

# SUZUKI DR370

■ Suzuki's long rumored four-stroke Single has finally arrived. Guesses and rumors about its engine size have ranged from 300 to 600cc.

The actual production bike is a somewhat odd (for a four-stroke) 370cc size. It is a big bore (85.0mm), short stroke (65.2mm) configuration that has a wet sump: The engine's oil is carried in the bottom of the engine, which eliminates the need for a remote oil tank and the external oil lines required to connect the oil reservoir to the engine. This makes for a much less cluttered look but has its own disadvantages, mainly an increase in engine height because of the oil pan at the engine's bottom.

This all-new engine uses a chain-driven single-overhead cam to open large intake and exhaust valves (one of each). The cam rides in the head casting without the aid of bearings. This system is similar to that used by Honda. Oil pressure is only seven psi to the cam, but the flow of oil is plentiful. By using a low pressure, high volume approach to the lubrication system, the chance of seal failure is reduced and engine longevity is just as good as a high oil pressure approach.

The head has a hemi-type combustion chamber with the spark plug angled toward the intake valve. By angling the plug and placing it in a small trough that directs the incoming fuel toward it, combustion efficiency is improved.

The large piston is slightly domed and the compression ratio is set at 8.7:1. The piston travels through its route on a connecting rod that doesn't use a top end bushing or bearing. This no-bearing approach works quite well on a four-stroke engine. The piston's oil and scraper rings wipe the cylinder of excess oil, and push it through holes in the piston (behind the rings). This oil is directed toward the wrist pin and rod top. Yamaha's TT500 uses this same system and it has proven reliable.

The bottom of the rod is another matter. It incorporates a large caged roller bearing and pin. It looks like it could easily take the load of an engine displacement twice as big. This crank pin is located fairly close to the output shaft, leaving a lot of room on the full-cut counter balance flywheels for stroking. In fact it looks as if the engine was designed to be a 500cc or larger and then destroked to produce 370cc. This would also explain the odd short stroke configuration.

The transmission gears and shafts also look designed for more than the 370's size and horsepower.

The clutch is generous, with many large plates. It is driven by helical-cut gears,

which run quieter than the straight-cut variety.

Shifting is accomplished by three shifting forks guided by a large, hollow shift drum. This drum is turned by a spring loaded plunger device that lives in the end of the drum itself. The forks, drum and associated parts are at the bottom of the case, so they are always running in oil. This same shifting system has been used for several years in Suzuki's RM motocrossers. It is simple, efficient and reliable.

The engine has obviously been designed with expansion and ease of maintenance in mind. Valve adjustment is performed without the need for a feeler gauge. They are adjusted to zero clearance when cold. The bronze oil filter is located in the bottom of the pan and doesn't require replacement; just clean at recommended intervals and reinstall.

Maybe one of the best assets the engine has is its lack of weight. It weighs in at 75 lb., almost 20 lb. lighter than a Yamaha TT500 engine!

This fine powerplant is nestled in a mild steel frame that looks like the front half of an RM with its own rear section.

It has a large backbone. Equally large single downtube and nice gusset plates beef up the steering head area. The backbone tube terminates at the tank's rear, where two smaller tubes angle down and out to the engine's rear, then curve forward under the motor and connect to the front downtube. (This section is much like the RMs.) The seat rail tubes run from the main backbone rearward and stop just behind the top shock mounts. The top shock mounts are formed in a V made by short tubes that connect the seat rails and main frame. The swing arm is also steel, of a large enough diameter to prevent flexing and breakage under normal use; trailing, not racing.

The suspension uses this same trail riding theme. The forks are nicely styled leading-axle jobs that have around 7.5 in. of travel and have fork boots to protect their working surface from mud, rocks and the like. Their action is smooth but the damping could use some more development. (More about this later.) Gas-charged KYB shocks are cantilevered at the rear but their placement only allows 5 in. of rear wheel travel. Damping and spring rate are right for moderate use, but under prolonged hard use, they fade.

