBRs at the Suzuka Circuit where it was surefooted enough round the twisty bits to hang on to the fours without any dramas.

Contemporary tests show that the bike impressed and confused in equal measure but the Transalp while not fashionable did do what it was meant to and consequently sold steadily over the years. It's a measure of just how right it was that it has changed so little through its life.

For the first ten years of its life the XL600V Transalp didn't alter noticeably apart from the rear brake graduating from a drum to a disc in 1991. In 1997 production moved from Japan to Honda's Italian plant and you can recognise that year's V-V model by the twin front Brembo calipers replacing the Japanese Nissin units. That was just the prequel to the Transalp's only major modifications. The year 2000 XL650V-Y got a 650 cc motor in a totally new-look motor-cycle. The suspension and wheels stayed the same but bodywork, instrumentation, electrical systems and lights were all changed to bring the styling up to date. European concerns were also addressed with the fitting of Honda's HISS immobiliser and PAIR emission control system.

We had to wait until 1990 to find out why Honda had so underplayed the Paris-Dakar heritage of the Transalp, for that was when the Africa Twin was unleashed. This was a real race replica with stratospheric seat height, suspension with what seemed like endless travel, a giant fuel tank, twin trip meters and an aluminium chassis. Here was something that looked and rode like the bikes that thrashed across the Sahara every January. The motor was a bored and stroked version of the Transalp's V-twin. Note that there was an earlier version of the Africa Twin, the 1989 XRV650, although this was not imported into the UK.

Everyone agreed, here was a fantastic motorcycle, the suspension and brakes came in for special praise, one that you could ride all day two-up in comfort on anything from autobahns to dirt tracks. In typical Honda fashion the build quality was superb but there was just one problem: price. In markets like the UK the Africa Twin cost more than a CBR600 and it didn't matter how good the bike was, the punters wouldn't pay that much for a twin. It's their loss, the Africa Twin is a great motorcycle and has become a cult bike in countries like France and Germany where the Paris-Dakar Rally is a highlight of the sporting calendar.

The 1998 XRV750-W Africa Twin

Acknowledgements

Our thanks are due to Bransons Motorcycles of Yeovil and GT Motorcycles of Yeovil who supplied the machines featured in the illustrations throughout this manual. We would also like to thank NGK Spark Plugs (UK) Ltd for supplying the colour spark plug condition photo-graphs, the Avon Rubber Company for supplying information on tyre fitting and Draper Tools Ltd for some of the workshop tools shown.

Thanks are also due to Julian Ryder who wrote the introduction 'The Birth of a Dream' and to Honda (UK) Ltd who supplied model photographs.

About this Manual

The aim of this manual is to help you get the best value from your motorcycle. It can do so in several ways. It can help you decide what work must be done, even if you choose to have it done by a dealer; it provides information and procedures for routine maintenance and servicing; and it offers diagnostic and repair procedures to follow when trouble occurs.

We hope you use the manual to tackle the work yourself. For many simpler jobs, doing it yourself may be quicker than arranging an appointment to get the motorcycle into a dealer and making the trips to leave it and pick it up. More importantly, a lot of money can be saved by avoiding the expense the shop must pass on to you to cover its labour and overhead costs. An added benefit is the sense of satisfaction and accomplishment that you feel after doing the job yourself.

References to the left or right side of the motorcycle assume you are sitting on the seat, facing forward.

We take great pride in the accuracy of information given in this manual, but motorcycle manufacturers make alterations and design changes during the production run of a particular motorcycle of which they do not inform us. No liability can be accepted by the authors or publishers for loss, damage or injury caused by any errors in, or omissions from, the information given.

Model development

XL600V-H and V-J Transalp (1987 and 1988 model years)

The first Transalp was the XL600V-H introduced in 1987.

The Transalp has a 52° V-twin cylinder engine with chain drive to its single overhead camshafts which operate the two inlet and one exhaust valve per cylinder. The clutch is a conventional wet multi-plate unit and the gearbox is 5-speed. Drive from the gearbox output shaft is transmitted to the rear wheel by chain and sprockets. The cylinder heads have twin spark plugs.

The engine is mounted in a box-section steel cradle frame. Suspension is provided by conventional oil-damped telescopic forks at the front, and a box-section aluminium swingarm acting on a single shock absorber via a three-way linkage at the rear. The shock absorber is adjustable for spring pre-load. Braking is by a single disc and twin-piston sliding caliper at the front and by a drum brake at the rear.

The XL600V-H was available in white and metallic blue.

The XL600V-J model for 1988 was unchanged, though was also available in beige.

XL600V-K Transalp (1989 model year)

Apart from a new instrument cluster, modifications to the rear suspension linkage, and the inclusion of a sidestand switch in the starter safety circuit, the XL600V-K was unchanged from the H and J models.

Available in red and two shades of blue.

The V-K model remained on sale in the UK through to 1990. An XL600V-L model was available in Germany for the 1990 model year, but was basically unchanged from the V-K model.

XL600V-M Transalp (1991 model year)

The external oil pipe on the engine was removed, with the oil feed to the head now being housed internally. The front brake caliper was changed, though it remains a twin-piston sliding type, made by Nissin. The hose arrangement to the caliper was also modified. At the rear the drum brake was replaced by an hydraulic system using a single-piston sliding caliper, and the wheel was therefore changed to accommodate a disc instead of a drum.

Available in blue, green and silver.

XL600V-N and P (1992 and 1993) models were basically unchanged mechanically, but were available in green, blue and maroon.

XL600V-R Transalp (1994 and 1995 model years)

A different headlight was fitted and the fairing was slightly restyled to compliment it. A span adjuster was incorporated in the front brake lever. The front brake caliper was again changed, making pad renewal easier, though it remains a twin-piston sliding type, made by Nissin.

Available in blue, grey and black.

XL600V-T Transalp (1996 model year)

The front forks were modified, with a spacer being removed and a longer spring being fitted. There were also modifications to the air duct, which now incorporates a resonator chamber and sub-air filters.

The ignition system was modified, with the twin coils per cylinder being replaced with a single coil per cylinder, each coil feeding both spark plugs.

Available in blue, grey and red.

XL600V-V Transalp (1997 model year)

The front brake system was completely changed, with a twin disc system replacing the single disc. Brembo calipers replace the Nissin, but are still of the twin-piston sliding type. Production of the Transalp now shifted from Japan to Honda's factory in Italy.

The ignition system was modified, with the twin pulse generator coils being replaced with a single coil. Passenger grab-rails were added

Available in black, red and beige.

XL600V-W and X (1998 and 1999) models were unchanged, except for colours. V-W (1998) models were available in black, red and purple, and V-X (1999) models were available in red, green and blue.

XL650V-Y, V-1 and V-2 Transalp (2000 to 2002 model years)

A complete makeover sees the new Transalp with an increased engine size, up from 600cc to 650cc, by way of an increased bore.

Whilst the braking and suspension systems remain largely unchanged from the last of the XL600V models, with the exception of a new rear shock absorber that is now adjustable for compression damping, instrumentation, fairing, bodywork, seat (now lockable), turn signals, tail light and headlight are all new. UK models come fitted as standard with Honda's 'HISS' immobiliser system. A PAIR emission control system is also fitted as standard to reduce CO emissions.

Minor modifications were made to the transmission shafts and carburettors, and many components (fusebox, thermostat housing etc) were relocated. The coolant inlet pipe arrangement to the cylinders was modified, with the separate feed to each cylinder being replaced by a single feed to the front cylinder, and a link pipe being fitted between the cylinders.

V-Y (2000) models available in green, grey and red, and V-1/V-2 (2001/2) models available in silver, grey and blue.

XRV750-L Africa Twin (1990 model year)

The first Africa Twin was the XRV750-L introduced in 1990.

The Africa Twin has the same 52° V-twin cylinder engine as the Transalp, but with increased bore and stroke dimensions. It retains chain drive to its single overhead camshafts which operate the two inlet and one exhaust valve per cylinder. The clutch is a conventional wet multi-plate unit and the gearbox is 5-speed. Drive from the gearbox output shaft is transmitted to the rear wheel by chain and sprockets. The cylinder heads have twin spark plugs.

The engine is mounted in a box-section steel cradle frame. Suspension is provided by oil-damped, dual spring and air-assisted telescopic forks at the front, and a box-section aluminium swingarm acting on a single shock absorber via a three-way linkage at the rear. The shock absorber is adjustable for spring pre-load. Braking is hydraulic all-round, with twin discs and twin-piston sliding calipers at the front and a single disc and single-piston sliding caliper at the rear.

The fuel tank incorporates a low level sensor with a corresponding warning light, and the tank has twin taps. Fuel is supplied to the carburettors via an external pump and in-line filter.

The XRV750-L was available in two variations of white/blue.

The XRV750-M model for 1991 was unchanged mechanically, though was also available in white, black and blue.

XRV750-N Africa Twin (1992 model year)

Apart from a new instrument cluster and the addition of a digital trip meter mounted above it, the XRV750-N was unchanged from the L and M models.

Available in white, black and blue.

XRV750-P Africa Twin (1993 model year)

The Africa Twin was given a makeover for 1993, with a different fuel tank incorporating a single tap in place of the twin taps previously used, and losing the low fuel level sensor and warning circuit in place of a conventional tap providing a reserve facility. The air filter housing has been transferred from below the seat to under the front of the tank, thereby doing away with the air duct between the housing and the carburettors. The carburettors were changed, now being flat-slide instead of round-slide type. The front brake calipers were improved, making pad changes easier, though remain the twin-piston sliding type.

Other modifications include a modified rear shock absorber, different rear brake master cylinder, modified rear carrier, lockable seat, different side panels, a modified rotary as opposed to plunger-type sidestand switch, different coolant reservoir, relocated fusebox, and a restyled fairing.

The XRV750-P model was available in green, black and white.

XRV750-R and S (1994 and 1995) models were unchanged mechanically, but R models were available in black, white and blue, and S models in green, black and white.

XRV750-T Africa Twin (1996 model year)

The ignition system was modified, with the twin pulse generator coils being replaced by a single coil, and the twin HT coils per cylinder being replaced by a single coil per cylinder, each coil feeding both spark plugs. Otherwise, apart from minor modifications to the rear carrier, the model was unchanged.

Available in red, black and silver.

XRV750-V, W, X, Y, 1 and 2 Africa Twin (1997 to 2002 model years)

The Africa Twin has remained unchanged since 1996, with the exception of colour schemes.

V (1997) models were available in black, blue and silver.

W (1998) models were available in green, black and white.

X (1999) models were available in black, white and blue.

Y, 1 and 2 (2000 to 2002) models were available in black and blue/red.

