

IND  
34355

**HONDA  
XR500**

**125 MX SHOOTOUT!**

# **DIRT BIKE**

**AUGUST 1979 • \$1.25 UK60p**

**WIDOW-  
MAKER!  
THE BIG  
ONE**

**RM250N:  
SUZUKI'S  
SLINGSHOT!**

**SPARK  
WARS  
HOW  
TO**

**WEIRD  
WHEELS:  
HONDA ATC  
& ODYSSEY**



**BATTLE OF THE BULLETS!**



ISSN 0384-1546

# Honda XR500

# LONG LIVE THE NEW KING!

Thumping the competition

By the Editors of Dirt Bike

It seems that it takes Honda quite a while to come out with a new model, but when they do, it has a lot of engineering technology behind it. The 1979 XR500 is one of those.

After relying on their XL350 design for years, Honda went about designing an all-new powerplant and surrounding it with an all-new chassis. In the past, if a Honda thumper freak wanted a big-bore off-road machine, he had to roll his own. Now Honda offers the most complete open class thumper to be marketed in the U.S.

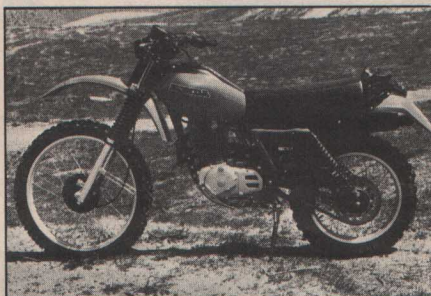
## Chassis

The basis of Honda's new 500 is their diamond-configuration frame that uses the engine as a stressed member of the chassis. This design eliminates the need for the full cradle frame tubes below the engine. This means more ground clearance and less weight.

While the engineers were on the chassis, they decided to include the application of the controversial 23-inch front wheel. Honda is the first manufacturer to design a bike around the use of this larger front wheel. In theory, the 23-incher offers the same advantages that the 21-inch wheel had over the 19, but the results are difficult to evaluate in all conditions, since there are only a limited number of tires available for this size of wheel. Giving a definitive yay or nay is thus not possible. In other words, some of the things that seem wrong may be due to the tire design. The jury remains out on this one.

Suspension design and travel exhibit the state of the art for enduro machines. Leading axle forks offer 224mm (8.8 inches) of front wheel travel. A four-bolt clamp on the right leg helps maintain front-end rigidity by securing the axle and avoiding much of the inherent twist and flex. Four-bolt triple clamps that pivot on tapered steering head bearings also add to front-end strength.

At the rear, canted, inverted gas shocks offer 198mm (7.8 inches) of wheel travel. The shock is mounted as



far to the rear as possible with the bottom mount over the axle. The top mount is far enough rearward to not interfere much with the rider's legs. With the lower mount over the axle, Honda figures that the swingarm need not be as hefty as an arm with the shock mount in front of the axle. This is true, but it puts all of the torsional rigidity on the axle. If the axle is allowed to get loose even slightly, or is not tightened properly, swingarm flex will immediately appear.

Brake design at the rear is conventional, utilizing a cable-operated brake arm that pulls over the axle. A standard brake stay arm is employed, but a handy slot-type pin is used to anchor it at the rear. This makes for faster tire changes, since there is no need to loosen either of the stay arm bolts.

To avoid snagging weeds and other trail-side debris, the front brake arm faces backwards and pulls above the axle. Both the cable and the arm are well-protected. The speedo cable is routed to the rear also. The entire setup is very sanitary.

Backing plates on both brakes are magnesium alloy, while the conical hubs employ an aluminum alloy casting. The front hub also features a replaceable steel spoke flange for the long-side spokes.

Plastic abounds on the XR, with the exception of the 2.6-gallon steel gas tank. Side covers, headlight/number plate combo and fenders are made of a durable plastic. The rear fender is long and wide enough to offer excellent protection. It is also sculptured to provide a lifting point at the rear loop. Nice touch. The tank has a half-gallon reserve capacity and is fitted with a large cap, that became easier to remove and install as the bike got some time on it.

Some other items that represent good detailing are the rear tool bag, well-protected taillight, folding shift and brake levers, rubbing block chain tensioner and a large-number, resettable trip meter.

## Engine

While the engine uses technology first introduced on the XL/XR250s, Honda makes it clear that this is not just a bored and stroked 250. Although the 497cc thumper is the same width as the smaller engine, the internals are much beefier. Crank bearings, primary drive gears, clutch, oil pump and all transmission pieces are much beefier.