DR styling drew mixed reactions. Some thought the smooth flowing tank and seat blended into the fender were quite attractive. Purists on the staff were quick to compare the gourd-shaped seat to a 1968 Yamaha DT1. These same people criticized the short, wide, steel rear fender and snap-on molding under the seat. In fairness, the seat is more narrow at its front than the old DT1, but the width still makes

it difficult to shift one's weight to the rear if your legs aren't bowed. The seat blends nicely into the narrow 2.2-gal. steel tank that is mounted as low as possible on the frame.

The front fender is made from plastic and its shape gives decent protection to the operator.

A large aluminum skid plate protects the center and side cases without adding much weight.

Naturally a 21-in. front wheel and 18-in. rear are used. Good looking conical hubs that house extremely efficient brakes lace to lipless aluminum rims that have full knobbies mounted to them. The front brake is close to being perfect. The back is very good, but despite a full floating backing plate, it still causes the rear suspension to lock up if the operator applies too much pressure to the brake pedal.

The DR's exhaust system is rather strange looking. The head pipe curves around the left side of the engine and enters a metal, can-shaped silencer that sits at a 90 deg. angle across the frame, just under the small plastic airbox. Another pipe exits this can from the right side and goes up and rearward, where it enters a large, more normal looking silencer. This system is very quiet but looked awfully heavy. We weighed the complete unit (head pipe, can, silencer and mounting bolts) and our certified scales showed only 12 lb. Surprise.

Like most bikes aimed toward the casual trail rider, the DR comes with a small, lightweight headlight and taillight. Although small and unobstructive they work well. Certainly not night racing items but the small headlight produced enough light for the DR to be ridden after dark with confidence.

The DR doesn't use an external compression release lever, like a Yamaha 500 does, but most people won't miss it. A fairly hard kick will usually light the engine although occasionally it gets fussy, as all big four-stroke Singles tend to do. A sight window at the side of the cam cover shows a silver screw head when the engine internals are at the right placement for starting, but . . . to see through the window requires the operator to be double-jointed or to dismount. We found it to be unnecessary anyway and chose to stomp on the kick lever without thought to the proper window view.

The engine makes beautifully smooth power that propels the machine up and down hills without straining. Its clutch is progressive and may be engaged slowly if desired, a treat after some four-stroke Single all-or-nothing designs. Primary kick-starting is also employed but we found it easier to kick while in neutral.

Most people will be able to sit on the big Suzi and touch the ground without tiptoe-



**CYCLE  
WORLD  
TEST**



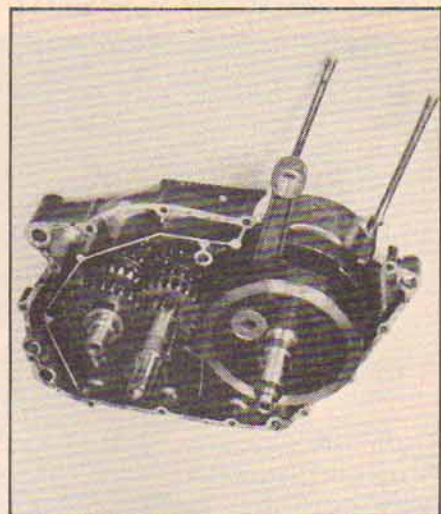
*An All New Four-Stroke Single  
that Features a Lightweight (75-lb.) Engine*