Bike spec

Dimensions and weights – XL600V models

Overall length	2260 to 2270 mm (89.0 to 89.4 in)
Overall width	
H to P (1987 to 1993) models	865 mm (34.0 in)
R to X (1994 to 1999) models	905 mm (35.6 in)
Overall height	
H and J (1987 and 1988) models	1280 mm (50.4 in)
K to P (1989 to 1993) models	1310 mm (51.6 in)
R to X (1994 to 1999) models	1300 mm (51.2 in)
Wheelbase	1505 mm (59.3 in)
Seat height	850 mm (33.5 in)
Ground clearance – without centrestand fitted	
H and J (1987 and 1988) models	225 mm (8.9 in)
K and L (1989 and 1990) models	200 mm (7.9 in)
M to X (1991 to 1999) models	195 mm (7.7 in)
Weight (dry)*	
H to L (1987 to 1990) models	175 kg (386 lb)
M to R (1991 to 1995) models	183 kg (404 lb)
T to X (1996 to 1999) models	189 kg (417 lb)
Curb weight*	
H to L (1987 to 1990) models	194 kg (428 lb)
M to X (1991 to 1999) models	202 kg (445 lb)

**Add approximately 2 kg for Austrian and Swiss market models*

Dimensions and weights – XL650V models

Overall length	2265 mm (89.2 in)
Overall width	865 mm (34.0 in)
Overall height	1280 mm (50.4 in)
Wheelbase	1505 mm (59.3 in)
Seat height	850 mm (33.5 in)
Ground clearance	225 mm (8.9 in)
Weight (dry)	175 kg (386 lb)
Curb weight	194 kg (428 lb)

Dimensions and weights – XRV750 models

Overall length	2315 to 2380 mm (91.1 to 93.7 in)
Overall width	
L to N (1990 to 1992) models	895 mm (35.2 in)
P models onwards (1993-on)	905 mm (35.6 in)
Overall height	
L to N (1990 to 1992) models	1420 mm (55.9 in)
P models onwards (1993-on)	1430 mm (56.3 in)
Wheelbase	1565 mm (61.6 in)
Seat height	
L to N (1990 to 1992) models	880 mm (34.6 in)
P to S (1993 to 1995) models	860 mm (33.9 in)
T models onwards (1996-on)	870 mm (34.3 in)
Ground clearance	
L to N (1990 to 1992) models	225 mm (8.9 in)
P models onwards (1993-on)	215 mm (8.5 in)
Weight (dry)	
L to N (1990 to 1992) models	210 kg (463 lb)
P models onwards (1993-on)	205 kg (452 lb)
Curb weight	
L to N (1990 to 1992) models	233 kg (514 lb)
P models onwards (1993-on)	229 kg (505 lb)

Engine

Type	Liquid-cooled six valve 52° V-twin
Capacity	
XL600V models	583 cc
XL650V models	647 cc
XRV750 models	742 cc
Bore and stroke	
XL600V models	75 x 66 mm
XL650V models	79 x 66 mm
XRV750 models	81 x 72 mm
Compression ratio	
XL600V and XL650V models	9.2 :1
XRV750 models	9.0 :1
Camshafts	SOHC, chain-driven
Carburettors	
XL600V and XL650V models	2 x 34 mm Keihin CV type
XRV750-L to S (1990 to 1995) models	2 x 36.5 mm Keihin CV type
XRV750-T models onwards (1996-on)	2 x 36.0 mm Keihin CV type
Ignition system	
XL600V-H to R (1987 to 1995) and XRV750-L to S (1990 to 1995) models	CDI with electronic advance
XL600V-T to X (1996 to 1999), XL650V and XRV750-T models onwards (1996-on)	Digital transistorised with electronic advance
Clutch	Wet multi-plate, cable-operated
Gearbox	5-speed constant mesh
Final drive	Chain and sprockets

Cycle parts

Frame type	Single downtube with double-loop cradle, rectangular section
Fuel tank capacity (including reserve)	
XL600V models	18.0 litres (3.96 Imp gal)
XL650V models	19.6 litres (4.31 Imp gal)
XRV750-L to N (1990 to 1992) models	24.0 litres (5.28 Imp gal)
XRV750-P models onward (1993-on)	23.0 litres (5.06 Imp gal)
Front suspension	
XL600V and XL650V models	41 mm oil-damped telescopic forks, with 200 mm travel
XRV750 models	43 mm oil-damped telescopic forks, with 220 mm travel, air-assisted on L to S (1990 to 1995) models
Rear suspension	
Type	Single shock absorber, rising rate linkage, Pro-Link box section aluminium swingarm
Travel – XL600V and XL650V models	187 mm
Travel – XRV750 models	210 mm
Adjustment	Spring pre-load on all models. XL650V models also have compression damping adjustment
Wheels	
Front	21 inch spoke, aluminium rim
Rear	17 inch spoke, aluminium rim
Tyres – XL600V and XL650V models	
Front	90/90-21 54S
Rear	130/80-17 65S
Tyres – XRV750-L to N (1990 to 1992) models	
Front	90/90-21 54H
Rear	130/90-17 65S
Tyres – XRV750-P models onward (1993-on)	
Front	90/90-21 54S
Rear	140/80-R17 69H
Front brake	
XL600V-H to T (1987 to 1996) models	276 mm single disc with twin piston sliding caliper
XL600V-V to X (1997 to 1999), XL650V and XRV750 models	276 mm twin discs with twin piston sliding calipers
Rear brake	
XL600V-H to L (1987 to 1990) models	130 mm single leading shoe drum
XL600V-M to X (1991 to 1999) and XL650V models	240 mm single disc with single piston sliding caliper
XRV750 models	256 mm single disc with single piston sliding caliper

Performance data

Maximum power

XL600V models .....46.5 bhp (34.7 kW) @ 7542 rpm
XL650V models .....54 bhp (40 kW) @ 7500 rpm
XRV750 models .....61 bhp (45.5 kW) @ 7500 rpm

Maximum torque

XL600V models .....36.1 lbf ft (49 Nm) @ 5798 rpm
XL650V models .....39 lbf ft (53 Nm) @ 5500 rpm
XRV750 models .....45 lbf ft (61 Nm) @ 6000 rpm

Top speed

XL600/650V models .....110 mph (177 kmh)
XRV750 models .....112 mph (180 kmh)

Acceleration

XL600V models
Time taken to cover a ¼ mile from a standing start ...13.6 seconds
Terminal speed after ¼ mile .....94.7 mph (152 kmh)
XL650V models .....not available
XRV750 models
Time taken to cover a ¼ mile from a standing start ...13.8 seconds
Terminal speed after ¼ mile .....93.6 mph (150 kmh)

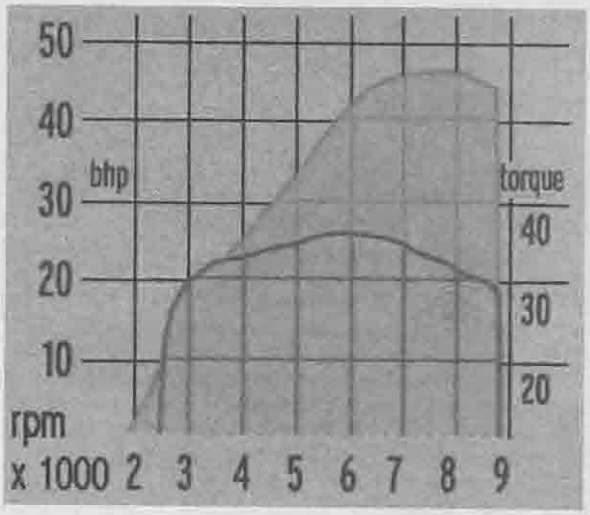
Average fuel consumption

Miles per Imp gal, miles per litre, litres per 100 km
XL600V models .....42 mpg, 9.2 mpl, 6.7 l/100 km
XL650V models .....33 mpg, 7.3 mpl, 8.5 l/100 km
XRV750 models .....36 mpg, 7.9 mpl, 7.8 l/100 km

Fuel tank range

Based on average fuel consumption rate
XL600V models .....170 miles (273 km)
XL650V models .....142 miles (228 km)
XRV750 models .....180 to 190 miles (290 to 305 km)

XL600V power and torque curves



Performance data sourced from Motor Cycle News road test features. See the MCN website for up-to-date biking news.

MCN www.motorcyclenews.com

Identification numbers

Frame and engine numbers

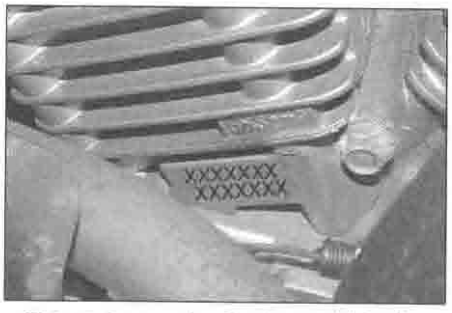
The frame serial number is stamped into the right-hand side of the steering head. The engine number is stamped into the crankcase on the right-hand side of the engine. Both of these numbers should be recorded and kept in a safe place so they can be furnished to law enforcement officials in the event of a theft. There is also a colour code label on the top of the rear subframe (visible after removing the seat). The carburettors also have an ID number stamped into them.

The frame serial number, engine serial number, colour code and carburettor ID should also be kept in a handy place (such as with your driver's licence) so they are always available when purchasing or ordering parts for your machine.

Procedures in this manual identify bikes by model code and letter (e.g. XL600V-X) and by the production year (e.g. 1999). The model code or production year is printed on the colour code label.

Model codes and production years, together with their corresponding initial frame and engine numbers, are given below in two tables.

The frame number is stamped into the right-hand side of the steering head



The engine number is stamped into the crankcase on the right-hand side of the engine

The colour code label is on the rear subframe

All UK market models and Germany Type I full power models

XL600V and XL650V Transalp

Model	Year	Initial engine no.	Initial frame no.
XL600V-H	1987	PD06E-50	PD06-50
XL600V-J	1988	PD06E-51	PD06-51
XL600V-K	1989	PD06E-22	PD06-52
XL600V-L*	1990	PD06E-23	PD06-53
XL600V-M	1991	PD06E-24	PD06-54
XL600V-N	1992	PD06E-25	PD06-55
XL600V-P	1993	PD06E-26	PD06-56
XL600V-R	1994/5	PD06E-27	PD06-57
XL600V-T	1996	PD06E-28	PD06A-T
XL600V-V	1997	HM-PD06E-29	ZDCPD10A0-V
XL600V-W	1998	HM-PD06E-40	ZDCPD10A0-W
XL600V-X	1999	HM-PD06E-41	ZDCPD10A0-X
XL650V-Y	2000	HM-RD10E-20	ZDCRD10A0-Y
XL650V-1	2001	HM-RD10E-20	ZDCRD10A0-1
XL650V-2	2002	not available	

**XL600V-L not available in the UK market*

XRV750 Africa Twin

Model	Year	Initial engine no.	Initial frame no.
XRV750-L	1990	RD04E-20	RD04-20
XRV750-M	1991	RD04E-21	RD04-21
XRV750-N	1992	RD04E-22	RD04-22
XRV750-P	1993	RD04E-23	RD07-20
XRV750-R	1994	RD04E-24	RD07-21
XRV750-S	1995	RD04E-25	RD07-22
XRV750-T	1996	RD04E-26	JH2RD07A-T
XRV750-V	1997	RD04E-27	JH2RD07A-V
XRV750-W	1998	RD04E-28	JH2RD07A-W
XRV750-X	1999	RD04E-29	JH2RD07A-X
XRV750-Y	2000	RD04E-291	JH2RD07A-Y
XRV750-1	2001	not available	JH2RD07A-1
XRV750-2	2002	not available	

Germany Type II models (restricted power output)

XL600V and XL650V Transalp

Model	Year	Initial engine no.	Initial frame no.
XL600V-H	1987	PD06E-30	PD06-30
XL600V-J	1988	PD06E-31	PD06-31
XL600V-K	1989	PD06E-32	PD06-32
XL600V-M	1991	PD06E-34	PD06-34
XL600V-N	1992	PD06E-35	PD06-35
XL600V-P	1993	PD06E-36	PD06-36
XL600V-R	1994/5	PD06E-37	PD06-37
XL600V-T	1996	PD06E-61	PD06B-T
XL600V-V	1997	HM-PD06E-62	ZDCDP10B0-V
XL600V-W	1998	HM-PD06E-63	ZDCDP10B0-W
XL600V-X	1999	HM-PD06E-64	ZDCDP10B0-X
XL650V-Y	2000	HM-RD10E-30	ZDCRD10B0-Y
XL650V-1	2001	HM-RD10E-30	ZDCRD10B0-1
XL650V-2	2002	not available	

XRV750 Africa Twin

Model	Year	Initial engine no.	Initial frame no.
XRV750-L	1990	RD04E-30	RD04-30
XRV750-M	1991	RD04E-31	RD04-31
XRV750-N	1992	RD04E-32	RD04-32
XRV750-P	1993	RD04E-33	RD07-30
XRV750-R	1994	RD04E-34	RD07-31
XRV750-S	1995	RD04E-35	RD07-32
XRV750-T	1996	RD04E-36	JH2RD07B-T
XRV750-V	1997	RD04E-37	JH2RD07B-V
XRV750-W	1998	RD04E-38	JH2RD07B-W
XRV750-X	1999	RD04E-39	JH2RD07B-X
XRV750-Y	2000	RD04E-391	JH2RD07B-Y
XRV750-1	2001	not available	JH2RD07B-1
XRV750-2	2002	not available	

Buying spare parts

Once you have found all the identification numbers, record them for reference when buying parts. Since the manufacturers change specifications, parts and vendors (companies that manufacture various components on the machine), providing the ID numbers is the only way to be reasonably sure that you are buying the correct parts.

