

YANAHA YZ250B OWNER'S MANUAL YZ360B 1975

NOTICE

Yamaha Motor Company is confident you will enjoy your new Yamaha to the utmost. We have made every effort to provide you with a safe, wellengineered and constructed product.

This Owner's Service Manual will acquaint you with several features and maintenance procedures concerning your Yamaha. However, if you are unfamiliar with the product, or the features or procedures outlined within this manual, we strongly urge you to consult your Authorized Yamaha Dealer for additional information.



YZ250B-360B OWNER'S SERVICE MANUAL

1st Edition, February 1974 2nd Printing, July 1978

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LIT-11624-83-00

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FOREWORD

Yamaha's YZ250B and 360B are completely new models designed solely for the rigors of Motocross competition. Production is limited. Each unit is assembled and checked according to the same rigorous principles as our championship road racing models.

This Owner's Service Manual is included to provide basic information for operation and maintenance. Additional information regarding major repairs, such as crankcase disassembly, can be found within the DT250A/ 360A Service Manuals and various other information and training manuals available from your Authorized Yamaha.

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YAMAHA MOTOR COMPANY., LTD. SERVICE DEPARTMENT INTERNATIONAL DIVISION IWATA, JAPAN

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SECTION A. MACHINE IDENTIFICATION

1. FRAME SERIAL NUMBER

The frame serial number is located on the right-hand side of the headstock assembly. The first three digits identify the model. This is followed by a dash. The remaining digits identify the production number of the unit. Yamaha production begins -000101. Normally, both serial numbers are identical; however, on occasion they may be two or three numbers off.





2. ENGINE SERIAL NUMBER

The engine serial number is located on a raised boss on the upper rear, left-hand side of the engine on the YZ250B/360B. Engine identification folloows the same code as frame identification.



Always check your registration papers against the actual machine serial numbers. If any discrepancy is found, have it corrected immediately.

SECTION B. GENERAL SPECIFICATIONS

These specifications are for general use. For a more complete list, refer to Maintenance Specifications and/or the Service Manuals.

	YZ360B	YZ250B
DIMENSIONS/WEIGHT		
OVERALL LENGTH OVERALL WIDTH OVERALL HEIGHT WHEE LBASE MINIMUM GROUND CLEARANCE SEAT HEIGHT (UN LOADED) MACHINE NET WEIGHT	83.27 ins. (2115 mm.) 38.78 ins. (985 mm.) 45.87 ins. (1165 mm.) 56.10 ins. (1425 mm.) 9.45 ins. (240 mm.) 33.86 ins. (860 mm.) 216 lbs. (98 kgs.)	83.27 ins. (2115 mm.) 38.78 ins. (985 mm.) 45.87 ins. (1165 mm.) 56.10 ins. (1425 mm.) 9.45 ins. (240 mm.) 33.86 ins. (860 mm.) 213.89 lbs. (97 kgs.)
ENGINE TYPE BORE/STROKE DISPLACEMENT COMPRESSION RATIO STARTING SYSTEM LUBRICATING SYSTEM	Air cooled, 2-stroke, single 3.150x2.756ins.(80x70mm.) 21.4 cu.in, (351 c.c.) 7.0 : 1 Kick Starter Mixed Gas 15:1	Air cooled, 2-stroke, single 2.756x2.520ins.(70x64mm.) 15.01 cu.in. (246 c.c.) 7.8 : 1 Kick Starter Mixed Gas 15:1
CARBURETION MANUFACTURER/TYPE EFFECTIVE VENTURI SIZE MAIN JET NEEDLE JET	MIKUNI VM 34 SC 1.339 ins. (34mm.) #380 P-8	MIKUNI VM 34 SC 1.339 ins. (34mm.) #350 P-8

(continued)

GENERAL SPECIFICATIONS

	YZ360E	3	YZ25	OB
JET NEEDLE	6F15-2		6F15-2	
PILOT JET	#50		#70	
AIR SCREW (TURNS OUT)	1 1%	1%		
CUT AWAY	3.5		3.5	
AIR CLEANER TYPE	Wet Foam	Wet Foam		
CLUTCH				
ТҮРЕ	Wet Multiple Di	sc	Wet Multiple	Disc
PRIMARY DRIVE SYSTEM	Spur Gear		Spur Gear	
PRIMARY DRIVE RATIO	74/24	3.083	74/24	3.083
TRANSMISSION				
ТҮРЕ				
REDUCTION RATIO 1st	33/18	1.833	33/18	1.833
2nd	31/22	1.409	31/22	1.409
3rd	28/24	1.166	28/24	1.166
4th	26/26	1.000	26/26	1.000
5th	24/28	0.857	24/28	0.857
SECONDARY DRIVE				
DRIVE/DRIVEN SPROCKET	15/48		13/50	
TYPE/SIZE	Chain DK 520/	104L	Chain DK 520/106L	
REDUCTION RATIO	3.200	3.200		
ELECTRICAL				
IGNITION TYPE	CDI Magneto 6	5V	CDI Magnet	10 6V
6011	Hitachi CM61-	Hitachi CM61-20M		61-20M

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GENERAL SPECIFICATIONS

	YZ360B	YZ250B
CHASSIS		
FRAME TYPE	Tube-double cradle	Tube double cradle
FRONT SUSPENSION/TRAVEL	7.618 ins. (193.5mm.)	7.618 ins. (193.5mm.)
REAR SUSPENSION/TRAVEL	3.543 ins. (90.0 mm.)	3.543 ins. (90.0 mm.)
STEERING LOCK-TO-LOCK (DEGREES)	59°/5.47 ins. (139 mm.)	59°/5.47 ins. (139 mm.)
CASTER/TRAIL	60°/5.08 ins. (129mm.)	60°/5.08 ins. (129mm.)
FRONT TIRE MFR./SIZE	3.00-21 - 4PR	3.00-21 - 4PR
THREAD TYPE	Full Knobby	Full Knobby
NOMINAL PRESSURE (PSI)	13	13
REAR TIRE MFR./SIZE	4.60-18 - 4PR	4.00-18 - 4PR
THREAD TYPE	Full Knobby	Full Knobby
NOMINAL PRESSURE (PSI)	15	15
FRONT BRAKE TYPE	Drum	Drum
ACTUATING METHOD	Cable	Cable
REAR BRAKE TYPE	Drum	Drum
ACTUATING METHOD	Link-Rod	Link-Rod
VOLUMES/TYPE FLUID		
GASOLINE TANK/TYPE (RATIO)	1.8 gal. Premium (15 : 1)	1.8 gal. Premium (15 : 1)
TRANSMISSION/TYPE	1000 c.c. (SAE 10W30)	1000 c c (SAF 10W30)
FRONT FORK (EACH)/TYPE	194 c.c. 10,20,30wt Fork Oil	194c.c. 10,20,30 wt Fork Oil

NOTE: The Research and Engineering Departments of Yamaha are continually striving to further perfect all models. Improvements and modifications are therefore inevitable.

In light of this fact, the foregoing specifications are subject to change without notice to the owner. Information regarding changes is forwarded to all Authorized Yamaha Dealers as soon as available. If a descrepancy is noted, please consult your dealer.

