

**HAYNES SERVICE & REPAIR MANUAL**



# HONDA

## XL600/650V Transalp

## XRV750 Africa Twin

'87 to '02



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# Honda XL600/650V Transalp & XR750 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

XR750 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.

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.



Honda C70 and C90 OHV-engined models

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

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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



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

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.

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 in 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



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

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 motorcycles as we know them today.

## 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 knobby-



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 About this Manual

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.

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 callper 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)



## 0•12 Bike spec

### 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

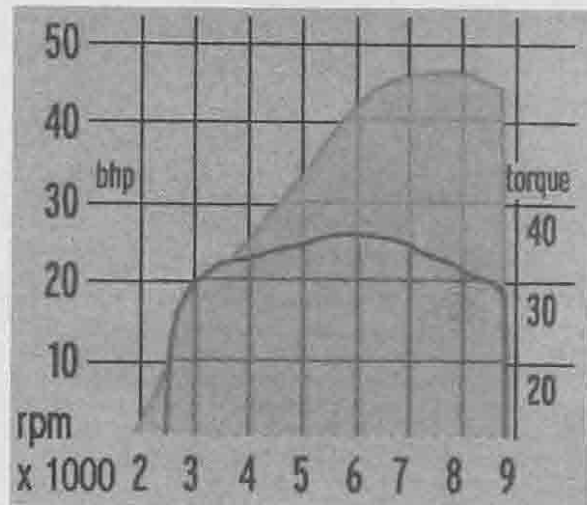
XL600V models	42 mpg, 9.2 mpl, 6.7 l/100 km
XL650V models	33 mpg, 7.3 mpl, 8.5 l/100 km
XRV750 models	36 mpg, 7.9 mpl, 7.8 l/100 km

### 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](http://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, even when 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...

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

**X 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.

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

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

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

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

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

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

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

**X Don't** lift a heavy component which may

be beyond your capability - get assistance.

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

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

**X 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.



# 0•16 Daily (pre-ride) checks

**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

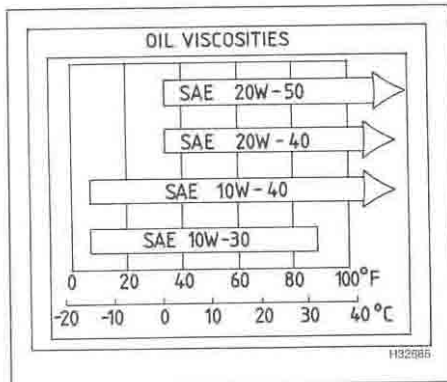
- Modern, high-revving engines place great demands on their oil. It is very important that the correct oil for your bike is used.
- Always top up with a good quality oil of the specified type and viscosity and do not overfill the engine.

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:

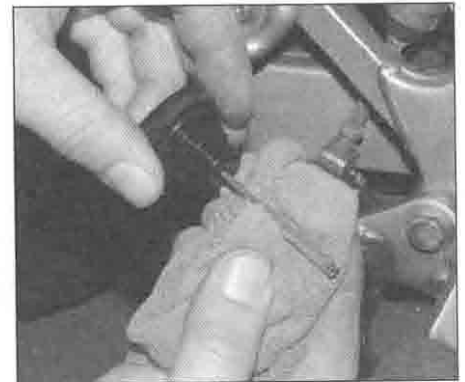
- If you have to add oil frequently, check whether you have any oil leaks from the engine joints, seals and gaskets. If not, the engine could be burning oil, in which case there will be white smoke coming out of the exhaust – (see *Fault Finding*).



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



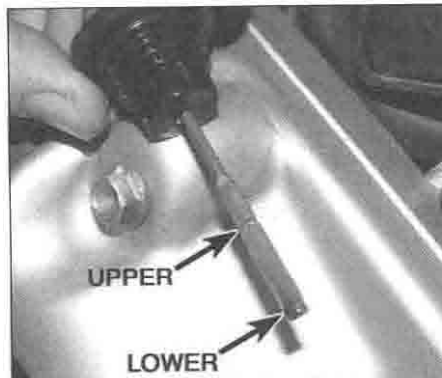
**1** Unscrew the oil filler cap from the right-hand side crankcase cover. The dipstick is integral with the oil filler cap, and is used to check the engine oil level.