Whenever possible, take the worn part to the dealer so direct comparison with the new component can be made. Along the trail from the manufacturer to the parts shelf, there are numerous places that the part can end up with the wrong number or be listed incorrectly.

The two places to purchase new parts for your motorcycle – the franchised or main dealer and the parts/accessories store – differ in the type of parts they carry. While dealers can obtain every single genuine part for your motorcycle, the accessory store is usually limited to normal high wear items such as chains and sprockets, brake pads, spark plugs and cables, and to tune-up parts and various engine gaskets, etc. Rarely will an accessory outlet have major suspension components, camshafts, transmission gears, or engine cases.

Used parts can be obtained from breakers yards for roughly half the price of new ones, but you can't always be sure of what you're getting. Once again, take your worn part to the breaker for direct comparison, or when ordering by mail order make sure that you can return it if you are not happy.

Whether buying new, used or rebuilt parts, the best course is to deal directly with someone who specialises in your particular make.

Professional mechanics are trained in safe working procedures. However enthusiastic you may be about getting on with the job at hand, take the time to ensure that your safety is not put at risk. A moment's lack of attention can result in an accident, as can failure to observe simple precautions.

There will always be new ways of having accidents, and the following is not a comprehensive list of all dangers; it is intended rather to make you aware of the risks and to encourage a safe approach to all work you carry out on your bike.

Asbestos

● Certain friction, insulating, sealing and other products - such as brake pads, clutch linings, gaskets, etc. - contain asbestos. Extreme care must be taken to avoid inhalation of dust from such products since it is hazardous to health. If in doubt, assume that they do contain asbestos.

Fire

● Remember at all times that petrol is highly flammable. Never smoke or have any kind of naked flame around, when working on the vehicle. But the risk does not end there - a spark caused by an electrical short-circuit, by two metal surfaces contacting each other, by careless use of tools, or even by static electricity built up in your body under certain conditions, can ignite petrol vapour, which in a confined space is highly explosive. Never use petrol as a cleaning solvent. Use an approved safety solvent.

● Always disconnect the battery earth terminal before working on any part of the fuel or electrical system, and never risk spilling fuel on to a hot engine or exhaust.

● It is recommended that a fire extinguisher of a type suitable for fuel and electrical fires is kept handy in the garage or workplace at all times. Never try to extinguish a fuel or electrical fire with water.

Fumes

● Certain fumes are highly toxic and can quickly cause unconsciousness and even death if inhaled to any extent. Petrol vapour comes into this category, as do the vapours from certain solvents such as trichloroethylene. Any draining or pouring of such volatile fluids should be done in a well ventilated area.

● When using cleaning fluids and solvents, read the instructions carefully. Never use materials from unmarked containers - they may give off poisonous vapours.

● Never run the engine of a motor vehicle in an enclosed space such as a garage. Exhaust fumes contain carbon monoxide which is extremely poisonous; if you need to run the engine, always do so in the open air or at least have the rear of the vehicle outside the workplace.

The battery

● Never cause a spark, or allow a naked light near the vehicle's battery. It will normally be giving off a certain amount of hydrogen gas, which is highly explosive.

● Always disconnect the battery ground (earth) terminal before working on the fuel or electrical systems (except where noted).

● If possible, loosen the filler plugs or cover when charging the battery from an external source. Do not charge at an excessive rate or the battery may burst.

● Take care when topping up, cleaning or carrying the battery. The acid electrolyte, evenwhen diluted, is very corrosive and should not be allowed to contact the eyes or skin. Always wear rubber gloves and goggles or a face shield. If you ever need to prepare electrolyte yourself, always add the acid slowly to the water; never add the water to the acid.

Electricity

● When using an electric power tool, inspection light etc., always ensure that the appliance is correctly connected to its plug and that, where necessary, it is properly grounded (earthed). Do not use such appliances in damp conditions and, again, beware of creating a spark or applying excessive heat in the vicinity of fuel or fuel vapour. Also ensure that the appliances meet national safety standards.

● A severe electric shock can result from touching certain parts of the electrical system, such as the spark plug wires (HT leads), when the engine is running or being cranked, particularly if components are damp or the insulation is defective. Where an electronic ignition system is used, the secondary (HT) voltage is much higher and could prove fatal.

Remember...

✗ **Don't** start the engine without first ascertaining that the transmission is in neutral.

✗ **Don't** suddenly remove the pressure cap from a hot cooling system - cover it with a cloth and release the pressure gradually first, or you may get scalded by escaping coolant.

✗ **Don't** attempt to drain oil until you are sure it has cooled sufficiently to avoid scalding you.

✗ **Don't** grasp any part of the engine or exhaust system without first ascertaining that it is cool enough not to burn you.

✗ **Don't** allow brake fluid or antifreeze to contact the machine's paintwork or plastic components.

✗ **Don't** siphon toxic liquids such as fuel, hydraulic fluid or antifreeze by mouth, or allow them to remain on your skin.

✗ **Don't** inhale dust - it may be injurious to health (see Asbestos heading).

✗ **Don't** allow any spilled oil or grease to remain on the floor - wipe it up right away, before someone slips on it.

✗ **Don't** use ill-fitting spanners or other tools which may slip and cause injury.

✗ **Don't** lift a heavy component which may be beyond your capability - get assistance.

✗ **Don't** rush to finish a job or take unverified short cuts.

✗ **Don't** allow children or animals in or around an unattended vehicle.

✗ **Don't** inflate a tyre above the recommended pressure. Apart from overstressing the carcass, in extreme cases the tyre may blow off forcibly.

✓ **Do** ensure that the machine is supported securely at all times. This is especially important when the machine is blocked up to aid wheel or fork removal.

✓ **Do** take care when attempting to loosen a stubborn nut or bolt. It is generally better to pull on a spanner, rather than push, so that if you slip, you fall away from the machine rather than onto it.

✓ **Do** wear eye protection when using power tools such as drill, sander, bench grinder etc.

✓ **Do** use a barrier cream on your hands prior to undertaking dirty jobs - it will protect your skin from infection as well as making the dirt easier to remove afterwards; but make sure your hands aren't left slippery. Note that long-term contact with used engine oil can be a health hazard.

✓ **Do** keep loose clothing (cuffs, ties etc. and long hair) well out of the way of moving mechanical parts.

✓ **Do** remove rings, wristwatch etc., before working on the vehicle - especially the electrical system.

✓ **Do** keep your work area tidy - it is only too easy to fall over articles left lying around.

✓ **Do** exercise caution when compressing springs for removal or installation. Ensure that the tension is applied and released in a controlled manner, using suitable tools which preclude the possibility of the spring escaping violently.

✓ **Do** ensure that any lifting tackle used has a safe working load rating adequate for the job.

✓ **Do** get someone to check periodically that all is well, when working alone on the vehicle.

✓ **Do** carry out work in a logical sequence and check that everything is correctly assembled and tightened afterwards.

✓ **Do** remember that your vehicle's safety affects that of yourself and others. If in doubt on any point, get professional advice.

● If in spite of following these precautions, you are unfortunate enough to injure yourself, seek medical attention as soon as possible.

Note: *The daily (pre-ride) checks outlined in the owner's manual covers those items which should be inspected on a daily basis.*

Engine/transmission oil level check

Before you start:

✔ Take the motorcycle on a short run to allow it to reach normal operating temperature.

Caution: Do not run the engine in an enclosed space such as a garage or workshop.

✔ Stop the engine and support the motorcycle upright; use the centrestand if it has one. Allow it to stand undisturbed for a few minutes to allow the oil level to stabilise. Make sure the motorcycle is on level ground.

The correct oil

● Modern, high-revving engines place great demands on their oil. It is very important that the correct oil for your bike is used.

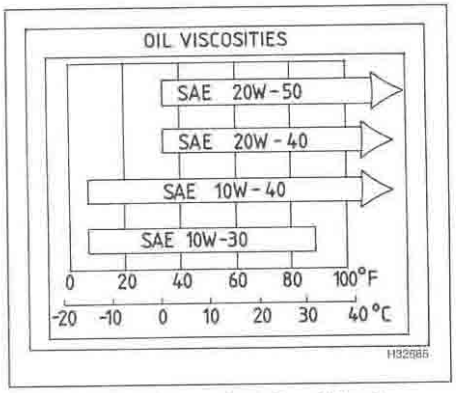
● Always top up with a good quality oil of the specified type and viscosity and do not overfill the engine.

Oil type	API grade SE, SF or SG
Oil viscosity*	SAE 10W40*

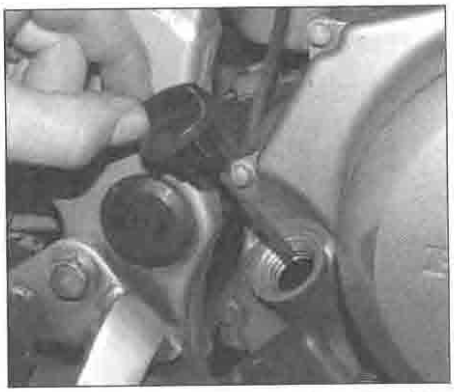
**If you are using the motorcycle constantly in extreme conditions of heat or cold, other more suitable viscosity ranges may be used – refer to the viscosity table to select the oil best suited to your conditions.*

Bike care:

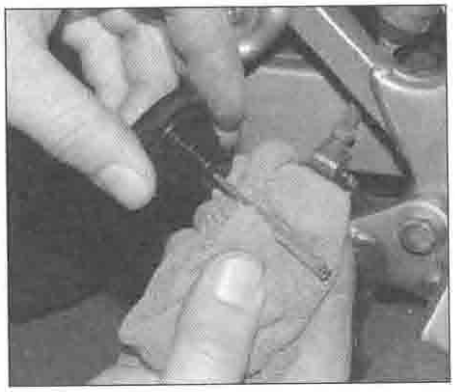
● If you have to add oil frequently, check whether you have any oil leaks from the engine joints, seals and gaskets. If not, the engine could be burning oil, in which case there will be white smoke coming out of the exhaust – (see *Fault Finding*).



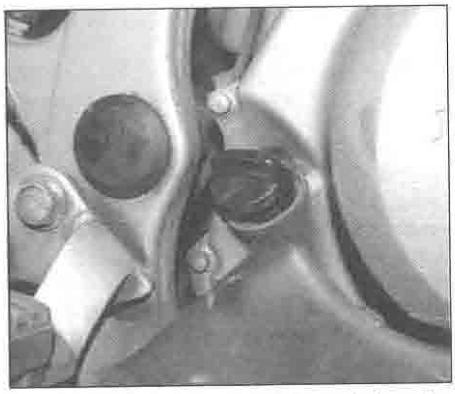
Oil viscosity table: select the oil best suited to your conditions



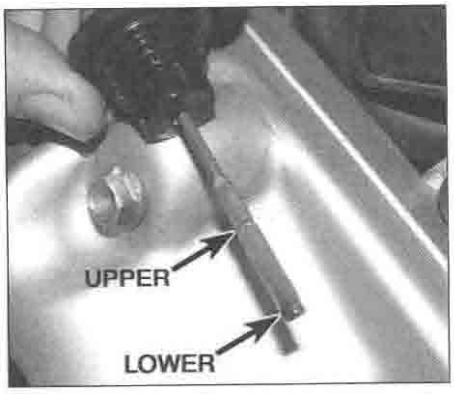
1 Unscrew the oil filler cap from the right-hand side crankcase cover. The dipstick is integral with the oil filler cap, and is used to check the engine oil level.



2 Using a clean rag or paper towel, wipe off all the oil from the dipstick.



3 Insert the clean dipstick back into the engine, allowing it to rest on the bottom thread of the cap – do not screw it in.



4 Remove the dipstick and observe the level of the oil, which should be somewhere in between the upper and lower level marks (arrowed).

5 If the level is below the lower mark, top the engine up with the recommended grade and type of oil, to bring the level up to the upper mark on the dipstick.

Coolant level check

Warning: DO NOT remove the radiator pressure cap to add coolant. Topping up is done via the coolant reservoir tank filler. DO NOT leave open containers of coolant about, as it is poisonous.

Before you start:

✔ Make sure you have a supply of coolant available (a mixture of 50% distilled water and 50% corrosion inhibited ethylene glycol anti-freeze is needed).