SECTION C. MAINTENANCE SPECIFICATIONS

	YZ360B	YZ250B
CDI IGNITION		
SECONDARY IGNITION COIL RESISTANCE (PRIMARY)	0.61Ω±10%/20°C	0.61Ω±10%/20°C
SECONDARY IGNITION COIL RESISTANCE (SECONDARY)	6.0KΩ±20%/20°C	6.0KΩ±20%/20°C
IGNITION TIMING	2.3±0.15mm. B.T.D.C.	2.3±0.15mm. B.T.D.C.
SPARK PLUG CONSTANT HI-SPEED NORMAL	NGK B9EV NGK B8EV	NGK B9EV NGK B8EV
SPARK PLUG GAP	0.016-0.020 ins. (0.4-0.5mm.)	0.016-0.020 ins. (0.4-0.5mm.)
ENGINE – TOP END		
PISTON CLEARANCE	0.0016-0.002 ins. (0.040-0.050mm.)	0.0016–0.002 ins. (0.040–0.050mm.)
PISTON WEAR LIMIT	0.004 ins. (0.1mm.)	0.004 ins. (0.1mm.)'
RING END GAP (FREE)	0.610 ins. (15.5mm.)	0.374 ins. (9.5mm.)
RING END GAP (INSTALLED)	0.016–0.020 ins. (0.4–0.5mm.)	0.016–0.020 ins. (0.4–0.5mm.)
CONNECTING ROD	0.031-0.079 ins. (0.8-2mm.)	0.031-0.079 ins. (0.8-2mm.)
CONNECTING ROD/CRANK SIDE CLEARANCE	0.016-0.020 ins. (0.4-0.5mm.)	0.016-0.020 ins. (0.4-0.5mm.)
ENGINE – CLUTCH		
FRICTION PLATE THICKNESS	0.118 ins. (3mm.)	0.118 ins. (3mm.)
CLUTCH PLATE WARP ALLOWANCE	None	None
CLUTCH SPRING FREE LENGTH	1.280 ins. (32.5mm.)	1.280 ins. (32.5mm.)

(continued)



INTENANCE SPECIFICATIONS	YZ360B	YZ250B
CHASSIS		
FRONT BRAKE SHOE DIAMETER	5,118 ins. (130mm.)	5.118 ins. (130mm.)
FRONT BRAKE SHOE REPLACEMENT LIMIT	0.079 ins. (2mm.)	0.079 ins. (2mm.)
REAR BRAKE SHOE DIAMETER	6.299 ins. (160mm.)	6.299 ins. (160mm.)
REAR BRAKE SHOE REPLACEMENT LIMIT	0.079 ins. (2mm.)	0.079 ins. (2mm.)
WHEEL RUN-OUT LIMITS	0.079 ins. (2mm.)	0.079 ins. (2mm.)
WHEEL RUN-OUT LIMITS	0.079 ins. (2mm.)	0.079 ins. (2mm.)
FRONT FORK SPRING FREE LENGTH	19.65 ins. (499mm.)	19.65 ins. (499mm.)
REAR SHOCK SPRING FREE LENGTH	8.229 ins. (20 9 mm.)	8.229 ins. (209 mm.)
TORQUE VALUES		
(Also see Torque Chart — page 7.)		
CYLINDER HEAD BOLT (8mm.)	14.5 ft-lbs. (2 m-kgs.)	14.5 ft-lbs. (2 m-kgs.)
CYLINDER HEAD BOLT (10mm.)	25.3 ft-lbs. (3.5 m-kgs.)	25.3 ft-lbs. (3.5 m-kgs.)
FORK TUBE PINCH BOLT	14.5 ft-1bs. (2 m-kas.)	14.5 ft-lbs. (2 m-kgs.)
STEM PINCH BOLT	14.5 ft-lbs. (2 m-kas)	14.5 ft-lbs (2 m-kas)
STEM BOLT	(10) (10) (10) (g3.)	
REAR AXLE SECURING NUT	40-50 ft. (bs. (5.5-6.9 m. k. s.)	40-50 ft. lbs (5.5-6.9 m-kas)
DRIVE SPROCKET SECURING NUT	42-51 ft·lbs. (5.8-7.0 m-kgs.)	42-51 ft-lbs. (5.8-7,0 m-kgs.)
DRIVEN SPROCKET SECURING BOLT	14.5 ft-lbs. (2 m-kgs.)	14.5 ft-lbs. (2 m-kgs.)
SPARK PLUG	19.5 ^{-21.0ft} ·lbs.(2.72.9m-k gs .)	19.5_21.0ft-lbs.(2.7-2.9m·kgs.

SECTION D. TORQUE CHART

The chart covers those stud/bolt sizes with standard I.S.O. pitch threads. Torque specifications for components with thread pitches other than standard are given within the applicable chapter.



Torque specifications are for dry, clean threads. Components such as the cylinder or cylinder head should be at room temperature prior to torquing. A cylinder head or any other item with several fasteners should be torqued down in a cross-hatch pattern in successive stages until torque specification is reached. The method is similar to installing an automobile wheel and will avoid warping the component.

А	В	TORQUE SPECIFICATION				
(NUT)	(BOLT)	m-kgs.	ft-lbs.	in-lbs.		
10mm.	6mm.	1.0	7.2	85		
13mm <u>.</u>	8mm.	2.0	14.5	175		
14mm,	8mm.	2.0	14.5	175		
17mm.	10mm.	3.5 - 4.0	25 - 29	305 - 350		
19mm.	12mm.	4.0 - 4.5	29 - 33	350 - 390		
22mm.	14mm.	4.5 - 5.0	33 - 36	390 - 435		
26mm.	17mm.	5.8 - 7.0	42 - 51	505 - 610		
27mm.	18mm.	5.8 - 7.0	42 - 51	505 - 610		
30mm.	20mm.	7.0 - 8.3	51 - 60	610 - 720		
SPARK	PLUG	2.7 - 2.9	19 - 21	235 - 250		

SECTION E. MAINTENANCE AND LUBRICATION SCHEDULE

The maintenance and lubrication schedule chart should be considered strictly as a guide to general maintenance and lubrication intervals. You must take into consideration that weather, terrain, geographical locations, and a variety of individual uses all tend to demand that each owner alter this time schedule to match his environment. For example, if the motorcycle is continually operated in an area of high humidity, then all parts must be lubricated much more frequently than shown on the chart to avoid rust and damage. If you are in doubt as to how closely you can follow these time recommendations, check with the YAMAHA dealer in your area.

MAINTENANCE AND LUBRICATION SCHEDULE CHART – NOTES

No. (1) At ambient temperatures of 45–90°F, use 10W/30 "SE". Do not use "additives" in oil.

- No. (2) Use 10W/30 "SE" motor oil. (If desired, specialty type lubricants of quality manufacture may be used.)
- No. (3) Use graphite base type (specialty types available use name-brand, quality manufacturer).
- No. (4) Light duty: smooth, light-weight, "white" grease. Heavy duty: standard 90wt. lube grease (do not use lube grease on throttle/housing).
- No. (5) Use standard 90wt. lube grease smooth, not coarse.
- No. (6) Medium-weight wheel bearing grease of quality manufacturer preferably waterproof.
- No. (7) Light-weight machine oil.
- No. (8) Air filters foam element air filters must be damp with oil at all times to function properly. Clean and lube every meet. If hard usage, clean and lube every heat (MOTO). Do not over-oil. Use SAE 10W/30 "SE".
- No. (9) Use $10 \sim 30W$ fork oil (non-foaming hydraulic fluid).