**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.

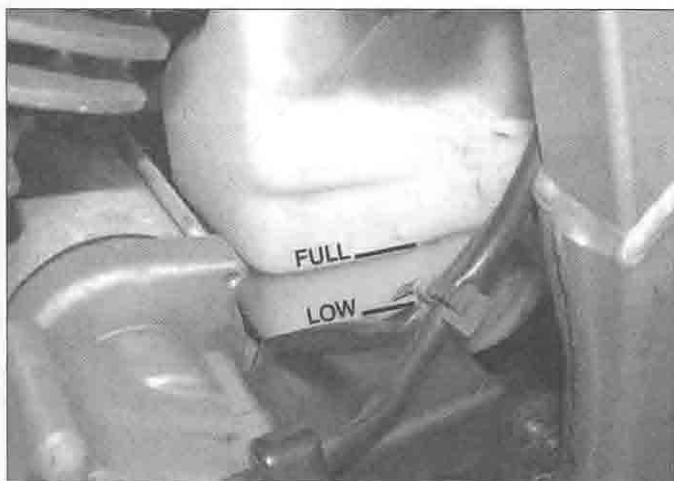
### Bike care:

● 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,

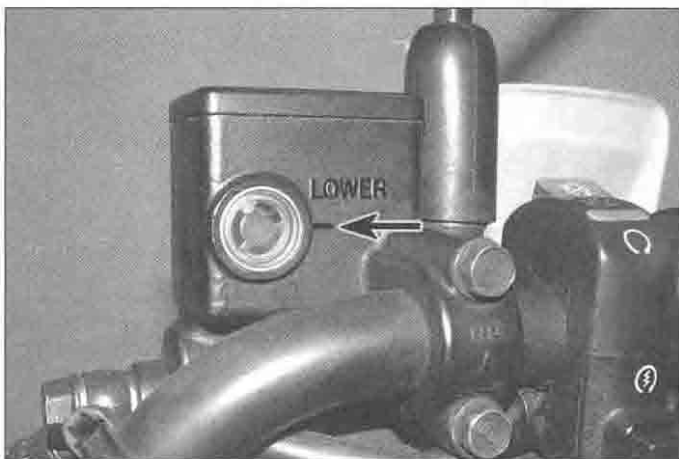
Section 3 to check the amount of wear in the pads if required).

- 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.



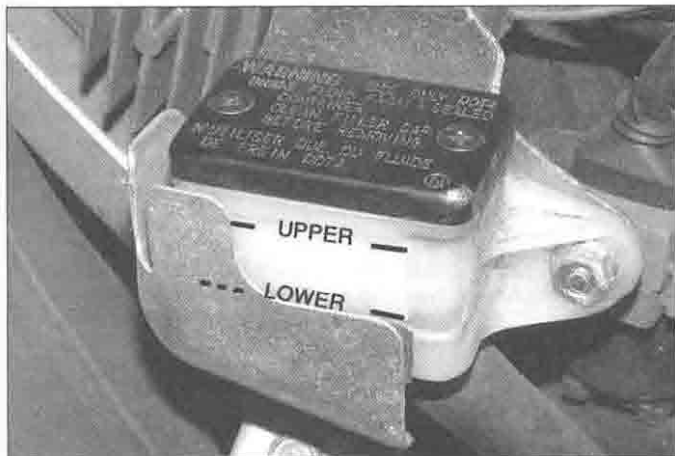
- 3 Top up with fluid of the recommended type until the level is up to the ridge along the inside of the front wall of the reservoir (arrowed). Do not overfill.



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

## Daily (pre-ride) checks 0•19

### 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

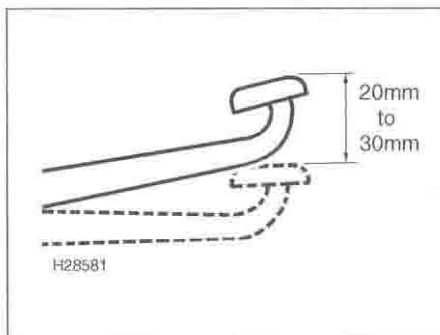
*A rear drum brake is fitted to XL600V-H to L (1987 to 1990) models*

#### Bike care:

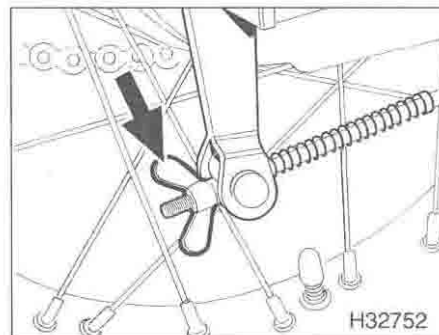
✓ The amount of travel in the rear brake pedal before the brake takes effect will increase as the shoes wear down (refer to Chapter 1, Section 3 to check the amount of wear in the shoes if required).

✓ 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.