✔ Always check the coolant level when the engine is at normal working temperature. Take the motorcycle on a short run to allow it to reach normal temperature.

Caution: Do not run the engine in an enclosed space such as a garage or workshop.

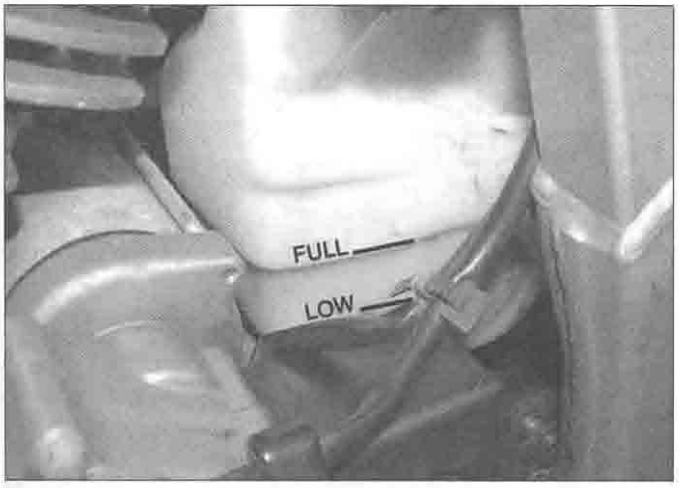
✔ Stop the engine and support the motorcycle upright; use the centrestand if it has one. Make sure the motorcycle is on level ground.

Bike care:

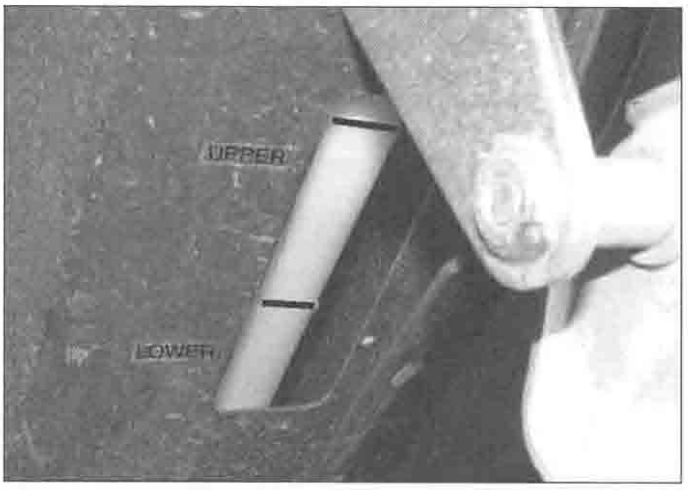
● Use only the specified coolant mixture. It is important that anti-freeze is used in the system all year round, and not just in the winter. Do not top the system up using only water, as the system will become too diluted.

● Do not overfill the reservoir tank. If the coolant is significantly above the UPPER level line at any time, the surplus should be siphoned or drained off to prevent the possibility of it being expelled out of the overflow hose.

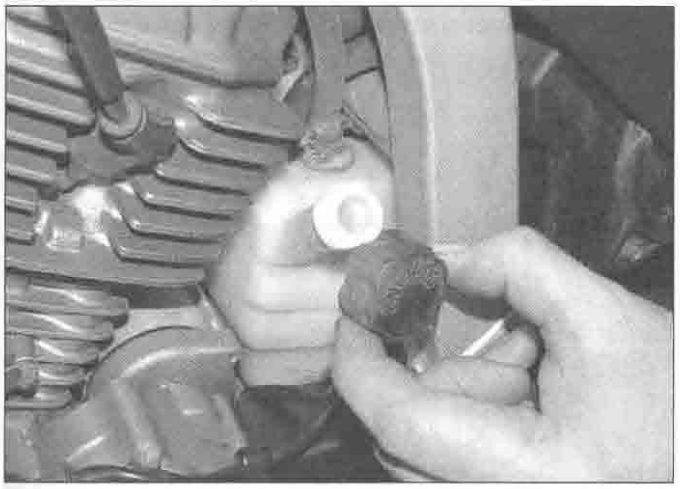
● If the coolant level falls steadily, check the system for leaks (see Chapter 1). If no leaks are found and the level continues to fall, it is recommended that the machine is taken to a Honda dealer for a pressure test.



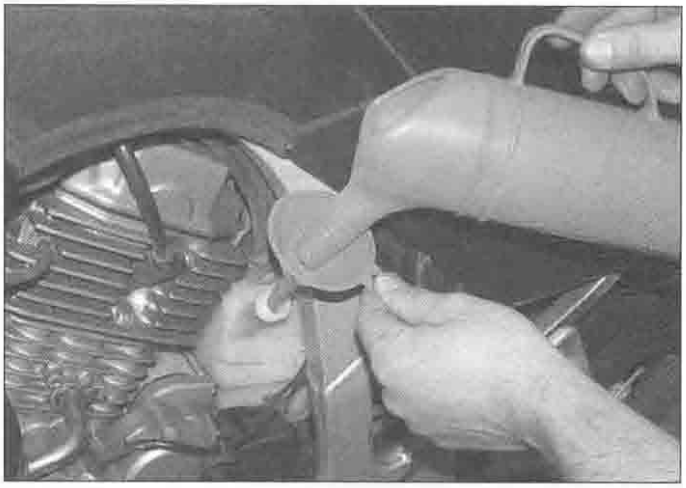
1 On XL600V and XL650V models the coolant reservoir is located on the left-hand side of the engine, between the rear cylinder and the frame. The coolant FULL and LOW level lines are on the front of the reservoir.



2 On XRV750 models the coolant reservoir is located behind the right-hand side panel. The coolant UPPER and LOWER level lines are visible by looking up at the back of it.



3 If the coolant level is not in between the level lines, remove the reservoir filler cap – where fitted on XL models, release the cap clamp by undoing the screw. On XRV models, remove the right-hand side panel to access the cap (see Chapter 8).



4 Top the coolant level up with the recommended coolant mixture, then fit the cap securely. Where fitted on XL models, secure the cap with its clamp. On XRV models, install the right-hand side panel (see Chapter 8).

Disc brake fluid level checks

All models are fitted with a front disc brake. Later XL600V models and all XL650V and XRV750 models are fitted with a rear disc brake.

> ***Warning: Brake hydraulic fluid can harm your eyes and damage painted surfaces, so use extreme caution when handling and pouring it and cover surrounding surfaces with rag. Do not use fluid that has been standing open for some time, as it is hygroscopic (absorbs moisture from the air) which can cause a dangerous loss of braking effectiveness.***

Before you start:

✔ The front master cylinder reservoir is integral with the master cylinder on the right-hand handlebar. The rear master cylinder reservoir is located under the side panel on the right-hand side.

✔ Make sure you have the correct hydraulic fluid. DOT 4 is recommended.

✔ Wrap a rag around the reservoir being worked on to ensure that any spillage does not come into contact with painted surfaces.

✔ Support the motorcycle upright on its centre-stand if fitted, or on an auxiliary stand, so that the reservoir being worked on is level – you may have to turn the handlebars to achieve this when working on the front reservoir.

Bike care:

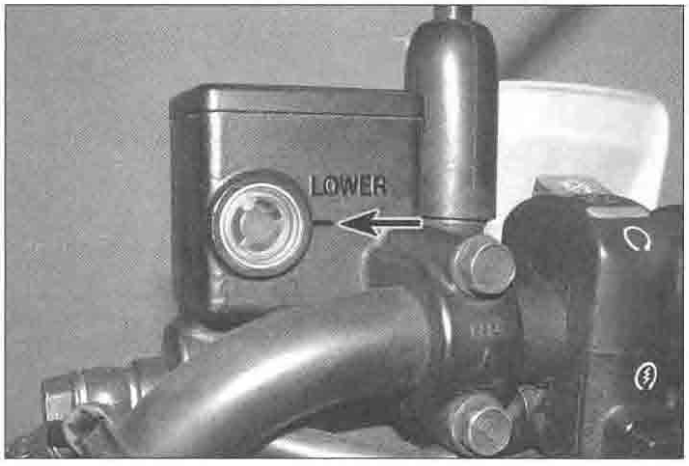
● The fluid in the front and rear brake master cylinder reservoirs will drop slightly as the brake pads wear down (refer to Chapter 1, Section 3 to check the amount of wear in the pads if required).

● If either fluid reservoir requires repeated topping-up there could be an hydraulic leak somewhere in the system, which must be investigated immediately.

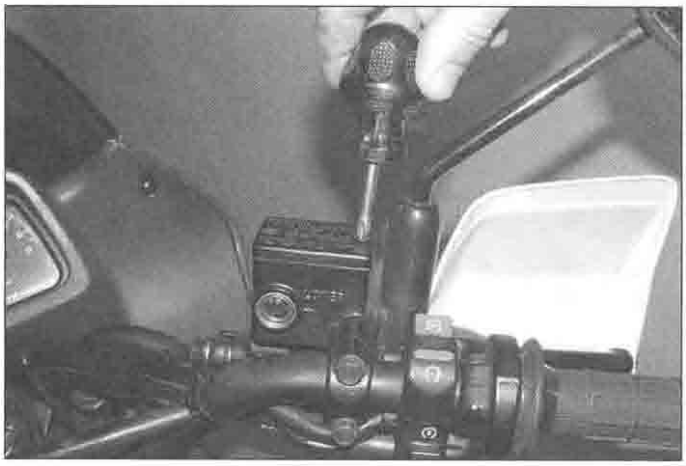
● Check for signs of fluid leakage from the hydraulic hoses and components – if found, rectify immediately (see Chapter 7).

● Check the operation of both brakes before taking the machine on the road; if there is evidence of air in the system (spongy feel to lever or pedal), it must be bled (see Chapter 7).

FRONT BRAKE FLUID LEVEL



1 The front brake fluid level, visible through the window in the reservoir body, must be above the LOWER level line (arrowed).

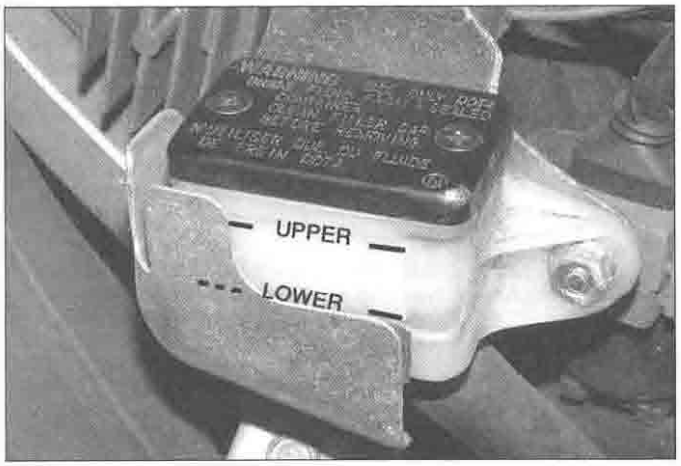


2 If the level is below the LOWER line, undo the two reservoir cover screws and remove the cover, diaphragm plate and diaphragm.

3 Top up with fluid of the recommended type until the level is up to the ridge along the inside of the front wall of the reservoir (arrowed). Do not overfill.

4 Ensure that the diaphragm is correctly seated before installing the plate and cover.

REAR BRAKE FLUID LEVEL



5 To view the rear brake fluid level, remove the right-hand side panel (see Chapter 8). The rear brake fluid level, visible through the reservoir body, must be above the LOWER level line.

6 If the level is below the LOWER level line, undo the two reservoir cover screws or unscrew the reservoir cap (according to model), and remove the diaphragm plate and diaphragm.