Not unlike the 250, the 500 uses chain-driven front and rear counterbalancers to counteract the large inertia forces inherent in a big single. This eliminates much of the vibration, helps smooth out the power delivery and allows the use of a lighter frame design and construction.

Honda has managed to pump nearly 36 hp out of this 500 through the use of their Pentroof combustion chamber design, four-valve head and overhead camshaft. The head features twin exhaust ports. This design allows a cooling area between the valves, and the use of smaller-diameter twin head

pipes that tuck in better than one large one.

Fired by a Capacitor Discharge Ignition (CDI), the engine breathes through an oiled foam air cleaner and a 34mm Keihin carb. A slightly restrictive, but well-waterproofed air box is mounted under the left-side number plate.

To ease starting, a built-in kickstarter-actuated compression release depresses both exhaust valves during starting. This usually eliminates the customary starting ritual required with most thumpers. The kickstart lever is long enough to provide maximum leverage and gives the engine a good spin.

With all the features built into the engine to enhance starting, reduce vibration and maximize power output, the engine is understandably complex. Since four-strokes traditionally exhibit less wear in the long run, the complexity may not be a problem for the tuner, but the big disadvantage of all this technology is weight. Dry, but with the carb, the engine weighs just under 90 pounds.

Add this to a large chassis with occasional inattention to weight reduction (i.e. steel tank, heavy silencer, steel seat base, mild steel frame), and the finished result with a full load of fuel, engine oil and other lubes, tips the scales at 293 pounds. Not exactly svelte.

### Riding vibrations

Fortunately, the weight is distributed on the XR so that it doesn't feel that heavy—unless you drop it on a hill and have to pick it back up, or drag it out of a ditch. At that point it feels every bit of nearly 300 pounds. Face it, the bike can't be tossed around like a 175 or a 250. The rider notices the weight in the corners and when trying to get it slowed down, too. It doesn't feel ponderous and ungainly. Quite to the contrary, the XR is pretty lively, and it seems to carry its weight low in the chassis. But, that weight is there. The price to pay for a big motor.

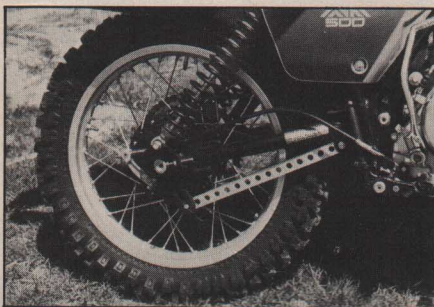
Starting the XR is really not difficult with the built-in compression release. Just get on and boot it, without paying attention to compression stroke or anything. The CD ignition helps out in this case, too, by providing a good high-voltage zap. Remember, though, that this is a 500 single, so the weak of kick need not apply.

Our engine started easily without much fuss and didn't seem to be particularly cold-blooded for a four-stroke. Jetting for our altitude was safely close to optimum, but it needs jet changes at around 4000 feet and up to be really crisp.

The rear suspension is supple enough



Cleanly styled engine has minimum of snaggers around cases. Small twin pipes are carefully tucked away from rider. Long kickstart lever also operates automatic compression release for easier starting. It works.



Cable-operated rear brake is very good wet or dry. Brake stay arm is a quick-disconnect unit for faster tire service.

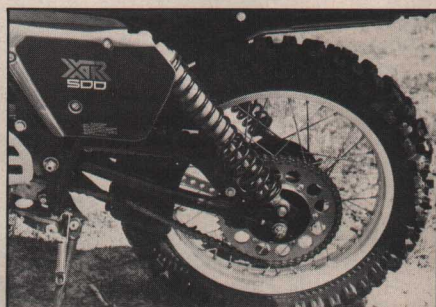
for the small bumps, yet just stiff enough for the rain ruts and square-edged holes found on a fast trail. This makes for rider comfort, which is a major factor on a machine that's ridden for five or six hours at a time.

Up front, though, it's a bit mushy and bottoms easily, especially on downhills, or when the rider doesn't keep the power on. With the throttle chopped on level ground, the XR offers only a few precious inches of travel. So, it's not set up for California or Michigan sand whoops. Addition of air caps and careful fork oil selection will take care of this, we feel. Damping is a little on the light side and adversely affects the directional stability in rocky situations.

