



ENGINE DATA

4 – STROKE MOTORCYCLES ENGINES

Types ROTAX:- 348, 504 Mil., 504, 504 Flat Track, 506, 550, 560, 604 Flat Track

Description Single cylinder 4-stroke motorcycle engine, air-cooled,
Single overhead camshaft, timing belt driven with integrated 5-
speed transmission, with or without balance shaft.

Type 348 504Mil 504 504FT 506 550 560 560FT 604FT

Bore, mm	79.5	89	89	89	89	94	94	94	96.75
Stroke, mm	70.4	77.4	79.4	79.4	81	79.4	81	81	81
Displacement cm ³	349	481.3	494	494	504	551	562	562	595.5
Compression Ratio	9.6	8.2	9.2	10.5	9.8	9.2	9.6	10.5	11.2
Performance HP approx.	30	28	37	54	40	42	46	55	56
@ R.P.M.	7.500	5.000	7.000	8.000	7.300	7.300	7.300	7.600	7.600
Max. torque Nm.	29	36	42	52	42	46.5	48	55	58
	Performance indications are approximate, depending on engine tuning and fuel quality.								

Lubrication Dry-sump lubrication
Cylinder head Monoblock design, camshaft on ball bearings, rocker arms with
rollers, forked inlet port and two separate exhaust ports.

Cylinder Light alloy cylinder with cast iron sleeve.

Ignition Capacitor discharge ignition, fully electronic, with timing
advance.

Generator 3 – phase A C flywheel generator, 12 volts / 190 watts



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Starter	Kickstarter, optional also electric starter
Clutch	Multiplate clutch in oil bath
Carburettor	Optional BING, MIKUNI or DELLORTO 28 – 40mm
Fuel	Regular (88 ROZ) or Premium (98 ROZ) gasoline. Depending on tuning
Transmission	Integrated 5 or 6 speed transmission, constant mesh with dogs, Left side shift lever

Transmission	Type 348 (not Mil)	Type 504 - 604
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	Primary	$76 / 32 = 2.375$	$76 / 32 = 2.375$
	1 st speed	$34 / 10 = 3.400$	$32 / 11 = 2.909$
	2 nd speed	$30 / 10 = 2.308$	$24 / 12 = 2.000$
	3 rd speed	$27 / 16 = 1.688$	$21 / 15 = 1.400$
	4 th speed	$25 / 19 = 1.316$	$19 / 17 = 1.118$
	5 th speed	$23 / 21 = 1.952$	$21 / 23 = 0.913$
	6 th speed	$21 / 22 = 0.955$	--

Total ratio	1 st speed	8.075	6.909
	2 nd speed	5.481	4.750
	3 rd speed	4.008	3.325
	4 th speed	3.125	2.654
	5 th speed	2.601	2.168
	6 th speed	2.267	--
Weight	43kg		

Lubrication

The engine is designed for dry sump lubrication.

The oil is circulated by a double trochoid pump (pressure and scavenging pump).
In the main circuit after the pump there is a paper element oil filter with integrated bypass-valve which opens when the filter is blocked.
For fine cleaning there is a centrifugal separator in the crankshaft.

The paper filter is accessible by unscrewing the oil filter cover, which is in the magneto side crankcase half.

Pump capacity: approx. 5 litres/min at Nm = 8000 l/min.

Oil pressure

At warm engine (dry sump temperature approx 80deg C) 0.5 bar pressure @ 5000 rpm, measured at the connecting nipple NPT 1/8" on the oil filter cover.

Oil quality

Castrol GTX2 15w/50 HD or similar high quality brand oil.

Oil to be changed every 2.500km

Oil filter to be changed every 2.500km

Cleaning of the centrifugal separator in the crankshaft at every engine 'strip-down'.

Origin July 1987 E & OE..... EP/Mo/FS

For information only.....