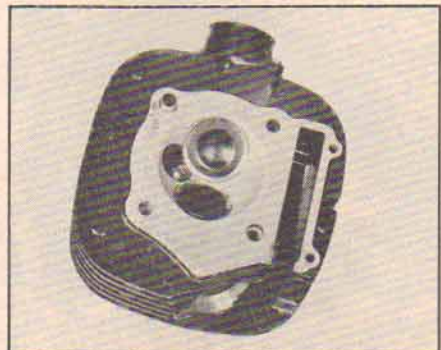




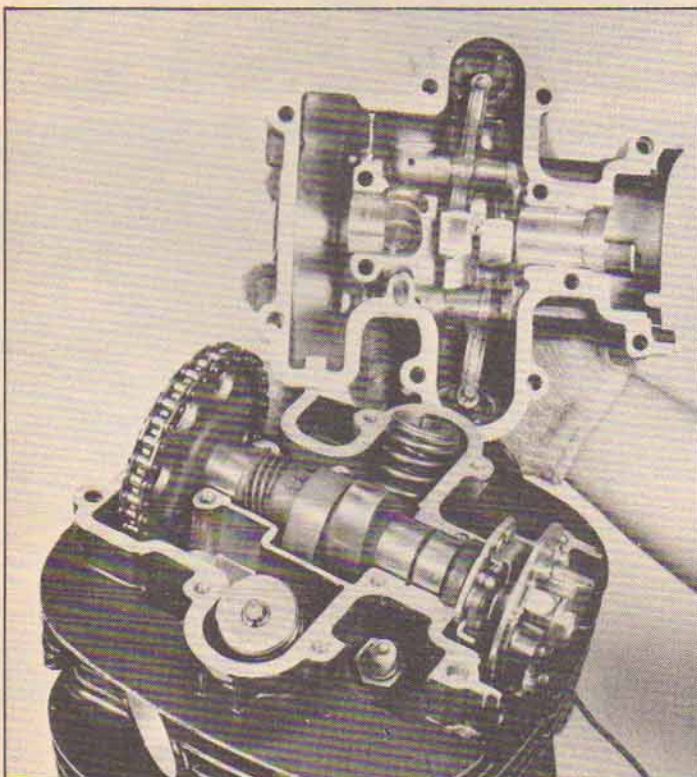
DR frame and swing arm are strong, flex-free items. Rear brake is full floating but still chatters if used hard.



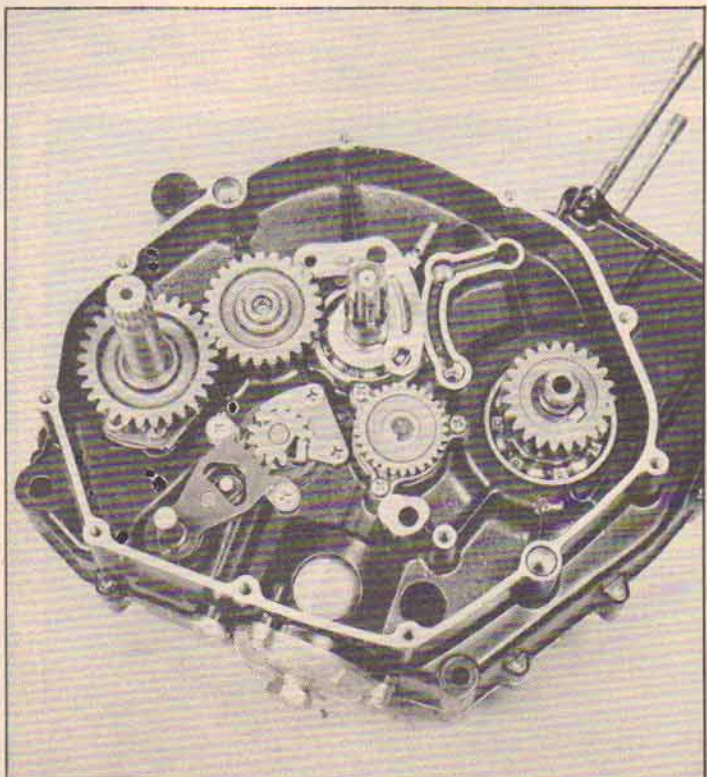
The bottom rod pin is large and could easily be moved outward to increase the stroke.



Two-valve head has room for larger valves.



The single-overhead cam doesn't use bearings. A large volume of oil is fed to it at a low 7 psi. A cup is cast in the head below the cam lobe area, so oil is always present at the critical point.