Like most big-bore bikes, the XR steers with the rear tire to a certain degree. Full throttle on uphill nasty stuff is to be avoided, since the light front end will then "hunt." The XR reacts much better to a gear high situation—lugging the engine a little. The rider can get a lurching and snatching condition when the gear is too tall, but the big single will still continue to pull.



Rear exhibits much good detailing. Fender is sculptured to allow a pick-up point for lifting, and taillight is well protected.



Inverted gas/oil shock is mounted as far as possible to the rear to alleviate swing-arm of undue stress. Claw action enduro tire is a trade-off.

Out in the open, though, the engine pulls cleanly. Revs come surprisingly easily and quickly. This, of course, is where any big-engined bike is in its element. Room to screw it on and hold on for dear life. Ours ran in the high 70s (mph) down a semi-hard sandwash, which was considerably faster than that particular tester wanted to go. Pavement speed is probably closer to 85 mph.

Clutch lever actuation is very light for a big bike—which is good—since the clutch must be called on to change gears in high-load situations. In deep sand, full-throttle acceleration, during engine braking and on downhills, the gear lever could only be nudged either way with the quick fanning of the clutch lever. This situation gets worse as the engine gets hotter or as the oil starts to break down from use.

We'd suggest that the oil be changed at 100-mile or less intervals if you ride much in the above conditions. Honda specifies using 20W50 motor oil. Be sure to use a good-quality oil designed for use in a motorcycle if you want good results. We made our first oil



# SUPERLUBES



Superman LaPorte, Suzuki factory racer, has joined forces with PJ1 Super Lubes to protect dirt bikers everywhere. Teaming with PJ1's secret Chain Lube, a blending of molybdenum disulfide and synthetic sperm oil, they fight against chain wear, and your dreaded foe. Flung Chain. And for superior fork action there's PJ1's Fork Oil with anti-foaming organosiloxane. Leaving nothing to chance, PJ1 Foam Filter Oil keeps dirt in its place throughout the universe.



Send \$14.95 for chain lube sampler, hat, t-shirt (indicate size), 2 patches, 6 decals. Check or money order to: PJ1 Corporation, 5955 De Soto Ave., Woodland Hills, CA. 91367, ©1979.

change Klotz 20W50 four-stroke synthetic blend, and were quite impressed with its results. The engine is quieter and shifting is improved. Since the engine oil is also the gearbox and clutch oil, good, fresh lube is a necessity for hassle-free operation.

Changing oil, unfortunately, is not a quick-and-easy situation. It involves dropping the skid plate and pulling the oil strainer cover. They also suggest removing the right-side engine cover and draining the primary drive side, but this is only for masochists, or on rare occasions.

Braking at both ends is positive, progressive and without fault. Each of the brakes also works quite well when wet. Unless the hubs were filled with mud, we noticed no difference in wet and dry braking. Interesting.

Accelerating and braking traction is good, especially on hard-packed clay and hard fireroads. The tires didn't enjoy being in the sand, though, and they show no inclination for self-cleaning in gooey clay-like mud. In these two situations, the tires aren't the ticket. All around, though, they seemed to be better than the motocross versions of the "Claw Action" that we've tested on the CRs. Part of this is probably due to the rim-saver edge, which seems to lend a little more sidewall stiffness.

We haven't determined whether it is a function of the tire design, the 23-inch wheel or a combination of both, but the front tire wants to follow ruts or veer off in loose, off-camber-type stuff. The rider really has to fight the bars in these instances. It may be a negative result of the large contact patch, but that is pure speculation.

Handling, when subjected to the good traction conditions described above, is good. The front end sticks well in most situations. The soft front end allows minimum rake under braking and transfers the weight to the nose. With smooth application of throttle, the rear end can be set up into a slide easily. Since the power builds so smoothly, keeping it in the tail-out mode (We just love that word) is easy. Even those who react adversely to sliding can make the XR work.

For a long-wheelbase machine, the XR turns in some fairly tight stuff. It's just more difficult to make it do what you want because of the weight. If you are going to be riding in tight woods or on steep trails with pointed switchbacks, you are going to be much happier with a smaller bike—like the XR185, for instance.