7 Top up with fluid of the recommended type until the level is up to the UPPER level line. Do not overfill.

8 Ensure that the diaphragm is correctly seated before installing the plate and cover or cap.

Drum brake checks

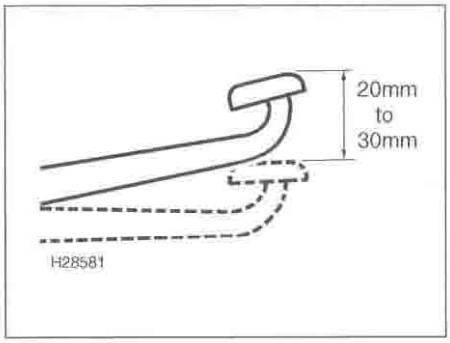
A rear drum brake is fitted to XL600V-H to L (1987 to 1990) models

Bike care:

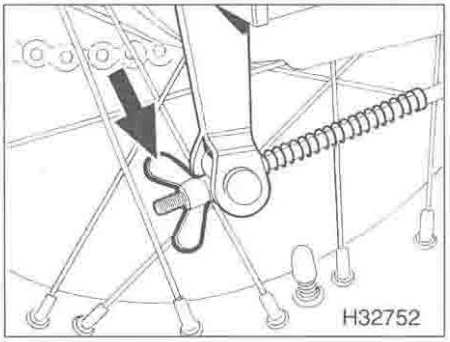
✔ The amount of travel in the rear brake pedal before the brake takes effect will increase as the shoes wear down (refer to Chapter 1, Section 3 to check the amount of wear in the shoes if required).

✔ Check that the brake works effectively without binding when the pedal is released.

✔ Ensure that the rod linkage is properly lubricated (see Chapter 1).



1 Measure the amount of free travel at the tip of the brake pedal from its rest position before the brake takes effect. There should be no more than 30 mm travel.



2 If the amount of travel exceeds 30 mm, turn the adjusting wingnut on the end of the brake rod in until the amount of travel is between 20 and 30 mm.

Tyre checks

The correct pressures:

● The tyres must be checked when **cold**, not immediately after riding. Note that low tyre pressures may cause the tyre to slip on the rim or come off. High tyre pressures will cause abnormal tread wear and unsafe handling.

● Use an accurate pressure gauge. Many forecourt gauges are wildly inaccurate. If you buy your own, spend as much as you can justify on a quality gauge.

● Proper air pressure will increase tyre life and provide maximum stability and ride comfort.

Tyre care:

● Check the tyres carefully for cuts, tears, embedded nails or other sharp objects and excessive wear. Operation of the motorcycle with excessively worn tyres is extremely hazardous, as traction and handling are directly affected.

● Check the condition of the tyre valve and ensure the dust cap is in place.

● Pick out any stones or nails which may have become embedded in the tyre tread. If left, they will eventually penetrate through the casing and cause a puncture.

● If tyre damage is apparent, or unexplained loss of pressure is experienced, seek the advice of a tyre fitting specialist without delay.

Tyre tread depth:

● At the time of writing UK law requires that tread depth must be at least 1 mm over 3/4 of the tread breadth all the way around the tyre, with no bald patches. Many riders, however, consider 2 mm tread depth minimum to be a safer limit. Honda recommend a minimum of 1.5 mm on the front and 2 mm on the rear.

● Many tyres now incorporate wear indicators in the tread. Identify the location marking on the tyre sidewall to locate the indicator bar and replace the tyre if the tread has worn down to the bar.

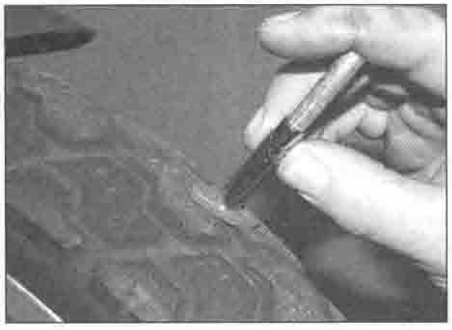
All XL600V and XL650V models, XRV750-L to N (1990 to 1992) models

Loading	Front	Rear
Rider only	29 psi (2.00 Bar)	29 psi (2.00 Bar)
Rider and passenger	29 psi (2.00 Bar)	33 psi (2.25 Bar)

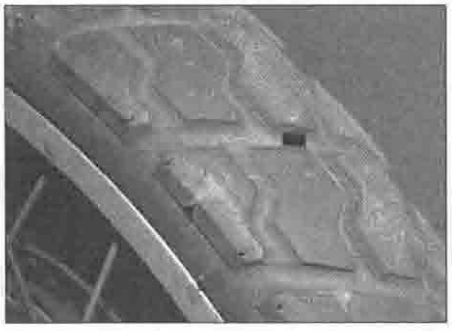
XRV750-P models onward (1993-on)

Loading	Front	Rear
Rider only	29 psi (2.00 Bar)	29 psi (2.00 Bar)
Rider and passenger	29 psi (2.00 Bar)	36 psi (2.50 Bar)

1 Remove the dust cap from the valve and check the tyre pressures when **cold**. Do not forget to fit the cap after checking the pressure.



2 Measure tread depth at the centre of the tyre using a depth gauge.



3 Tyre tread wear indicator bar and its location marking (usually either an arrow, a triangle or the letters TWI) on the sidewall.

Suspension, steering and drive chain checks

Suspension and Steering:

● Check that the front and rear suspension operates smoothly without binding (see Chapter 1).

● Check that the suspension is adjusted as required, where applicable (see Chapter 6).

● Check that the steering moves smoothly from lock-to-lock.

Drive chain:

● Check that the chain isn't too loose or too tight, and adjust it if necessary (see Chapter 1).

● If the chain looks dry, lubricate it (see Chapter 1).

Legal and safety checks

Lighting and signalling:

● Take a minute to check that the headlight, tail light, brake light, licence plate light (where fitted), instrument lights and turn signals all work correctly.

● Check that the horn sounds when the button is pressed.

● A working speedometer, graduated in mph, is a statutory requirement in the UK.

Safety:

● Check that the throttle grip rotates smoothly when opened and snaps shut when released, in all steering positions. Also check for the correct amount of freeplay (see Chapter 1).

● Check that the engine shuts off when the kill switch is operated.

● Check that sidestand and centrestand (if fitted) return springs hold the stand(s) up securely when retracted.

Fuel:

● This may seem obvious, but check that you have enough fuel to complete your journey. If you notice signs of fuel leakage – rectify the cause immediately.

● Ensure you use the correct grade fuel – see Chapter 4 Specifications.

Chapter 1
Routine maintenance and servicing

Contents

Degrees of difficulty

Easy, suitable for novice with little experience 

Fairly easy, suitable for beginner with some experience 

Fairly difficult, suitable for competent DIY mechanic 

Difficult, suitable for experienced DIY mechanic 

Very difficult, suitable for expert DIY or professional 

Specifications

Engine

Engine idle speed	
XL600V models	1300 ± 100 rpm
XL650V and XRV750 models	1200 ± 100 rpm
Spark plugs	
Type	
Standard	NGK DPR8EA-9, or Denso X24EPR-U9
Cold climate (below 5°C/41°F)	NGK DPR7EA-9, or Denso X22EPR-U9
Extended high speed riding	NGK DPR9EA-9, or Denso X27EPR-U9
Electrode gap	0.8 to 0.9 mm
Valve clearances (COLD engine)	
XL600V-H models	
Intake and exhaust valves	0.1 mm
All other models	
Intake valves	0.13 to 0.17 mm
Exhaust valves	0.18 to 0.22 mm
Carburettor synchronisation – max. difference between readings	
XL600V models	40 mm Hg
XL650V models	20 mm Hg
XRV750-L to N (1990 to 1992) models	30 mm Hg
XRV750-P models onwards (1993-on)	20 mm Hg
Cylinder compression	
XL600V-H to P (1987 to 1993) models	157 to 185 psi (11.0 to 13.0 Bar)
XL600V-R to X (1994 to 1999) models	164 to 192 psi (11.5 to 12.5 Bar)
XL650V models	164 to 224 psi (11.5 to 15.5 Bar) @ 400 rpm
XRV750 models	157 to 213 psi (11.0 to 15.0 Bar) @ 400 rpm
Oil pressure (at oil pressure switch, with engine warm)	
XL models	64 psi (4.5 Bar) @ 6000 rpm, oil @ 80°C
XRV models	71 to 85 psi (5.0 to 6.0 Bar) @ 5000 rpm, oil @ 80°C

Cycle parts

Drive chain slack	35 to 45 mm
Throttle twistgrip freeplay	2 to 6 mm
Clutch lever freeplay	10 to 20 mm
Tyre pressures (cold)	see *Daily (pre-ride) checks*

Recommended lubricants and fluids

Engine/transmission oil type	API grade SE, SF or SG motor oil
Engine/transmission oil viscosity	SAE 10W40 (see also *Daily (pre-ride) checks)*
Engine/transmission oil capacity	
XL600V models	
Oil change	2.2 litres
Oil and filter change	2.4 litres
Following engine overhaul – dry engine, new filter	2.8 litres
XL650V models	
Oil change	2.4 litres
Oil and filter change	2.6 litres
Following engine overhaul – dry engine, new filter	3.0 litres
XRV750 models	
Oil change	2.4 litres
Oil and filter change	2.6 litres
Following engine overhaul – dry engine, new filter	3.2 litres
Coolant type	50% distilled water, 50% corrosion inhibited ethylene glycol anti-freeze
Coolant capacity	Approx. 2.0 litres
Brake fluid	DOT 4
Drive chain	SAE 80 or 90 gear oil or chain lubricant suitable for O-ring chains
Steering head bearings	multi-purpose grease
Swingarm pivot bearings	multi-purpose grease
Suspension linkage bearings	multi-purpose grease
Bearing seal lips	multi-purpose grease
Gearchange lever/rear brake pedal/footrest pivots	multi-purpose grease
Clutch lever pivot	multi-purpose grease
Sidestand and centrestand pivots	multi-purpose grease
Throttle grip	multi-purpose grease or dry film lubricant
Front brake lever pivot and piston tip	silicone grease
Cables	cable lubricant

Torque settings

Engine/transmission oil drain plug	
XL600V and XRV750 models	34 Nm
XL650V models	30 Nm
Engine/transmission oil filter	10 Nm
Fuel tap bowl (XL600V models)	4 Nm
Rear axle nut	
XL600V and XRV750 models	95 Nm
XL650V models	100 Nm
Rocker arm adjusting screw locknut	23 Nm
Spark plugs	14 Nm
Steering head bearing adjuster nut	
XL600V-H and J (1987 and 1988) models	4 to 6 Nm
XL600V-K to P (1989 to 1993) models	2.5 to 3.5 Nm
XL600V-R to X (1994 to 1999) models	5 Nm
XL650V models	5 Nm
XRV750 models	11 Nm
Steering stem nut	
XL600V-H to P (1987 to 1993) models	100 Nm
XL600V-R to X (1994 to 1999) models	105 Nm
XL650V models	105 Nm
XRV750-L to N (1990 to 1992) models	100 Nm
XRV750-P models onwards (1993-on)	128 Nm
Top yoke fork clamp bolts	27 Nm

Note: *The daily (pre-ride) checks outlined in the owner's manual covers those items which should be inspected on a daily basis. Always perform the pre-ride inspection at every maintenance interval (in addition to the procedures listed). The intervals listed below are the intervals recommended by the manufacturer for each particular operation during the model years covered in this manual. Your owner's manual may have different intervals for your model.*

Daily (pre-ride)

See *'Daily (pre-ride) checks'* at the beginning of this manual.