Shifting mechanism is simple and compact (lower center). Oil passages may be inspected by removing a steel inspection plate (top center).





ing. No doubt this is one of the reasons for not having yards of wheel travel. The seating position seems a little odd after riding an Mxer though. The distance from seat top to footpeg is shallow and the handlebars feel too high. But after a couple of hours in the saddle most riders adapted to everything except the high bars.

Shifting the DR is a pleasure and the gear ratios are perfectly matched to the engine's output. Neutral is easy to find with the motor running and the machine is generally non-fussy.

The DR has a good balance to it. The front end is lighter than most four-stroke Singles and long controlled wheelies are possible without the machine wanting to fall sideways. The bike mostly goes where it is pointed and doesn't pick lines for the rider. It handles well at moderate speeds but runs out of suspension travel if rough ground is covered at speed. It jumps through the air straight and predictably without frightening the rider. General frame geometry is excellent.

It isn't a welterweight by any standards,

but it isn't overly heavy either. The DR is the off-road-only version. (A street-legal SR model is also available but weighs another 10 lb.) At 270 lb. with half a tank of fuel, it's lighter than the Yamaha TT500 and the Kawasaki KL250 and Honda XL250. Serious owners could pare this down by fitting a plastic rear fender and tank, an aftermarket (but still quiet, please) exhaust system and maybe lighter rear shocks.

Most DR buyers will be happy with the bike without changing it much. It handles well on twisty trails, sandwashes and sandy-type roads.

Our only serious complaint was a clunking noise in the forks and a tendency for them to bottom instantly or, any square ledge, etc. over 2 in. in height. They worked smoothly through dips and gulleys but not when encountering anything square. We drained the fork oil and replaced it with Bel-Ray 20W fork oil, which helped, but the clunking was still present. We disassembled the forks to see if anything was wrong. No broken parts or apparent me-

chanical problem existed. A close inspection of the damper rods leads one to believe that too little compression damping is present. Also the damper rod has an open top, which allows the fork oil to be thrown up into the top of the fork tube, where the spring slows its return to the bottom of the lower leg. On rough ground the oil is pumped above the damper rod and not enough oil is left in the bottom. This causes the clunking noises and lets the forks instantly bottom when anything sharp is encountered with the front wheel. This is a serious flaw that shouldn't exist on a modern dirt-oriented machine. Suzuki builds some fine MX forks, so we know they know how to do it right.

The way Suzuki updates their bikes, this problem may be fixed by the time you read this. Like most new models the DR has a few rough spots. Even so, it is a good playbike and has potential as a serious off-road mount, if the buyer is willing to spend enough money and time. >



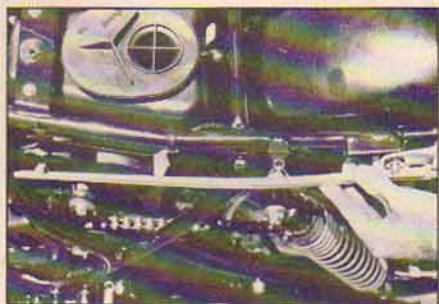
# SUZUKI DR370



Controlled jumps can be smoothly executed on the DR.

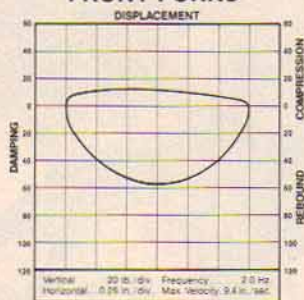


Front brake is excellent. Forks are less than excellent.



Plastic pieces under the seat snap into place.

## FRONT FORKS

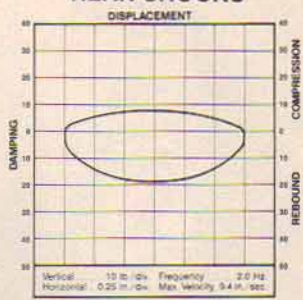


Kayaba leading-axle fork

Fork travel	7.3 in.
Engagement	5.7 in.
Spring rate	18/32 lb./in.
Compression damping force	8 lb.
Rebound damping force	18 lb.
Static seal friction	7 lb.
Stanchion tube diameter	36mm

On the dyno, the DR's forks had the right measurements, but bottomed easily as if compression damping was non-existent. The lack of a damper-rod "top hat" allows excess oil to accumulate in the stanchion tube, starving the damper assembly. A deflector, similar to a '74 Husky unit, should be installed.