But, if you value blinding-flash passes down a fireroad and enough power to keep the front end pawing at the sky, then the XR500 is the machine for you. It's fairly refined for a 500 single—if that is possible. The engine



RICK BURGETT

**THE CHAMPION**  
and his **TIRES**

EXCLUSIVE GOLD STREAK  
**METZELER**

BY **MOTORACE**

P.O. Box 861 Wilbraham, Massachusetts 01095





S \_\_\_ M \_\_\_ L \_\_\_ XL \_\_\_  
Short Sleeve \$4.00  
Long Sleeve \$6.00



**METZELER T SHIRTS**  
Send check or money order. Allow 3 to 4 weeks delivery.

**MOTORACE**  
P.O. Box 861 Wilbraham, Massachusetts 01095

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Print clearly, this is your shipping label.



Headlight/number plate design makes sense—there is room for the speedo, and cable routing is more natural. Beefy triple clamps seem quite strong.



Brake and speedo cable routing behind left fork leg is sanitary. Trailing brake actuation arm is up out of harm's way.

exhibits no more vibration than a 250, and is admirably quiet. These two aspects belie the fact that it is a half-liter displaced thumper, but the throttle hand will tell you something else.

#### Obvious comparison

When measured side by side with Yamaha's TT500F, the XR comes out on top. Although they are nearly the same weight, the XR carries its weight better. It is faster, has more suspension

## Honda XR500

NAME AND MODEL	HONDA XR500	WHEELBASE	1400mm (55.1 inches)
ENGINE TYPE	Four-stroke OHC single	GROUND CLEARANCE	280mm (11.0 inches)
BORE AND STROKE	89x80mm	SEAT HEIGHT AT TANK	880mm (34.6 inches)
DISPLACEMENT	497cc	STEERING HEAD ANGLE	28.5 degrees
HORSEPOWER (CLAIMED BY FACTORY)	35.7 at 6500 rpm	TRAIL	138mm (5.4 inches)
CARBURETION	Keihin 34mm	WEIGHT WITH ONE GALLON GAS	283 pounds
RECOMMENDED GASOLINE	All—96 RON min.	RIM MATERIAL	Aluminum
RECOMMENDED OIL (MFR.)	20W50	TIRE SIZES	
FUEL TANK CAPACITY	2.6 gallons	FRONT	3.00x23 6PR Bridgestone
FUEL TANK MATERIAL	Steel	REAR	4.60x18 6PR Bridgestone
GAS/OIL RATIO	N/A	SUSPENSION	
LUBRICATION	Pressure feed	FRONT, TYPE AND TRAVEL	Telescopic fork, 224mm (8.8 inches)
OIL CAPACITY	2.0 liters (2.1 quarts)	REAR, TYPE AND TRAVEL	Laydown gas shock, 198mm (7.8 inches)
AIR FILTRATION	Oiled foam	INTENDED USE, MFR	Off-road
CLUTCH TYPE	Wet, multi-plate, seven-disc	COUNTRY OF ORIGIN	Japan
TRANSMISSION	Constant-mesh five-speed	DISTRIBUTOR	American Honda Motor Co. 100 W. Alondra Blvd. Gardena, California 90247
GEARBOX RATIOS		OVERALL RATING, FROM 0 TO 100, VARIOUS CATEGORIES, KEEPING INTENDED USE OF MACHINE IN MIND:	
1	2.462:1	HANDLING	92
2	1.647:1	SUSPENSION	89
3	1.250:1	POWER	99
4	1.000:1	COST	90
5	0.840:1	ATTENTION TO DETAIL	95
GEARING, FRONT/REAR	14/48	EFFECTIVENESS, STONE STOCK	93
IGNITION	Capacitor Discharge Ignition (CDI)		
PRIMARY KICK SYSTEM?	Yes		
RECOMMENDED SPARK PLUG	(ND) X-24ESU		
SILENCER/SPARK ARRESTOR/QUALITY	Yes/yes/excellent		
EXHAUST SYSTEM	High, right side, heavy		
FRAME, TYPE	Diamond		



Gary Woodling attacks another stream crossing aboard the XR500 and demonstrates the good waterproofing.

travel, handles better and is outfitted more thoroughly for off-road riding.

On the other hand, it is not as fast as a Yamaha IT400F, which weighs in 28 pounds lighter in fighting trim. But if you are considering valves in your future, we'll drop the IT from the running.

#### In conclusion

Honda's XR500, long awaited by

Honda fans nationwide, lives up to its displacement. It is a lot of motorcycle. Considering the massive engine, Honda's engineers have tailored a package around it that helps the rider make the most of this power. It won't punish him like other big singles, whether starting it or riding the red off it. As long as the XR stays in its element, the XR owner will be just as happy as a clam. □