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		RACE/MEET INTERVAL					
						EVERY	
		EVERY	EVERY	EVERY	EVERY	6 MONTHS	AS
PAGE	ITEM	MEET	SECOND	THIRD	HEAT (MOTO)	OF RACING	REQUIRED
	PISTON						
57~59	 Inspect 	x					
	Clean	х					
	Replace						×
	PISTON RINGS						
60	Replace	x					
	CYLINDER						
56~57	 Inspect (Compression Check) 	x					
	• Clean	×					
	Replace						×
	Check head bolt torque				×		
	CLUTCH						
26~28	 Adjust 	x					
69~74	Replace (Plates)						x
	TRANSMISSION						
81~90	Change Oil		X(1)				
76~81	 Inspect gears 					×	
	Replace bearings					×	
	 Inspect shift forks 					×	
	ENGINE MAIN BEARINGS						
	Replace					×	

(continued)

				RAC	E/MEET INTER	VAL	E.
PAGE	ITEM	EVERY MEET	EVERY SECOND	EVERY THIRD	EVERY HEAT (MOTO)	EVERY 6 MONTHS OF RACING	AS REQUIRED
61~62	CONNECTING ROD • Check bearings • Replace big end bearing • Replace small end bearing CARBURETOR	, x				×	x
29~32	Check/Adjust/Tighten	×					
39~48	Clean & Inspect	×					
	PISTON PIN						
	• Inspect	×					
	Replace						×
	EXHAUST SYSTEM						
	• Inspect	×					
	FLYWHEELNUT		1				
	Torque	×					
	KICK STARTER						
69~70	Inspect idler gear	1				×	
	Replace						×
	FRAME		1				
	Clean & Inspect	×					
	SWING ARM						
101	Check	×					
	Lubricate			X(5)			

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		RACE/MEET INTERVAL					
		nd house				EVERY	
0.05	200 CT	EVERY	EVERY	EVERY	EVERY	6 MONTHS	AS
PAGE	ITEM	MEET	SECOND	THIRD	HEAT (MOTO)	OF RACING	REQUIRED
	CONTROLS & CABLES						
25	Check & Adjust	×					
	Lubricate	X(3)					
	BRAKES						
25~26	Clean/Check/Adjust	×	1				
90~91	Replace						×
	WHEELS AND TIRES	1					
92	Check pressure	x					
	Check runout	×					
1	Check spoke tension	1			×		
1	Check bearings	×					
	Replace bearing						×
	STEERING HEAD						
95~96	• Check	×					
	Clean and repack			X(6)			
	CDI WIRING						
66~68	Check connections	×					
	AIR FILTER						
35~38	Clean and oil	X(8)					
	Replace						×

(continued)

		RACE/MEET INTERVAL					
PAGE	ITEM	EVERY MEET	EVERY SECOND	EVERY THIRD	EVERY HEAT (MOTO)	EVERY 6 MONTHS OF RACING	AS REQUIRED
32~33	SPARK PLUG • Replace DRIVE CHAIN				×		
91~97	 Clean & lubricate Check tension and alignment Replace 				X (2) X		
	FITTINGS AND FASTENERS Tighten	×					×
	 FUEL TANK Clean/Flush Clean petcock filter 	×					
108~110	SHOCK ABSORBERS • Drain & refil}			X(2)			
105~106	 FRONT FORKS Drain & refill Replace seals 			X(9)			x
	CLUTCH AND BRAKE SHAFTS • Lubricate	X(4)					

Note;

When replacing the oil or gas in the shockabsorber, consult more nearest Authorized Yamaha Dealer.

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SECTION F. SPECIAL TOOLS

The maintenance procedures outlined within this manual require special tools and instruments. A comprehensive list of the special tools is given below.

- *1. Outside Micrometer (75–100mm.)
- *2. Outside Micrometer (50–75mm.)
- *3. Vernier Calipers (0-150mm.)
- *4. Dial Gauge (mm.)
- *5. Dial Gauge Stand
- *6. Cylinder Gauge (50–100mm.)
- 7. Spark Plug Gapping Tool and Gauge
- 8. Feeler Gauge Set
- 9. Torque Wrench (0-10 m-kgs. or 0-600 in-lbs.)
- *10. Clutch Holding Tool (DT1)
- *11. Rotor Puller
 - 12. Measuring cup (0-250c.c., 10c.c. increments)

NOTE

Those items marked with an asterisk (*) available from Yamaha.





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CHAPTER II. BASIC INSTRUCTIONS

SECTION A. CONTROL FUNCTIONS

1. KILL BUTTON

The kill button is located on the left handlebar. Push and hold for ignition off.



2. FUEL TANK AND PETCOCK

The fuel tank incorporates a threaded plastic filler cap. The cap has a vent tube which is routed to the front of the tank and down alongside a frame down tube.



The fuel tank petcock is located on the rear leftside of the fuel tank. Turn the petcock lever to the vertical position and fuel will flow to the carburetor. Turn lever to the horizontal position to shut off fuel supply to the carburetor.



3. FRONT BRAKE LEVER

Located on the right handlebar. The front brake lever actuates the single leading-shoe front brake when brake lever is squeezed.



4. REAR BRAKE PEDAL

Located directly in front of the right-hand rider's foot rest. The rear brake pedal actuates the single leading-shoe rear brake when the pedal is depressed.



5. CLUTCH LEVER

Located on the left handlebar. The clutch lever will disengage the wet-type, multi-plate clutch when the lever is squeezed.



6. THROTTLE

The throttle is the positive-return type, and is located on the right handlebar.



7. KICK CRANK

The kick starter crank is located on the right, rear side of the engine. Rotate the crank out, press your foot upon it firmly, push down until the gears engage the primary drive train and kick briskly to start the engine. Fold the crank in after engine starts.



8. SHIFT LEVER

The transmission shift lever is located on the lefthand side of the machine directly in front of the rider's foot rest. The shift mechanism is of the ratcheting type and controls gear selection for the 5-speed transmission.



9. CARBURETOR STARTER JET

The carburetor starter jet is located on the right side of the carburetor assembly. The jet is designed to supply an extra-rich fuel/air mixture for cold engine starts. It is actuated by a knurled shaft on the YZ250B/360B. Pull up and rotate to open the jet.



SECTION B. FUEL AND OIL

1. FUEL

Use premium gasoline with an octane rating of 90+ mixed with oil at a gas/oil ratio of 15:1. Always use fresh, name-brand gasoline.

Always mix a fresh batch of fuel the morning of the race and do not retain a mixed batch overnight.

2. OIL

a. Engine Mixing Oil. We recommend that your first choice be Castrol R30 (vegetable base) oil. If for any reason you should use another type, the oil should meet or exceed BIA certification "TC-W" Check the container top or label for service specification and mixing ratios.

b. Transmission Oil. The transmission filler plug is located above the kick-starter.

Recommended oil: 10W/30 SAE type "SE" namebrand motor oil.



On the bottom of the engine there is a drain plug. Remove it and drain all the oil from the transmission. Reinstall the drain plug (make sure it is tight). Add oil through filler hole.



TRANSMISSION OIL CAPACITY:

YZ250B/360B - 1.1 u.s. qts. (1,000 c.c.)

The transmission should be drained and refilled every second race meet.



Do not add any chemical additives. Transmission oil also lubricates the clutch and additives could cause the clutch to slip. CHAPTER III. OPERATION

- CAUTION -

1. BEFORE RIDING THIS MOTORCYCLE, BECOME THOROUGHLY FAMILIAR WITH ALL OPERATING CONTROLS AND THEIR FUNCTION. CONSULT YOUR YAMAHA DEALER REGARDING ANY CONTROL OR FUNCTION YOU DO NOT THOROUGHLY UNDERSTAND.

2. THIS MODEL IS DESIGNED FOR COMPETITION USE ONLY. IT IS NOT EQUIPPED WITH HIGHWAY APPROVED LIGHTING, MIRRORS, HORN OR DIRECTIONAL SIG-NALS. IN MOST INSTANCES, IT IS ILLEGAL TO RIDE THIS MODEL (EITHER DAY OR NIGHT) ON ANY PUBLIC STREET OR HIGHWAY.

3. OBSERVE THE BREAK-IN PROCEDURES TO PRECLUDE MECHANICAL FAILURES.



SECTION A. PRE-OPERATION CHECK LIST

ITEM	ROUTINE
BRAKES	Check operation/adjustment
CLUTCH	Check operation/lever adjustment
FUEL TANK	Fill with proper fuel/oil mix
TRANSMISSION	Change oil as required
DRIVE CHAIN	Check alignment/adjustment/lubrication
SPARK PLUG	Replace each race (moto)
THROTTLE	Check for proper cable operation
AIR FILTER	Foam type – must be clean and damp with oil always
WHEELS & TIRES	Check pressure/runout/spoke tightness/axle nuts
FITTINGS/FASTENERS	Check all/tighten as necessary

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NOTE

Pre-operation checks should be made each time the machine is used. Such an inspection can be thoroughly accomplished in a very short time and the added safety it assures is more than worth the time involved.