## REAR SHOCKS



Kayaba shock, non-rebuildable

Shock travel	4.3 in.
Wheel travel	5.8 in.
Spring rate	60/88 lb./in.
Compression damping force	12 lb.
Rebound damping force	57 lb.

The DR's rear suspension is too soft for the bike's potential. At maximum preload, the springs are adequate, but insufficient and quickly-fading damping rates provide marginal wheel control. Installation of a different set of shocks would be beneficial for faster riders.

Tests performed at Number 1 Products

## SPECIFICATIONS

List price	\$1319
Suspension, front	telescopic fork
Suspension, rear	swing arm
Tire, front	3.00-21
Tire, rear	4.00-18
Engine	sohc four-stroke Single
Bore x stroke	85 x 65.2mm
Piston displacement	370cc
Compression ratio	8.7:1
Claimed power	na
Claimed torque	na
Carburetion	32mm Mikuni
Ignition	magneto/points
Lubrication system	wet sump
Oil capacity (transmission)	3.4 pt.
Fuel capacity	2.2 gal.
Recommended fuel	premium
Starting system	primary kick
Air filtration	oiled foam

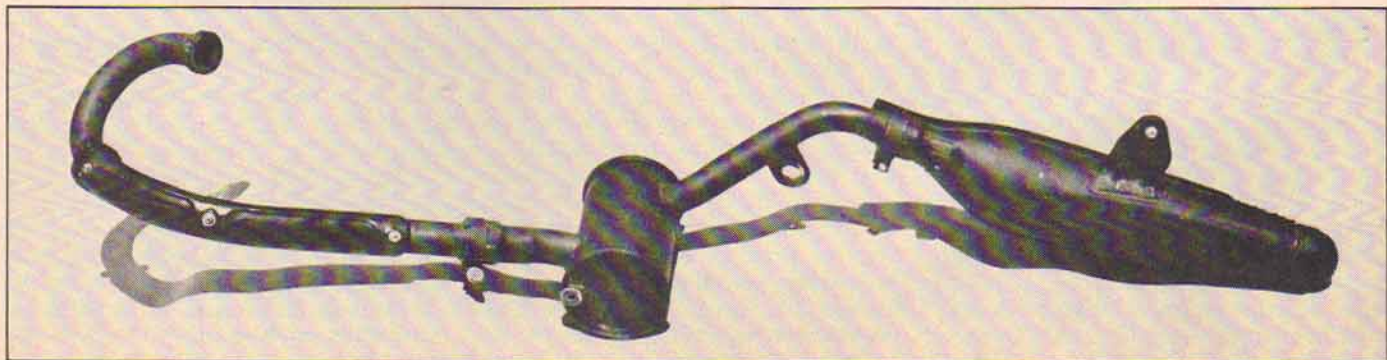
Primary drive	helical gear
Final drive	≠ 520 chain
Gear Ratios, overall:1	
5th	6.97
4th	8.53
3rd	11.03
2nd	14.92
1st	22.47

## DIMENSIONS

Wheelbase	55.7 in.
Seat height	33.4 in.
Seat width	8.0 in.
Handlebar width	32.7 in.
Footpeg height	12.1 in.
Ground clearance	9.5 in.
Front fork rake angle	31 deg.
Trail	5.6 in.
Curb weight (w/ half-tank fuel)	270 lb.
Weight bias, front/rear, percent	42.5/57.5

## POWER TRANSMISSION

Clutch	multi-disc, wet
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Although heavy looking, the DR's complete exhaust system including bolts, weighed only 12 lb.