After the initial 600 miles (1000 km)

Note: *This check is usually performed by a Honda dealer after the first 600 miles (1000 km) from new. Thereafter, maintenance is carried out according to the following intervals of the schedule.*

Every 600 miles (1000 km)

- ☐ Check, adjust and lubricate the drive chain (Section 1)

Every 4000 miles (6000 km) or 6 months (whichever comes sooner)

- ☐ Check and adjust the idle speed (Section 2)
- ☐ Check the brake shoes/pads (Section 3)
- ☐ Check the clutch (Section 4)
- ☐ Check the spark plugs (Section 5)
- ☐ Check the battery (Section 6)
- ☐ Check the condition of the wheels and tyres (Section 7)
- ☐ Check the air filter element (Section 8)
- ☐ Check the crankcase breather (Section 9)
- ☐ Check the fuel strainer (XL600V only) (Section 10)

Every 8000 miles (12,000 km) or 12 months (whichever comes sooner)

Carry out all the items under the 4000 mile (6000 km) check, plus the following

- ☐ Renew the spark plugs (Section 11)
- ☐ Lubricate the clutch/gearchange/brake lever/brake pedal/sidestand pivot, and the throttle, choke and clutch cables (Section 12)
- ☐ Renew the engine oil and filter (Section 13)
- ☐ Check the fuel system and hoses (Section 14)
- ☐ Check and adjust the throttle and choke cables (Section 15)
- ☐ Check and adjust the valve clearances (Section 16)
- ☐ Check and adjust the carburettor synchronisation (Section 17)
- ☐ Check the cooling system (Section 18)
- ☐ Check the brake system and brake light switch operation (Section 19)
- ☐ Check and adjust the headlight aim (Section 20)

Every 8000 miles (12,000 km) or 12 months (whichever comes sooner) (continued)

- ☐ Check the sidestand (Section 21)
- ☐ Check the suspension (Section 22)
- ☐ Check and adjust the steering head bearings (Section 23)
- ☐ Check the tightness of all nuts, bolts and fasteners (Section 24)
- ☐ Check the pulse secondary air injection (PAIR) system (XL650V only) (Section 25)

Every 12,000 miles (18,000 km) or 18 months (whichever comes first)

Carry out all the items under the 4000 mile (6000 km) check, plus the following

- ☐ Renew the air filter element (Section 26)

Every 12,000 miles (18,000 km) or two years (whichever comes first)

Carry out all the items under the 4000 mile (6000 km) check, plus the following

- ☐ Change the brake fluid (Section 27)

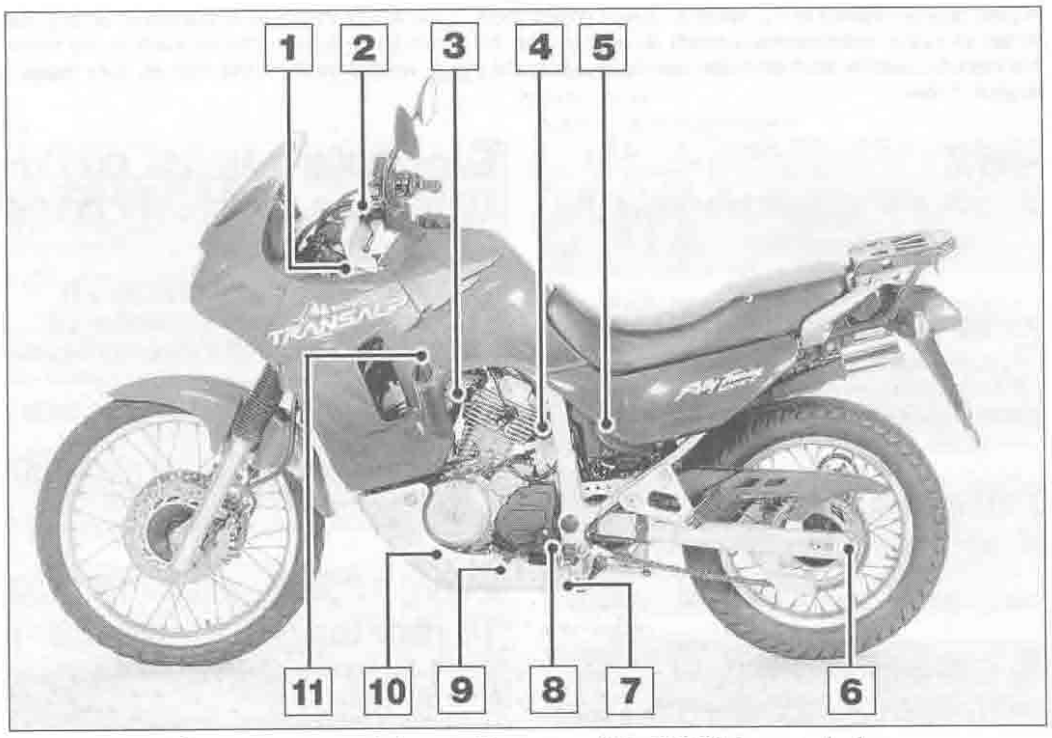
Every 24,000 miles (36,000 km) or two years (whichever comes sooner)

Carry out all the items under the 12,000 mile (18,000 km) and 8000 mile (12,000 km) checks, plus the following

- ☐ Change the coolant (Section 28)

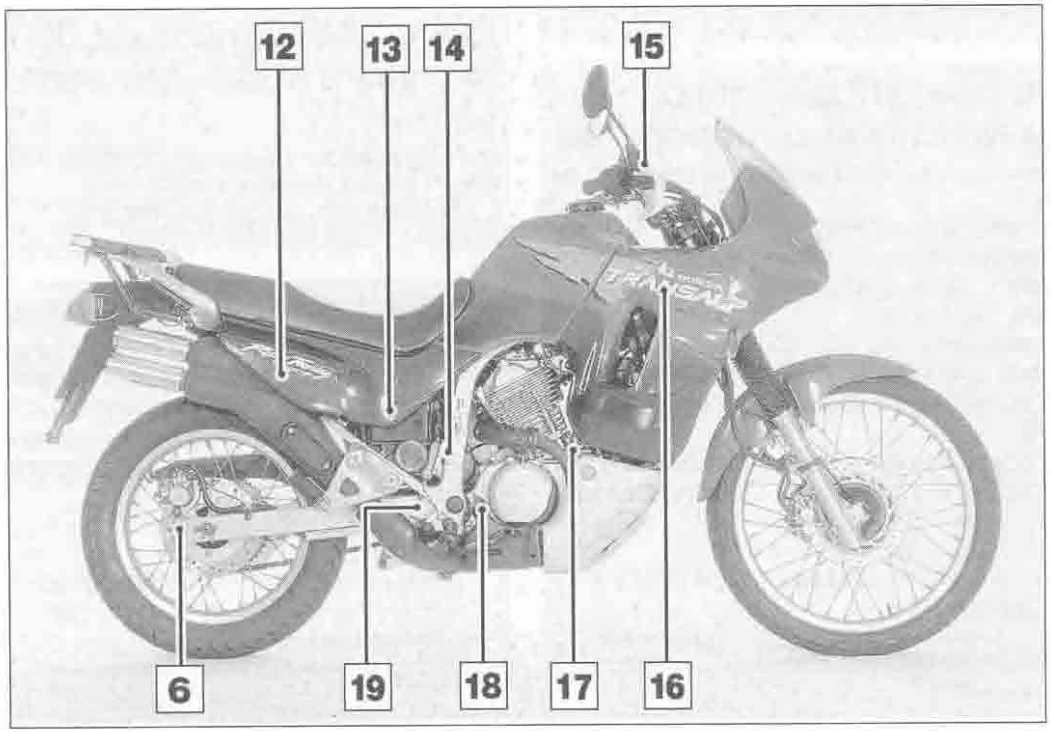
Non-scheduled maintenance

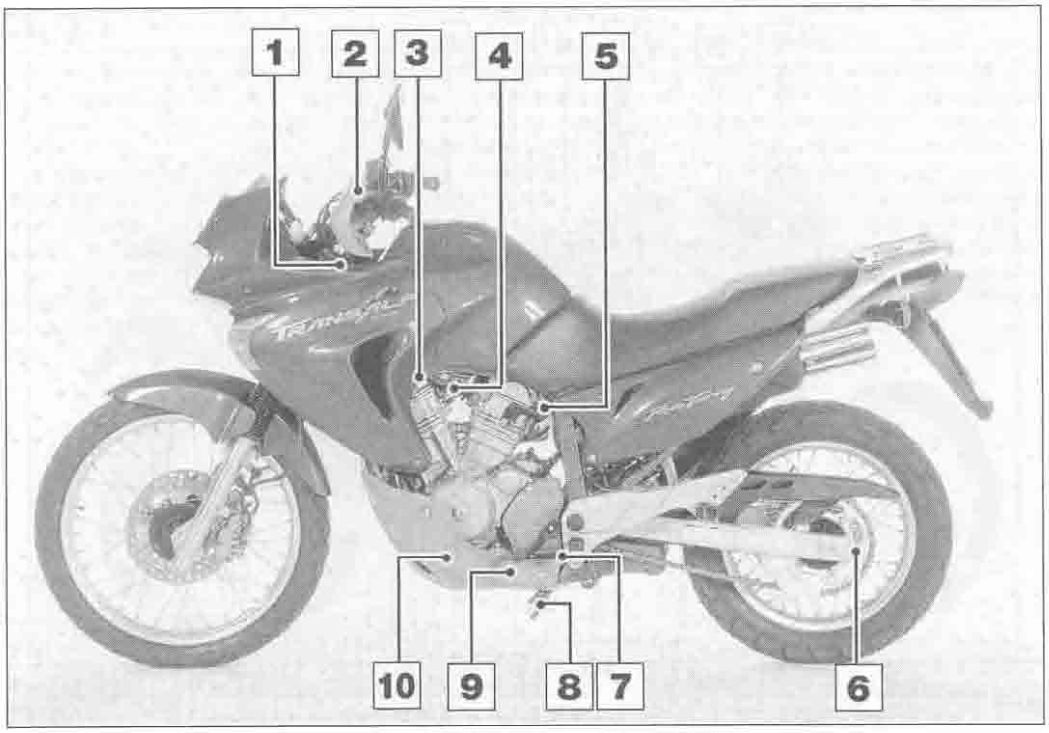
- ☐ Check the cylinder compression (Section 29)
- ☐ Check the engine oil pressure (Section 30)
- ☐ Check the wheel bearings (Section 31)
- ☐ Re-grease the steering head bearings (Section 32)
- ☐ Re-grease the swingarm and suspension linkage bearings (Section 33)
- ☐ Renew the brake master cylinder and caliper seals (Section 34)
- ☐ Renew the brake hoses (Section 35)
- ☐ Renew the fuel hoses (Section 36)
- ☐ Change the front fork oil (Section 37)



Component locations – XL600V models

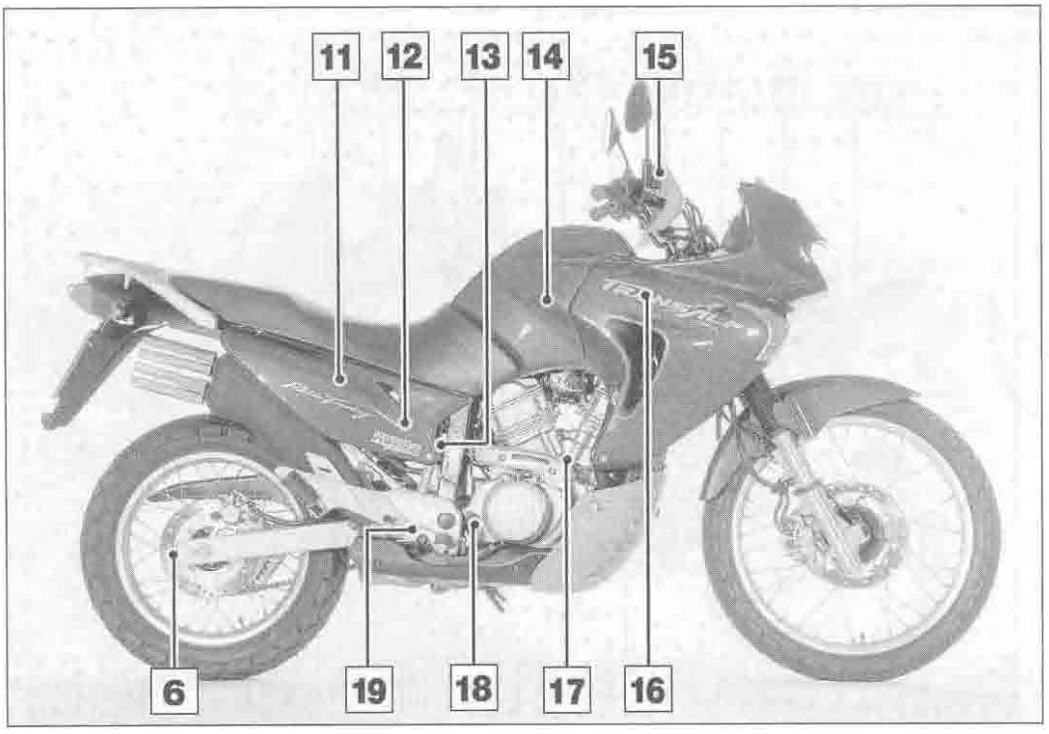
1 *Steering head bearing adjuster*
2 *Clutch cable upper adjuster*
3 *Idle speed adjuster*
4 *Coolant reservoir filler cap*
5 *Air filter*
6 *Drive chain adjuster*
7 *Crankcase breather drain*
8 *Oil filter*
9 *Coolant drain plug*
10 *Oil drain plug*
11 *Fuel tap strainer*
12 *Rear brake fluid reservoir (V-M models onwards)*
13 *Battery*
14 *Rear brake light switch*
15 *Front brake fluid reservoir*
16 *Radiator pressure cap*
17 *Clutch cable lower adjuster*
18 *Oil level dipstick*
19 *Rear brake pedal height adjuster (V-M models onwards shown)*