SECTION B. BREAK-IN PROCEDURE

1. Prior to starting, fill tank with a break-in gasoline/oil mixture of 12:1 to 14:1.

2. After fueling and pre-operational checks have been made, refer to Starting and Operation (Section C) and start engine.

3. Allow engine to warm up. Check engine idle speed. Check operating controls and engine "Kill" button operation.

4. Operate machine in lower gears at moderate throttle settings for 3–5 minutes. Check spark plug condition.

5. Allow engine to cool. Repeat procedure, running for 5 minutes. Very briefly, shift to higher gears (4th or 5th) and check full throttle response. Check spark plug condition.

6. Allow engine to cool. Repeat procedure, running for 5 minutes. Full throttle and higher gears may be used, but avoid sustained full throttle operation. Check spark plug condition.

7. Allow engine to cool. Remove top end and inspect. Remove "high" spots on piston with No. 600 grit, wet sandpaper. Clean, and carefully reassemble.

8. Remove break-in fuel/oil mixture from tank. Refill with 15:1 operating fuel/oil mixture. Check entire unit for loose or mis-adjusted fittings/controls/fasteners.

9. Re-start engine and check through entire operating range thoroughly. Stop. Check spark plug condition. Re-start. After 10–15 minutes operation, machine is ready to race.

SECTION C. STARTING AND OPERATION

- CAUTION -

PRIOR TO OPERATING THE MACHINE, PERFORM STEPS LISTED IN PRE-OP-ERATION CHECK LIST.



Observe break-in procedures for initial operation. Agitate machine prior to starting and fuel prior to filling to provide correct mixture. Never leave the fuel in tank for long periods. The fuel/ oil mix will de-nature. Turn fuel petcock lever to open (vertical) position.

1. STARTING COLD

Lift and rotate the starter shaft on the YZ250B/360B models. Keep the throttle completely closed. Engage the kick starter and start the engine.

The kick mechanism is of the primary type. Therefore, the engine may be started in any gear, provided the clutch is disengaged. The engine may be started in neutral with clutch engaged or disengaged.

2. STARTING WITH ENGINE WARM

Do not engage starter jet. Open throttle slightly. Engage the kick starter and start the engine.

3. WARM-UP

Run the engine at idle or slightly higher using the starter jet as required until the engine is warm. This procedure normally takes 1 to 2 minutes. To check, see if the engine responds normally to throttle with starter jet off.

- CAUTION -DO NOT OPERATE ENGINE FOR EX-TENDED WARM-UP PERIODS. 4. SHIFTING

A 5-speed transmission is used. Low gear is at the bottom of the shift pattern; high hear at the top of the shift pattern; neutral is located half-way between first and second positions.

The shift mechanism is of the ratcheting type common to most motorcycles. Allow the lever to return to its "at rest" position prior to selecting another gear. Neutral is selected by pulling up or depressing on the shift lever halfway between first and second gears.



With the engine running in the neutral position, disengage the clutch (pull in clutch lever), press down on the shift lever until low gear is engaged, remove foot from shift lever, increase engine speed slightly, slowly release clutch lever while advancing throttle. Repeat procedure for remaining gears.

CHAPTER IV. MECHANICAL ADJUSTMENTS

SECTION A. BRAKES

1. FRONT BRAKE

Front brake should be adjusted to suit rider preference with a minimum cable slack of 0.2–0.3 ins. (5–8 mm.) play at the brake lever pivot point.



Adjustment is accomplished at one of two places; either the handle lever holder or the front brake hub.

- a. Loosen the adjuster locknut.
- b. Turn the cable length adjuster in or out until adjustment is suitable.
- c. Tighten the adjusting bolt locknut.



2. REAR BRAKE

Adjust rear brake pedal play to suit, providing a minimum of 0.79–1.18 ins. (20–30mm.) freeplay. Turn the adjustment nut on the rear brake ferrule in or out until brake pedal freeplay is suitable.





Rear brake pedal adjustment must be checked anytime chain is adjusted or rear wheel is removed and then reinstalled.





Proper clutch adjustment requires two separate procedures.

1. Loosen cable adjusting screw locknut (at lever).

2. Turn clutch cable adjuster all the way into the lever.



NOTE

The above procedure provides for maximum cable freeplay to allow for proper clutch actuating mechanism adjustment.

3. Loosen adjuster locknut. Back the nut off 2 or 3 turns.

4. Using a Phillips screwdriver, turn adjuster screw in or out until adjust arm (located on top of the engine directly above the adjust screw) is directly in line with the main axle center line.



5. Tighten locknut while holding adjust screw in place.

6. At clutch lever assembly, left handlebar, tur: cable length adjuster in or out until freeplay at lever pivot equals 0.039–0.079 ins. (1–2mm.).



- 7. Tighten adjusting bolt locknut.
- 8. Reinstall the cap cover.

SECTION C. CHAIN

To adjust drive chain, proceed as follows:

1. Loosen ax le securing nut while holding the opposite side with a screwdriver.





2. With rider in position on machine, both wheels on ground, set axle adjusters until there is 0.79– 0.98 ins. (20–25mm.) slack in the drive chain at the bottom of the chain at a point midway between the drive and driven axles.



- 3. Turn adjust bolts both left and right until the adjust marks on the adjusters are aligned with the adjust marks on the swing arm. Tighten locknuts on adjust bolts.
- Tighten the rear axle securing nut. 4.



WHENEVER THE CHAIN IS ADJUSTED AND/OR THE REAR WHEEL IS RE-MOVED, ALWAYS CHECK THE REAR AXLE ALIGNMENT AND BRAKE PEDAL FREEPLAY.

SECTION D. CARBURETOR

Under normal operating conditions, there are only three adjustments to be made to the carburetor.

1. Throttle cable adjustment:

Slide the rubber cover off the top of the carа. buretor.

TORQUE:

YZ250B/360B - 40-50 ft-lbs. (5.5-6.9 m-kqs.)



5. Check brake pedal freeplay. b. Grasp the outer cable housing. Lift it up. Slack should equal 0.039ins.(1mm.)at the adjuster If slack is incorrect, loosen adjusting bolt locknut and turn adjusting bolt in or out as required to achieve correct slack. Tighten the adjusting bolt locknut. Reinstall the cap cover.



- 2. Idle speed and idle air adjustments:
- a. Turn idle air screw in until lightly seated.
- b. Back out 1½ turns.

c. Turn the idle speed adjust screw until idle is at desired rpm.



A locknut is incorporated on the YZ250/ 360B screws for positive retention.



d. Turn the idle air mixture screw in or out until idle speed is at highest r.p.m..

e. Turn the idle speed adjust screw in or out until idle speed is at desired r.p.m..



Idle air mixture and idle speed adjustment screws should be-so adjusted that engine response to throttle changes from idle position is rapid and without hesitation. IDLE AIR SCREW: Back out 11/2 turns.

IDLE SPEED: As desired.

If the engine, when warm, hesitates after adjusting as described, turn the idle air mixture screw in or out in 1/4 turn increments until the problem is eliminated.

SECTION E. SPARK PLUG

The spark plug in your machine indicates how the engine is operating. If the engine is operating correctly, and the machine is being ridden correctly, then the tip of the white insulator around the positive electrode of the spark plug will be a medium to light tan color. If the porcelain "donut" around the positive electrode is a very dark brown or black color, then a plug with a hotter heat range may be required. This situation is quite common during the engine break-in period.

