

 **YAMAHA** *Trial*
TY250



TY250



Working directly with YAMAHA in Japan, Mick Andrews helped developed the new Trials TY250 calling upon and utilizing his experiences as the European Trails champion for both 1971 and 1972. The assistance Mick gave is invaluable with regard to machine power-to-weight characteristics, overall slim design and the special considerations given the flywheel and crankshaft mass to yield a top performer for trials.

Chain Tensioner and Oiler

The tensioner on the chain serves to maintain a more uniform strain on the links. This is essential in trials riding due to the sudden change in torque requirements which arise. The rear swing arm is utilized as a small oil reservoir which drips oil on the chain while riding, increasing the lubrication characteristics and lengthening the serviceable life of the chain.



Rear Shocks

The single-spring, hydraulic rear shocks are adjustable on the TY250 so that the rider, with a little experimentation, can fit his machine more exactly to the type of section he is about to ride. These shocks are noted for their durability and comfort characteristics, and make the TY250 ideal as a trials machine.



Frame

The frame for the TY250 is an extra-special diamond type which has been constructed of slim, high-tensile-strength tubing to offer a more dynamic ability to withstand stresses and strains encountered from the roughest sections imaginable.



Skid Plate

The under side of the engine is fitted with a skid plate for protection against rocks and sudden shocks which occur when trials riding. This skid plate is constructed using a special carbon-fiber-reinforced plastic. This material is noted for its durability in that it is lighter than aluminum, yet stronger than steel.



Front Forks

The front-fork design is one which allows a maximum amount of cushioning up front when riding over logs or rocks. The amount of travel has been selected to offer the most control, maneuverability and riding comfort.



Brakes

The brakes are waterproof and dustproof so the bike can be ridden anywhere with the assurance of absolute safety. Also, they are fade-free and, therefore, will not fail when actuated repeatedly. The brakes are rugged, but lightweight, and due to the magnesium die-cast construction, are able to withstand impacts from rocks and other obstacles along the section.



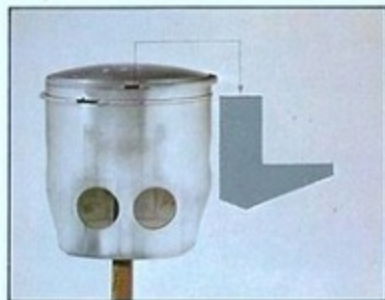
Torque Induction

To answer the requirement for an engine which would not be designed around some fixed port-timing point, but would, on the other hand, have the advantage of the best intake operation under any and all conditions, the YAMAHA Technical Group developed Torque Induction featuring a reed-valve intake. The system positively operates dependent upon pressure changes within the crankcase, thereby yielding an intake function which is mechanically independent and, therefore, able to respond quickly and more precisely across the entire range of riding requirements.



Autolube

A first on any trials bike; automatic oil and gas mixing. The YAMAHA-developed Autolube system continuously monitors the engine speed and throttle opening to supply precisely the right amount of oil to be mixed with the gasoline for all operating conditions. With this system, the engine is cleaner burning and longer lasting.



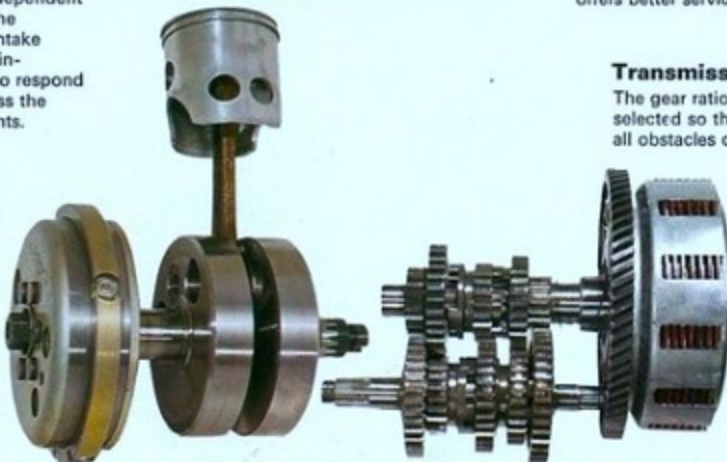
L-Type Keystone Ring

An L-type keystone ring is used on the piston of the TY250 because it yields better sealing characteristics. When the engine of the trials machine is operated hard at low speeds, the engine tends to become very hot causing expansion to occur thereby reducing compression. Even under extreme riding conditions, the L-type keystone ring offers better service.

Flywheel and Magneto

The mass of the flywheel and magneto are carefully selected in any engine to obtain a smoother operation eliminating the pulsing associated with the combustion stroke.

In the TY 250, this mass is super critical in that it must maintain a dead-smooth operation even at ultra-low speeds yet light enough to respond to the throttle instantly.



Transmission

The gear ratios have been especially selected so that all trials sections and all obstacles can be overcome.

This is accomplished by maintaining speed-power ranges that comfortably overlap reducing the rigor of riding. This 5-speed transmission utilizes 1, 2, and sometimes 3 for the sections and 4 and 5 for open-road riding or for travelling in between sections.