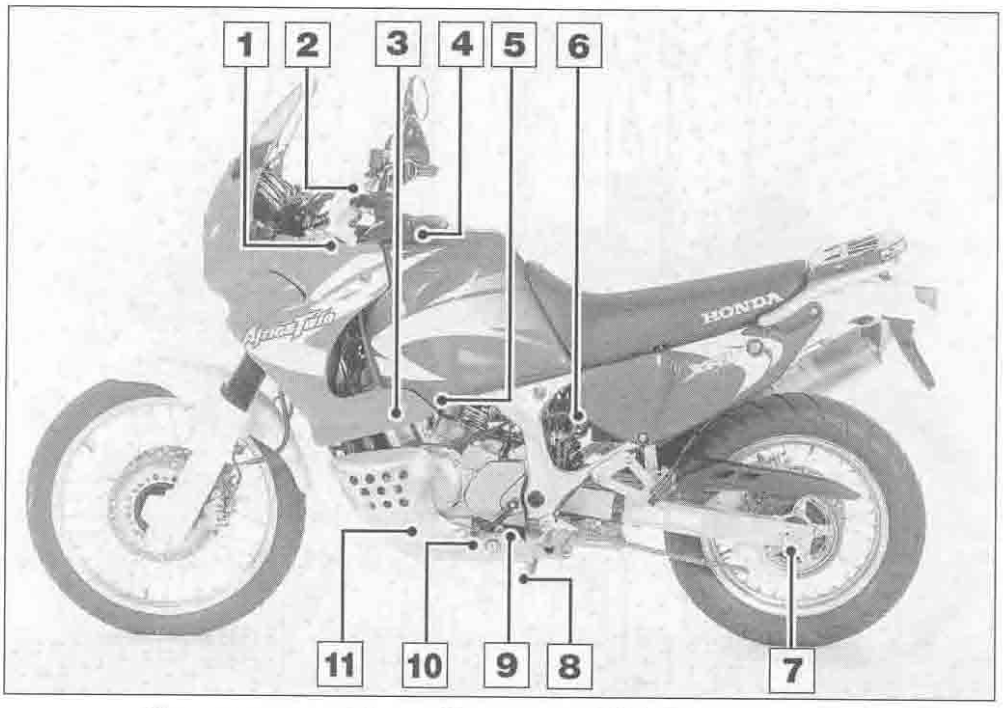




Component locations – XL650V models

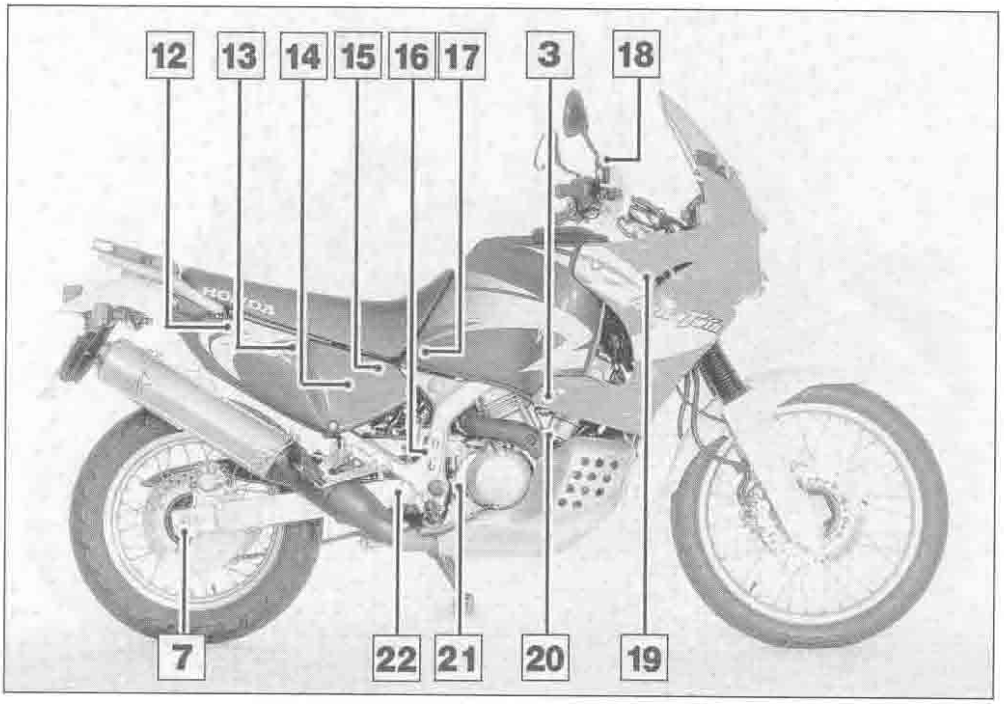
1 *Steering head bearing adjuster*
2 *Clutch cable upper adjuster*
3 *Fuel tap strainer*
4 *Idle speed adjuster*
5 *Coolant reservoir filler cap*
6 *Drive chain adjuster*
7 *Oil filter*
8 *Crankcase breather drain*
9 *Coolant drain plug*
10 *Oil drain plug*
11 *Rear brake fluid reservoir*
12 *Battery*
13 *Rear brake light switch*
14 *Air filter*
15 *Front brake fluid reservoir*
16 *Radiator pressure cap*
17 *Clutch cable lower adjuster*
18 *Oil level dipstick*
19 *Rear brake pedal height adjuster*





Component locations – XRV750 models

1 *Steering head bearing adjuster*
2 *Clutch cable upper adjuster*
3 *Fuel tap strainers (L to N models)*
4 *Air filter*
5 *Idle speed adjuster*
6 *Fuel filter (in-line type)*
7 *Drive chain adjuster*
8 *Crankcase breather drain*
9 *Oil filter*
10 *Coolant drain plug*
11 *Oil drain plug*
12 *Coolant reservoir filler cap*
13 *Rear brake fluid reservoir (L to N models)*
14 *Battery*
15 *Rear brake fluid reservoir (P models onwards)*
16 *Rear brake light switch*
17 *Fuel tap strainer (P models onwards)*
18 *Front brake fluid reservoir*
19 *Radiator pressure cap*
20 *Clutch cable lower adjuster*
21 *Oil level dipstick*
22 *Rear brake pedal height adjuster*



Introduction

1 This Chapter is designed to help the home mechanic maintain his/her motorcycle for safety, economy, long life and peak performance.

2 Deciding where to start or plug into the routine maintenance schedule depends on several factors. If your motorcycle has been maintained according to the warranty standards and has just come out of warranty, start routine maintenance as it coincides with the next mileage or calendar interval. If you have owned the machine for some time but have never performed any maintenance on it, start at the nearest interval and include some additional procedures to ensure that nothing important is overlooked. If you have just had a major engine overhaul, then start the maintenance routine from the beginning. If you have a used machine and have no knowledge of its history or maintenance record, combine all the checks into one large service initially and then settle into the specified maintenance schedule.

3 Before beginning any maintenance or repair, the machine should be cleaned thoroughly, especially around the oil filter, spark plugs, valve covers, body panels, carburettors, etc. Cleaning will help ensure that dirt does not contaminate the engine and will allow you to detect wear and damage that could otherwise easily go unnoticed.

4 Certain maintenance information is sometimes printed on labels attached to the motorcycle. If the information on the labels differs from that included here, use the information on the label.

Every 600 miles (1000 km)

1 Drive chain and sprockets – check, adjustment, cleaning and lubrication

Check

1 A neglected drive chain won't last long and will quickly damage the sprockets. Routine chain adjustment and lubrication isn't difficult and will ensure maximum chain and sprocket life.

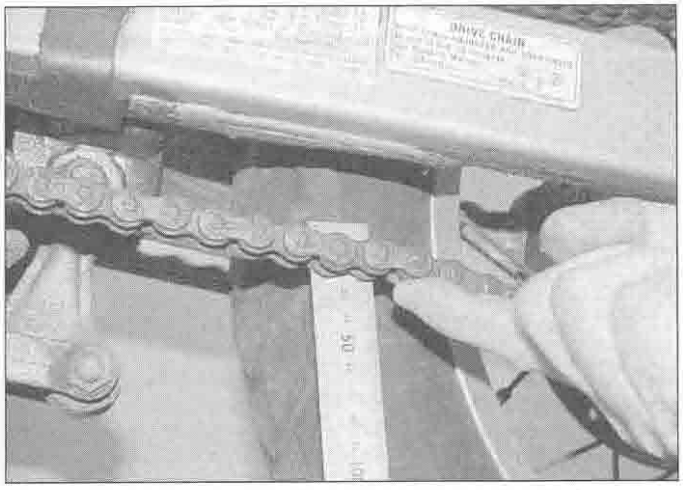
2 To check the chain, place the bike on its sidestand and shift the transmission into neutral. Make sure the ignition switch is OFF.

3 Push up on the bottom run of the chain midway between the two sprockets and measure the amount of slack, then compare your measurement to that listed in this Chapter's Specifications **(see illustration)**. As the chain stretches with wear, adjustment will periodically be necessary (see below). Since the chain will rarely wear evenly, roll the bike forward so that another section of chain can be checked (having an assistant to do this makes the task a lot easier); do this several times to check the entire length of chain, and mark the tightest spot.

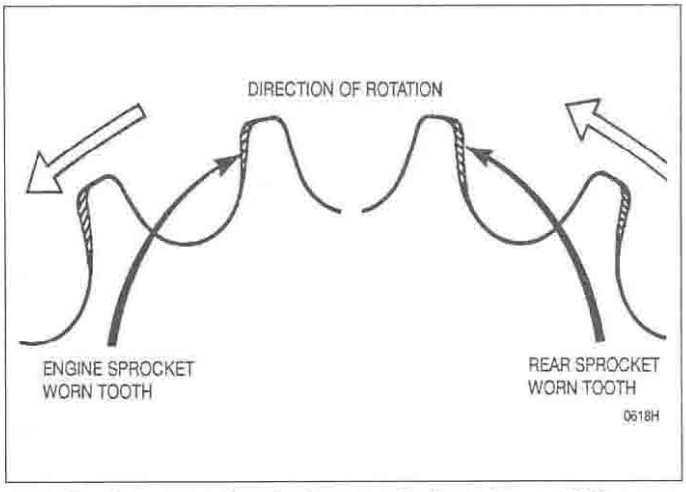
4 In some cases where lubrication has been neglected, corrosion and galling may cause the links to bind and kink, which effectively shortens the chain's length. Such links should be thoroughly cleaned and worked free. If the chain is tight between the sprockets, rusty or kinked, it's time to replace it with a new one. If you find a tight area, mark it with felt pen or paint, and repeat the measurement after the bike has been ridden. If the chain's still tight in the same area, it may be damaged or worn. Because a tight or kinked chain can damage the transmission bearings, it's a good idea to replace it with a new one.

5 Check the entire length of the chain for damaged rollers, loose links and pins, and missing O-rings, and replace it with a new one if damage is found. **Note:** *Never install a new chain on old sprockets, and never use the old chain if you install new sprockets – replace the chain and sprockets as a set.*

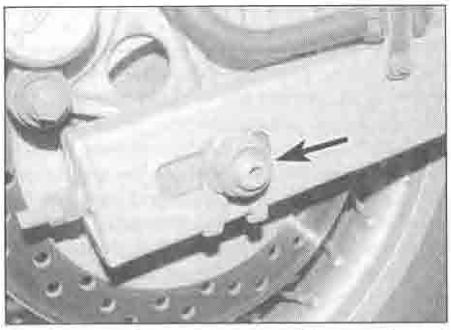
6 Remove the front sprocket cover (see Chapter 6). Check the teeth on the front sprocket and the rear sprocket for wear **(see illustration)**.