If the insulator tip shows a very light tan or white color or is actually pure white or if the electrodes show signs of melting, then a spark plug with a colder heat range is required. Remember, the insulator area surrounding the positive electrode of the spark plug must be a mediumto-light tan color. If it is not, check carburetion, timing, and ignition adjustments. If the situation persists, consult your Authorized Yamaha Dealer.

Do not attempt to experiment with different heat range spark plugs. This takes an experienced eye to gauge the proper spark plug heat range to use ... and to determine if the spark plug itself is at fault.

FOR CONSTANT HIGH SPEED OPERATION USE: NGK B9 EV. FOR NORMAL OPERATION USE: NGK B8 EV.

SPARK PLUG GAP (All Models):

0.016-0.020 ins. (0.4-0.5mm.)

Engine conditions will cause any spark plug to slowly break down and erode. If erosion begins to increase, or if the electrodes finally become too worn, or if for any reason you believe the spark plug is not functioning correctly, replace it.

When installing the plug, always clean the gasket surface, use a new gasket, wipe off any grime that might be present on the surface of the spark plug, torque the spark plug properly.
SPARK PLUG TORQUE (All Models): 19.5-21.0 ft-lbs. (2.7-2.9 m-kgs.)

The spark plug must be removed and checked prior to using the machine. Check electrode wear, insulator color, and negative to positive electrode gap.

SECTION F. IGNITION TIMING

Ignition timing must be set with a dial indicator (to determine piston position). Proceed as follows:

1. Remove spark plug and screw Dial Gauge Stand into spark plug hole.

2. Insert Dial Gauge Assembly into stand.



3. Remove left engine crankcase cover.



4. Check to see that pulse coil is centered in adjustment slots – Center if required.



5. Rotate rotor until piston is at top-dead center (T.D.C.). Tighten set screw on spark plug stand to secure dial gauge assembly. Set the zero on dial indicator face to line up exactly with dial indicator needle. Rotate flywheel back and forth to be sure that indicator needle does not go past zero.

7. Check to see that the rotor timing mark aligns with the pulse coil timing mark. To adjust, loosen the two pulse coil retaining screws and rotate the pulse coil. Tighten screws.



6. Starting at T.D.C., rotate flywheel clockwise until dial indicator reads approximately 2.3mm. on the YZ250B/360B.

IGNITION TIMING:

YZ250B/360B - 0.091 ins. (2.3mm.) B.T.D.C.

8. Remove dial gauge assembly and stand. Replace spark plug.

SPARK PLUG TORQUE:

19.5-21.0 ft-lbs. (2.7-2.9 m-kgs.)

9. Replace engine crankcase cover.

CHAPTER V. ENGINE MAINTENANCE AND MINOR REPAIRS

The following sections provide information for the disassembly, troubleshooting, and maintenance of various components of the machine. If you do not have the necessary tools and an understanding of the mechanical principles involved, please refrain from attempting repairs. The use of improper tools and/or procedures can cause major damage to units with resultant additional repair costs.

To properly understand the procedures outlined, we suggest you consult the Service Manuals and the various other technical publications produced by Yamaha Motor Company or Yamaha International Corporation.

Finally, we suggest you consult your Yamaha Dealer prior to attempting any repair procedures.

1. AIR FILTER – YZ250B/360B

The air filter is a split-type which can be separated into the two sections, right and left. Therefore, it can be replaced one by one.

a. Remove the screws and number plate.



b. To remove the air filter, first remove the Phillips-head screw from the filter case.



c. Remove the air filter from the filter case.



d. Slip the filter from the wire mesh guide.



2. AIR FILTER CLEANING

a. Wash the element get the chorougary, in solvent.

b. Squeeze the excess solvent out of the element and let dry.

c. Pour a small quantity of 10-30W "SE" motor oil onto the filter element and work thoroughly into the porous foam material.

d. Re-insert the wire mesh filter element guide into the element.

e. Coat the upper and lower edges of the filter element with light grease. This will provide an airtight seal between the filter case cover and filter seat.





In order to function properly, the element must be damp with oil at all times.... but not "dripping" with oil.

f. Reinstall the element assembly and parts removed for access.



Each time filter element maintenance is performed, check the air inlet to the filter case for obstructions. Check the air cleaner joint rubber to the carburetor and manifold fittings for an air-tight seal. Tighten all fittings thoroughly to avoid the possibility of unfiltered air entering the engine.

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- CAUTION -

NEVER OPERATE THE ENGINE WITH THE AIR FILTER ELEMENT REMOVED. THIS WILL ALLOW UNFILTERED AIR TO ENTER CAUSING RAPID WEAR AND POSSIBLE ENGINE DAMAGE. ADDITIONALLY, OPERATION WITH-OUT THE FILTER ELEMENT WILL AFFECT CARBURETOR JETTING WITH SUBSEQUENT POOR PER-FORMANCE AND POSSIBLE ENGINE OVER-HEATING. SECTION B. CARBURETOR AND REED VALVE

1. CARBURETOR

a. Turn fue! petcock !-ver to the "OFF" position.

b. Remove the gasoline tank fuel line from the fitting at the carburetor.

c. Loosen the manifold and inlet joint bands (hose clamps)

NOTE

For carburetor main jet replacement only, follow steps a through c then:

- (1) Rotate carburetor, exposing main jet cover bolt.
- (2) Remove bolt. Main jet is located directly behind bolt.



WARNING

REMOVING THE MAIN JET COVER BOLT WILL ALLOW THE FUEL IN THE FLOAT BOWL TO DRAIN. DO NOT REMOVE IF ENGINE IS HOT. PLACE A RAG UNDER CARBURETOR TO CATCH OVERFLOW. REMOVE BOLT IN WELL-VENTILATED AREA. DO NOT REMOVE NEAR OPEN FLAME. ALWAYS CLEAN AND DRY MACHINE AFTER REASSEMBLY.

(3) Using a 7mm.socket or "Spin-tite," remove the main jet. Change as required. Reinstall cover bolt and reassemble, reversing steps 1 through 3.



YZ250B – #350 MAIN JET:

YZ360B - #380

d. Push the air cleaner joint (hose) off the carburetor inlet.

e. Rotating the carburetor body, work it off the cylinder manifold joint.

f. Noting the presence, location, and routing of all vent and overflow tubes, pull the carburetor toward you.

9. Unscrew the mixing chamber top. Remove the slide and needle assembly.



h. Remove the main jet cover bolt and drain the float bowl fuel into suitable receptacle.

i. Remove the Phillips screws (4) holding float bowl to body. Remove float bowl.



j. Carefully set body aside and inspect each independent float within the float bowl cavity. Note their installation position. The float arm pin must be on the lower side of the float and in, towards the center.



k. Remove each float. If fuel has entered a float, replace it. If a pin is loose or missing, or if the floats are damaged in any fashion, replace them.

1. On the carburetor body, remove the pin securing the float arm. Remove the arm.



m. Remove the inlet needle directly beneath the float arm tang. Inspect the needle and seat for signs of excessive wear or attached foreign particles. Replace as required. Replace inlet needle and inlet valve seat as an assembly.



n. Remove, in order, the following components:
(1) Main Jet and Washer



(2) Pilot Jet



(3) Main Nozzle (push from bottom through venturi).



(4) Throttle Screw (Idle Speed Screw)



(5) Air Adjusting Screw (Idle Mixture Screw)



o. Actuate the Starter Jet control to open the circuit.



p. Wash the carburetor in mild solvent. Wash all associated parts.

NOTE

It is rarely necessary to "boil" the carburetor in a warm or hot carburetor bath. If deposits warrant this procedure, remove the Starter Jet Assembly to avoid damaging the jet's neoprene valve seat.

q. Using high pressure air, blow out all passages and jets.



- CAUTION -

NEVER DIRECT HIGH PRESSURE AIR INTO CARBURETOR WITH FLOAT BOWL INSTALLED. DAMAGE TO FLOATS MAY OCCUR.

r. Reinstall components, with the exception of the float bowl.

s. Check to ensure that the float arm is parallel with the carburetor base.



The float arm should be just resting on, but not depressing, the spring loaded inlet needle.

To correct float arm height, remove the arm and bend the tang a slight amount as required. Both the right and left sides of the float arm should measure identically. Correct as required.

FLOAT ARM HEIGHT: YZ250B/360B – 0.921 ins. (23.4 mm.) Level With Carburetor Base t. Install the float bowl and main jet cover bolt

u. Moving to the machine, push needle out of seat in throttle valve (slide). Inspect for signs of bending, scratches or wear. Replace as required.



v. Check needle clip position. Clip position is counted starting with the first clip groove at the top of the needle.

JET NEEDLE TYPE: YZ250B/360B - 6F15-2

CLIP POSITION:

YZ250B/360B - No.4 Groove

W. Check throttle valve (slide) for signs of wear. Insert into carburetor body and check for free movement. If slide, or body, is out of round causing slide to stick, replace as required.

x. Install throttle valve and needle assembly in carburetor mixing chamber. Tighten mixing chamber top as tight as possible by hand.

- CAUTION -

DO NOT USE PLIERS OR VISE-GRIPS AS THEY MAY DEFORM THE MIXING CHAMBER SHAPE, CAUSING THE THROTTLE VALVE TO STICK DURING OPERATION.

y. Install the mixing chamber top cover and all overflow and vent tubes. Re install carburetor. Check tightness of all fittings. Make sure carburetor is mounted in a level position.



A Motocross machine requires immediate, predictable throttle response over a wide operating range. Cylinder porting, combustion chamber compression, ignition timing, muffler design, and carburetor size and component selection are all balanced to achieve this goal. However, variations in temperature, humidity and altitude, to name a few, will affect carburetion and consequently, engine performance.

The following list gives each of the major components of the carburetor that can be readily changed in order to modify performance if required. If you are unfamiliar with carburetor theory, we suggest you refrain from making changes. Quite often, a performance problem is caused by another related component, such as the exhaust system, ignition timing or combustion chamber compression.



After installation, check throttle cable adjustment and check to ensure that slide is free by turning and releasing throttle.



See MECHANICAL ADJUSTMENTS for additional carburetor adjustments.

IDLE AIR MIXTURE SCREW:

Controls the ratio of air-to-fuel in the idle circuit. Turning the screw in decreases the air supply giving a richer mixture.

OPERATING RANGE MOST AFFECTED BY THIS ADJUSTMENT: ZERO TO 1/8 THROTTLE.

PILOT JET:

Controls the ratio of fuel-to-air in the idle circuit. Changing the jet to one with a higher number supplies more fuel to the circuit giving a richer mixture.

OPERATING RANGE MOST AFFECTED BY THIS JET: ZERO TO 1/8 THROTTLE.

THROTTLE VALVE (Slide):

The throttle valve (slide) has a portion of the base cut away to control air flowing over the main nozzle. A wider angle (more "cutaway") will create a leaner mixture. Throttle valves are numbered according to the angle of the cutaway. The higher the number, the more cutaway, the leaner the mixture.

OPERATING RANGE MOST AFFECTED BY THE THROTTLE VALVE: 1/8 to 1/4 (+) THROTTLE.

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JET NEEDLE:

The jet needle is fitted within the throttle valve. The tapered end of the needle fits into the main nozzle outlet. Raising the needle allows more fuel to flow out of the nozzle outlet giving a richer mixture. There are five circlip grooves at the top of the needle. Moving the needle clip from the first, or top groove, through the fifth, or bottom groove, will give a correspondingly richer mixture.

OPERATING RANGE MOST AFFECTED BY THE JET NEEDLE: 1/4 to 3/4 (+) THROTTLE.

MAIN JET:

The main jet controls overall fuel flow through the main nozzle. Changing the jet to one with a higher number supplies more fuel to the main nozzle giving a richer mixture.

OPERATING RANGE MOST AFFECTED BY THE MAIN JET: 3/4 TO FULL THROTTLE.

NOTE

Excessive changes in main jet size can affect performance at all throttle positions.

- CAUTION -

THE FUEL/AIR MIXTURE RATIO IS A GOVERNING FACTOR UPON EN-GINE OPERATING TEMPERATURE. ANY CARBURETOR CHANGES, WHATSOEVER, MUST BE FOLLOWED BY A THOROUGH SPARK PLUG TEST.

2. REED VALVE

a. With carburetor removed, remove the four (4) bolts holding the intake manifold and reed valve assembly to the cylinder. Remove the reed valve assembly.



b. Inspect reed petals for signs of fatigue cracks. Reed petals should fit flush or nearly flush against neoprene seats. If in doubt as to sealing ability, apply suction to carburetor side of assembly. Leakage should be slight to moderate.



c. If disassembly of the reed valve assembly is required, proceed as follows:

(1) Remove phillips screws (3) securing stopper plate and reed to reed block. Handle reed carefully. Avoid scratches and do not bend. Note from which side of the reed block the reed and stopper plate were removed. Re install on same side.



CARBURETOR

1 - JET, pilot 2 - JET, main 3 - RING 4 - VALVE SEAT ASS'Y 5 - WASHER, valve seat 6 - FLOAT 7 - ARM, float 8 - PIN, float 9 - GASKET, float chamber 10 - PLATE 11 - BODY, float chamber 12 - WASHER, screw plug 13 - PLUG, screw 14 - SCREW, panhead 15 - WASHER, spring 16 - SCREW, throttle 17 - NUT, wire adjusting 18 - SCREW, air adjusting 19 - SPRING, air adjusting 20 - JET, air 21 - NOZZLE, main 22 - VALVE, throttle 23 - NEEDLE 24 - CLIP 25 - SEAT, spring 26 - SPRING, throttle valve 27 - CLIP 28 - TOP, mixing chamber 29 - PACKING 30 - TUBE, guide wire 31 - NUT 32 - SCREW, wire adjusting 33 - PLUNGER, starter 34 - PIN 35 - SPRING, plunger 36 - CAP, plunger 37 - COVER, plunger cap 38 - PLATE

- 39 PIPE, air vent
- 40 PIPE, over flow

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 (2) During reassembly, clean reed block, reed, and stopper plate thoroughly. Apply a holding agent, such as "Lock-Tite," to threads of phillips screws. Tighten each screw gradually to avoid warping. Tighten the screws thoroughly.

-- CAUTION --

DO NOT OVER-TIGHTEN SECURING SCREWS, STOPPER PLATES MAY WARP.

SECURING SCREW TORQUE:

69 in-lbs. (0.8 m-kgs.)



During reassembly, observe the cut in the lower corner of the reed and stopper plate. Use as aid to direction of reed installation. d. During reassembly of the reed value assembly and manifold, install new gaskets and torque the securing bolts gradually and in pattern.



SECTION C. TOP END AND MUFFLER

- 1. MUFFLER AND CYLINDER HEAD REMOVAL (Carburetor Removed)
- a. Remove the two bolts and remove seat.
- b. Remove the securing straps from fuel tank.



c. Lift rear of fuel tank up and pull back to clear frame mounts. Remove tank.



d. Remove the muffler mounting three bolts.







e. Remove coil spring at muffler to cylinder joint and remove muffler.



f. Remove spark plug lead wire. Loosen, but do not remove spark plug.



g. Remove nuts securing cylinder and head, 8 nuts on YZ250B/360B. Remove cylinder head and gasket.



Break each nut loose (1/4 turn) prior to removing.



2. CYLINDER REMOVAL

a. With the piston at top dead center, raise the cylinder until the cylinder skirts clear crankcase. Stuff a clean shop rag into crankcase cavity, around rod, to prevent dirt and other foreign particles from entering. Remove cylinder.



b. Remove the wrist pin clip (1) from the piston. Push the wrist pin out from opposite side. Remove the piston.