1.3 Push up on the chain and measure the slack

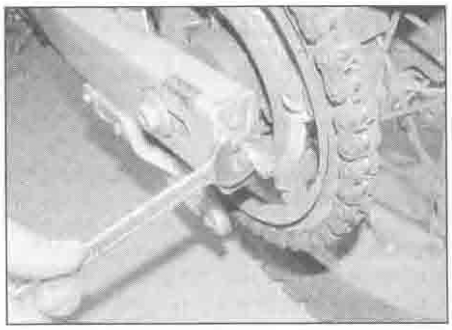


1.6 Check the sprockets in the areas indicated to see if they are worn excessively

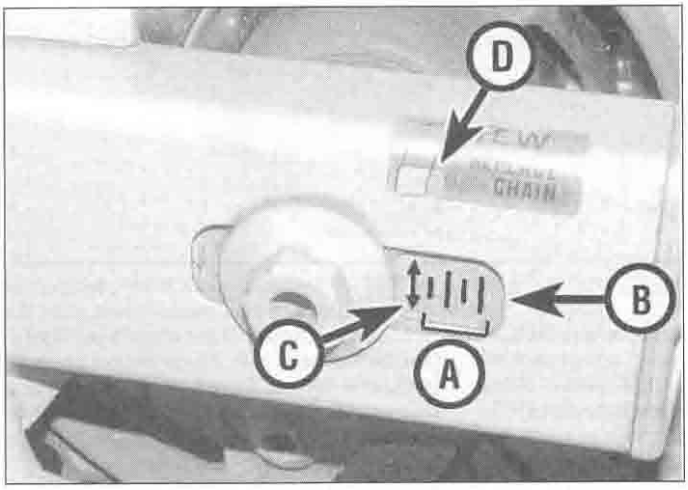


1.9 Slacken the axle nut (arrowed)

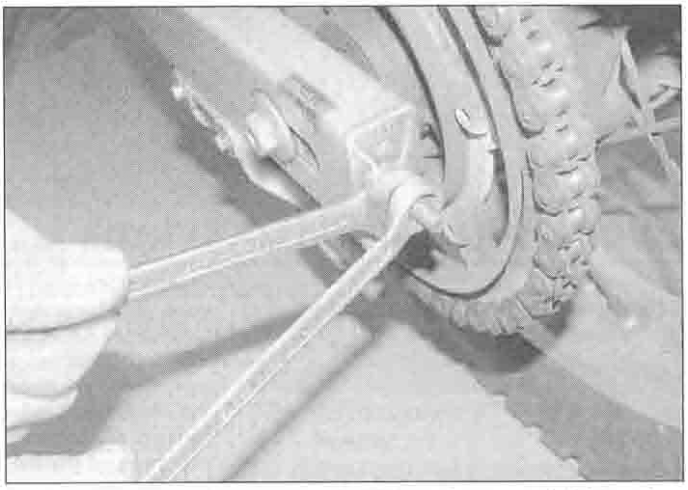
1.10a Slacken the locknut (arrowed) . . .



1.10b . . . and turn the adjuster as required until the slack is correct



1.10c Make sure the alignment of the adjustment markers (A) in relation to the rear edge of the cutout (B) is the same on each side. Check the position of the arrow (C) in relation to the red zone (D)



1.10d On completion, counter-hold the adjuster and tighten the locknut against it

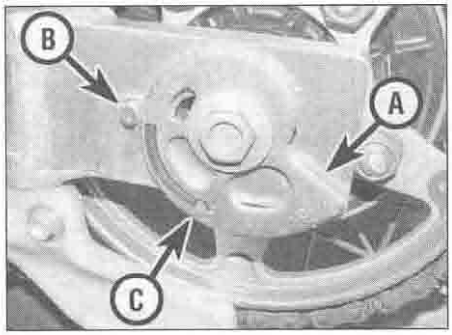
7 Inspect the drive chain slider on the front of the swingarm for excessive wear and damage. On some models there are wear limit lines marked on the front of the slider – replace it with a new one if it has worn down to the lines (see Chapter 6). If no lines are marked, renew the slider if it has worn to a thickness of 3 mm or less. Where fitted, similarly check the chain slipper near the rear sprocket, and renew it if it has worn to a thickness of 5 mm or less.

Adjustment

8 Move the bike so that the chain is positioned with the tightest point at the centre of its bottom run, then put it on the sidestand.

9 Slacken the rear axle nut **(see illustration)**.

10 On XL models, slacken the locknut on the adjuster on each end of the swingarm **(see illustration)**. Turn the adjuster nut on each side evenly until the amount of freeplay specified at the beginning of the Chapter is obtained at the centre of the bottom run of the chain **(see illustration)**. Following adjustment, check that each chain adjustment marker is in the same position in relation to the rear edge of the axle cutout in the swingarm **(see illustration)**. It is important the same index line on each adjuster aligns with the rear edge of the cutout; if not, the rear wheel will be out of alignment with the front. If there is a discrepancy in the chain adjuster positions, adjust one of them so that its position is exactly the same as the other. Check the chain freeplay as described above and readjust if necessary. Also check the alignment of the wear decal on the left-hand adjustment marker with the arrow on the adjuster. When the arrow aligns with the red REPLACE CHAIN zone, the drive chain has stretched excessively and must be replaced with a new one. On completion, counter-hold the adjuster and tighten the locknut against it **(see illustration)**.



1.11 Adjust chain slack by turning the eccentric adjuster (A). Make sure the alignment of each adjuster in relation to the pin (B) is the same on each side. Renew the chain when the red zone (C) aligns with the pin (B)

11 On XRV models, turn the eccentric adjuster on each side evenly until the amount of freeplay specified at the beginning of the Chapter is obtained at the centre of the bottom run of the chain **(see illustration)**. Following adjustment, check that each adjuster is in the same position in relation to the pin in the swingarm. It is important the same index line on each adjuster aligns with the pin; if not, the rear wheel will be out of alignment with the front. If there is a discrepancy in the chain adjuster positions, adjust one of them so that its position is exactly the same as the other. Check the chain freeplay as described above and readjust if necessary. Also check the alignment of the wear decal on the left-hand adjuster with the pin on the swingarm. When the red REPLACE CHAIN zone aligns with the pin, the drive chain has stretched excessively and must be replaced with a new one.

12 Counter-hold the axle head and tighten the axle nut to the torque setting specified at the beginning of the Chapter. Recheck the adjustment as above, then place the machine on its centrestand or an auxiliary stand and spin the wheel to make sure it runs freely.

Cleaning and lubrication

13 If required, wash the chain in paraffin (kerosene) or a suitable non-flammable or high flash-point solvent that will not damage the O-rings, using a soft brush to work any dirt out if necessary. Wipe the cleaner off the chain and allow it to dry, using compressed air if available. If the chain is excessively dirty it should be removed from the machine and allowed to soak in the paraffin or solvent (see Chapter 6). Note that if the motorcycle is ridden off-road, the chain should be cleaned and lubricated more often.

Caution: Don't use petrol (gasoline), an unsuitable solvent or other cleaning fluids which might damage the internal sealing properties of the chain. Don't use high-pressure water to clean the chain. The entire process shouldn't take longer than ten minutes, otherwise the O-rings could be damaged.

1.14 Use only the correct lubricant and apply it as described

14 For routine lubrication, the best time to lubricate the chain is after the motorcycle has been ridden. When the chain is warm, the lubricant will penetrate the joints between the sideplates better than when cold. **Note:** *Honda specifies SAE 80 to SAE 90 gear oil or an aerosol chain lube that it is suitable for O-ring or X-ring (sealed) chains; do not use any other chain lubricants – the solvents could damage the chain's sealing rings.* Apply the oil to the area where the sideplates overlap – not the middle of the rollers **(see illustration)**.

> **HAYNES HiNT** ***Apply the lubricant to the top of the lower chain run, so centrifugal force will work the oil into the chain when the bike is moving. After applying the lubricant, let it soak in a few minutes before wiping off any excess.***

> ⚠ ***Warning: Take care not to get any lubricant on the tyres or brake system components. If any of the lubricant inadvertently contacts them, clean it off thoroughly using a suitable solvent or dedicated brake cleaner before riding the machine.***

Every 4000 miles (6000 km) or 6 months

2 Idle speed – check and adjustment

1 The idle speed should be checked and adjusted before and after the carburettors are synchronised (balanced), after checking the valve clearances, and when it is obviously too high or too low. Before adjusting the idle speed turn the handlebars from side-to-side and check the idle speed does not change. If it does, the throttle cables may not be adjusted or routed correctly, or may be worn out. This is a dangerous condition that can cause loss of control of the bike. Be sure to correct this problem before proceeding.

2 The engine should be at normal operating temperature, which is usually reached after 10 to 15 minutes of stop-and-go riding. Place the motorcycle on its sidestand, and make sure the transmission is in neutral.

3 The idle speed adjuster is a knurled knob located on the left-hand side of the carburettors **(see illustration)**. With the engine idling, adjust the speed by turning the adjuster until the idle speed listed in this Chapter's Specifications is obtained. Turn the screw clockwise to increase idle speed, and anti-clockwise to decrease it.

4 Snap the throttle open and shut a few times, then recheck the idle speed. If necessary, repeat the adjustment procedure.

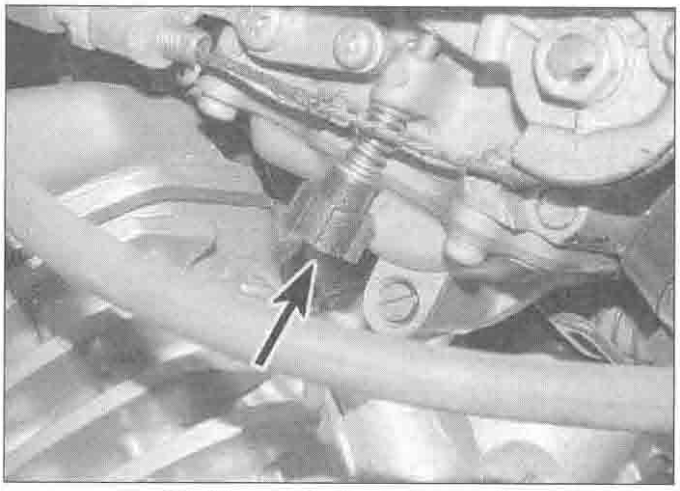
5 If a smooth, steady idle can't be achieved, the fuel/air mixture may be incorrect (see Chapter 4) or the carburettors may need synchronising (see Section 17). Also check the intake manifold rubbers for cracks or a loose clamp which will cause an air leak, resulting in a weak mixture.

3 Brake shoes/pads – wear check

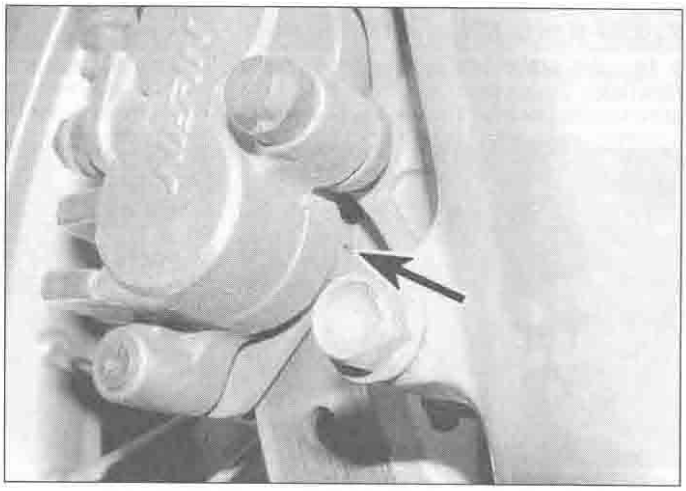
Front brake – all models

1 Each brake pad has wear indicators in the form of cutouts in the top and bottom edges of the friction material; these cutouts should be visible by looking at the edges of the friction material from above or below the caliper body. On early XL600V models, a cast arrowhead in the top of the caliper body indicates where to view the pad material.The pads also have wear indicator grooves cut in the face of the friction material which will be visible by sighting along the disc surface to the side of the pad **(see illustration)**.

2 If the wear indicators aren't visible due to



2.3 Idle speed adjuster (arrowed)



3.1 Brake pad wear indicator groove (arrowed)