NOTE

If the pin hangs up, use a wrist pin puller. Do not pound on pin as damage to rod, piston and bearing will result.

3. EXHAUST PIPE MAINTENANCE

a. Using a rounded scraper, remove excess carbon deposits from manifold area of exhaust pipe. Check muffler gasket condition. The gasket seat is located around the cylinder exhaust port.

b. Carbon deposits within the silencer may be removed by lightly tapping the outer shell with a hammer and then blowing out with compressed air. Heavy wire, such as a coat hanger, may be inserted to break loose deposits. Use care.

c. Reinstall muffler.

- 4. MAINTENANCE CYLINDER HEAD
- a. Remove spark plug.

b. Using a rounded scraper, remove carbon deposits from combustion chamber. Take care to avoid damaging the spark plug threads. Do not use a sharp instrument. Avoid scratching the metal surface.



c. Place the head on a surface plate. There should be no warpage. Correct by re-surfacing. Place 400-600 grit wet emery sandpaper on surface plate and re-surface head using a figure-eight sanding pattern. Rotate head several times to avoid removing too much material from one side.

d. Clean the spark plug gasket mating surface thoroughly.

e. Wash the head in solvent and wipe dry.

f. Install new cylinder head gasket during reassembly.

CYLINDER HEAD BOLT TORQUE: YZ250B/360B: (8mm.bolts) = 14.5 ft-lbs. (2.0 m-kgs.) (10mm.bolts) = 25.3 ft-lbs. (3.5 m-kgs.)

- 5. MAINTENANCE CYLINDER
- a. Remove reed valve assembly.



b. Using a rounded scraper, remove carbon deposits from exhaust port.



c. Remove cylinder base gasket and clean gasket seat on cylinder and crankcase thoroughly.

d. Check cylinder bore. Using a cylinder gauge set to standard bore size, measure the cylinder. Measure at six points; at top, center, and 0.5 ins. from bottom of piston, in line with the wrist pin and at right angle to pin. Compare to piston measurements. If over tolerance, replace piston or cylinder as required.



e. Clean cylinder in solvent, then wash with hot soapy water. Dry. Coat walls with light oil film.

f. During re-assembly, always use a new cylinder base gasket.

6. MAINTENANCE - PISTON

a. Using a rounded scraper, remove carbon deposits from piston crown.





The cylinder bore is chrome plated direct ly to the aluminum cylinder and is nonrepairable. Any scratches or flaking require replacement of the cylinder. b. Break a used piston ring in two. File end square. De-burr edges to avoid scratching ring groove and clean carbon deposits from ring grooves.



c. Using 400-600 grit wet sandpaper, lightly sand score marks and lacquer deposits from sides of piston. Sand in cross-hatch pattern. Do not sand excessively.



d. Wash piston in solvent and wipe dry.

e. Using an outside micrometer, measure piston diameter. The piston is cam-ground and tapered. The only measuring point is at right-angles to the wrist pin holes about 0.5 ins. (12.7mm.) bottom of the piston skarts. Compare piston diameter to cylinder bore measurements (bottom two measurements at right angles to wrist pin line).

Piston maximum diameter subtracted from minimum cylinder diameter gives piston clearance. If beyond tolerance, replace piston or cylinder as required.



NOMINAL PISTON CLEARANCE:

YZ250B/360B - 0.0016-0.0020 ins. (0.040-0.050mm.)

MAXIMUM WEAR LIMIT:

YZ250B/360B - 0.0039 ins. (0.1 mm.)

g. Install new wrist pin circlips and make sure they are fully seated within their grooves.

h. Take care during installation to avoid damaging the piston skirts against the crankcase as the cylinder is installed. Note the arrow on piston dome must face forward.

f. During re-assembly, coat the piston skirt areas liberally with two-stroke oil.





i. Make sure the rings are properly seated as the cylinder is installed.

- 7. MAINTENANCE PISTON RINGS
- a. Remove ring from piston.



b. Measure ring end gap in free position. If beyond tolerance, replace.



RING END GAP, FREE: 0.276 ins. (7mm.)

c. Insert ring into cylinder. Push down approximately 3/4" using piston crown to maintain rightangle to bore. Measure installed end gap. If beyond tolerance, replace.



RING END GAP. INSTALLED: 0.016-0.020 ins. (0.4-0.5mm.) d. Holding cylinder towards light, check for full seating of ring around bore. If not fully seated, check cylinder. If cylinder not out-of-round, replace it.

e. During installation, make sure ring ends are properly fitted around ring locating pin in piston groove. Apply liberal coating of two-stroke oil to ring.



New ring requires break-in. Follow first portion of new machine break-in procedure.

8. MAINTENANCE – WRIST PIN, BEARING AND CONNECTING ROD

a. Check the pin for signs of wear. If any wear is evident, replace pin and bearing.

b. Check the pin and bearing for signs of heat discoloration. If excessive (heavily blued), replace both.

c. Check the bearing cage for excessive wear. Check the rollers for signs of flat spots. If found, replace pin and bearing. d. Apply a light film of oil to pin and bearing surfaces. Install in connecting rod small end. Check for play. There should be no noticeable vertical play. If play exists, check connecting rod small end diameter and wear. Replace pin and bearing or all as required.

e. Mount the dial gauge at right angles to the connecting rod small end holding the bottom of rod toward the dial indicator, rock top of rod and measure axial play.



CONNECTING ROD AXIAL PLAY: 0.031-0.079 ins. (0.8-2.0mm.)

f. Remove the dial gauge and slide the connecting rod to one side. Insert a feeler gauge between the side of the connecting rod big end and the crank wheel. Measure clearance.



CONNECTING ROD/CRANK CLEARANCE: 0.016-0.020 ins. (0.4-0.5mm.)

g. If any of the above measurements exceed tolerance, crankshaft repair is required. Take the machine to your Authorized Dealer.

h. During reassembly, apply a liberal coating of two-stroke oil to the wrist pin and bearing. Apply several drops of oil to the connecting rod big end. Apply several drops of oil into each crankshaft bearing oil delivery hole.



9. TROUBLESHOOTING - TOP END AND MUFFLER

The following procedure will indicate if top end disassembly is required.

a. Warm up engine. Insert compression gauge into spark plug hole. With ignition off and throttle on, kick engine over briskly several times. If compression measurement exceeds tolerances, disassemble top end complete.



CYLINDER HEAD - CYLINDER YZ250B/360B

- 1 HEAD, cylinder 2 GASKET, cylinder head 3 CYLINDER
- 4 GASKET, cylinder 5 BOLT, stud
- 6 WASHER, plain
- 7 NUT
- 8 BOLT, cylinder holding 9 WASHER, holding

- 10 NUT, holding 11 PLUG, spark (B-8EV)



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CRANK - PISTON YZ250B/360B

1 - CRANK, left 2 - CRANK, right 3 - ROD, connecting 4 - PIN, crank 5 – BEARING, con-rod big end 6 – WASHER, crank pin 7 - PISTON 8 - BEARING, con-rod small end 9 - PIN, piston 10 - CLIP, piston pin 11 - RING, piston 12 - BEARING 13 - CIRCLIP 14 - OIL SEAL 15 - SHIM, crank 16 - OIL SEAL 17 - O-ring 18 – GEAR, primary drive 19 – WASHER, spring 20 - NUT, lock

21 - KEY, woodruff

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CRANKCASE YZ250B/360B

1 - CASE, crank left 2 - CASE, crank right 3 - PIN, dowel 4 - BOLT 5 - BOLT 6 - BOLT 7 - BOLT 8 - BOLT 9 -- PLUG, blind 10 - COVER 11 - SCREW, panhead 12 - WASHER, spring 13 - BREATHER 14 - PIPE, breather 15 – PLUG, drain 16 - GASKET, drain plug 17 - PLUG, oil

- 18 O-RING
- 19 BUSHING
- 20 CLIP, wire

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b. Make a spark plug reading. Adjust spark plug and or carburction as required.

c. Decarbonize muffler/spark arrester assembly. Remove cylinder head and make thorough visual inspection. Decarbonize cylinder head and piston crown. Take care that carbon does not drop into crankcase cavity or foul ring grooves. Reassemble.

SECTION D. IGNITION

CDI Ignition Requires No Periodic Maintenance

1. LOCATION OF COMPONENTS

The system consists of a magneto, a coil and a CDI unit. The magneto is located behind the case on the left side of the engine. The CDI unit is installed on the front of the steering head, and the ignition coil is mounted on the frame right above the air filter.





A kill switch is located on the left handle bar to stop the engine.



2. TROUBLESHOOTING

a. Check for spark at spark plug – if no spark, check connectors.

b. If connections are decided to hight, refer to Mechanical Adjustments, Ignition Timing. Ensure that the timing is correct.

Any further troubleshooting of the CDI system must be performed by your Yardina Deale

3. WIRING DIAGRAM

CM61-20M (YZ250B/360B)



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SECTION E. CLUTCH, SHIFTER, AND KICK STARTER

NOTE

- Clutch adjustment is covered in Chapter V, "Mechanical Adjustments."
- 1. KICK STARTER REMOVAL
- a. Remove the kick starter lever.



b. Remove the foot peg retaining bolts and remove the foot peg.



c. Remove the brake lever circlip and remove the brake lever.



d. Remove the Allen bolts holding the side cover in place and remove the cover. Note the location of the kick axle shim.

Note the position of the dowel pins and location of kick starter axle shim.

e. The kick crank assembly, complete, may be removed by unhooking the return spring and rotating the kick ax le counter-clockwise approximately 45° and pulling out. This procedure allows the ratchet wheel arm to clear the ratchet wheel stopper. Note position of spring.



f. To reassemble, reverse procedure. To obtain proper spring tension, wind the spring back and install on boss located on engine case.



2. CLUTCH REMOVAL

a. Repeat steps a through "d" under Kick Starter Removal.

b. Remove the Phillips screws (6) holding the pressure plate. Remove the clutch springs, pressure plate and push rod. Remove the clutch plates and friction plates.



When removing Phillips spring screws, loosen each screw in several stages working in a cross-hatch pattern to avoid any unnecessary warpage. Note the condition of each piece as it is removed and its location with the assembly.



c. Using the clutch holding tool, remove the clutch securing nut and bevelled lock washer. Remove the clutch boss and driven gear (clutch housing).



d. If the clutch housing spacer remains on the transmission main shaft, remove it. Remove the thrust plate and thrust plate spacers.



KICK STARTER YZ250B/360B

1 - CRANK, kick 2 - BOSS, kick crank 3 - BOLT 4 - BALL 5 - SPRING, boss stopper 6 - WASHER 7 - CIRCLIP 8 - OIL SEAL 9 - SPRING, kick 10 - SHIM 2 11 - CIRCLIP 12 - SPACER 13 - AXLE, kick 14 - COVER, spring 15 - WASHER 16 - GEAR, kick 17 - CLIP 18 - WHEEL, ratchet 19 - SPRING, ratchet wheel 20 - COVER, spring 21 - CIRCLIP 22 - SHIM 23 - STOPPER, kick spring 24 - GUIDE, ratchet wheel 25 - WASHER, lock 26 - BOLT

3. TROUBLESHOOTING - CLUTCH ASSEMBLY

a. Measure the friction plates at three or four points. If their minimum thickness exceeds tolerance, replace.



b. Check the plates for signs of warpage and heat damage, replace as required.



For optimum performance, if any plate requires replacement, it is advisable to replace the entire set.

c. Check each clutch plate for signs of heat damage and warpage. Place on surface plate (plate glass is acceptable) and use feeler gauge.



FRICTION PLATE THICKNESS: YZ250B/360B - 0.118 ins. (3mm.)

CLUTCH PLATE WARP ALLOWANCE: None

d. Thoroughly clean the clutch housing and spacer. Apply a light film of oil on the bushing surface and spacer. Fit the spacer into the bushing. It should be a smooth, thumb-press fit. The spacer should rotate smoothly within the bushing. If appropriate measuring devices are available, measure the minimum I.D. of the clutch housing and the maximum O.D. of the bushing spacer. If beyond tolerance, have dealer replace bushing and refit.

e. Check the bushing and spacer for signs of galling, heat damage, etc. If severe, replace as required.



f. Apply thin coat of oil on transmission main shaft and bushing spacer I.D. Slip spacer over main shaft. Spacer should fit with approximately same "feel" as in clutch housing. Replace as required. See measurement tolerances.

g. Check dogs on driven gear (clutch housing). Look for cracks and signs of galling on edges. If moderate, deburr. If severe, replace.



h. Check splines on clutch boss for signs of galling. If moderate, deburr. If severe, replace.



Galling on either the friction plate dogs of the clutch housing or clutch plate splines of the clutch boss will cause erratic clutch operation.

i. Fit the clutch thrust bearing (two pieces) against the thrust plate with a light film of oil on all parts. Check for smooth rotation. Check for signs of excessive wear, all parts. Replace as necessary.

j. If clutch operation has been abnormal, and the above procedures show no major failures, install the clutch housing on the transmission main shaft with thrust plates, bearing spacer, and clutch boss in their proper positions for reassembly. Do not install clutch or friction plates. Install bevelled lock washer and clutch securing nut. Torque to standard assembly value.

k. With transmission in neutral, primary driven gear stationary, clutch boss should turn without excessive drag within the clutch housing. If housing does not turn easily, indicating insufficient housing end play, check thrust plates and thrust bearing for incorrect thickness. Correct by installing thinner thrust plates. Clutch housing end play is given in table and can be measured with a dial gauge. I. Measure each clutch spring. If beyond tolerance, replace.



CLUTCH SPRING FREE LENGTH:

YZ250B/360B - 1.28 ins. (32.5mm.)



For optimum clutch operation it is advisable to replace the clutch springs as a set if one or more are faulty. m. Stack the clutch spring set on a level surface. Rotate each spring until all are at approximately the same vertical angle and maximum apparent height. Place straight edge across set. If any spring exceeds tolerance, replace that spring.



n. Take care that the thrust plates and thrust bearing do not slip out of position as the housing and clutch boss are installed. Install all parts with a heavy coat of 10W-30 motor oil on their mating surfaces. 3. SHIFT MECHANISM - YZ250B/360B

NOTE

Shifter maintenance and adjustment should be performed with clutch assembly removed.

a. To adjust, move the gear change lever up and down and turn the adjusting bolt B (eccentric bolt) on the case so that the clearance (a) will become equal to the clearance (a'). (a) is the clearance between the bent part of change lever 2 and the stopper (shaded area in the drawing) and (a') is the clearance between the bent part and the stopper. The stopper is a device for preventing the shifter from over-running the correct position. After the adjustment, lock the adjusting screw with the lock nut.





CLUTCH YZ250B/360B

- 1 PRIMARY DRIVEN GEAR COMP.
- 2 BOSS, clutch
- 3 PLATE, clutch 2
- 4 PLATE, friction
- 5 PLATE, pressure
- 6 SPRING, clutch
- 7 SCREW, spring
- 8 ROD, push
- 9 BALL
- 10 NUT, lock
- 11 WASHER, lock
- 12 GEAR, kick pinion
- 13 SPACER
- 14 BEARING
- 15 PLATE, thrust 2
- 16 PLATE, thrust 1
- 17 ROD, push 2
- 18 OIL SEAL
- 19 PUSH LEVER ASS'Y
- 20 SPRING, return
- 21 HOOK, spring
- 22 JOINT
- 23 PIN
- 24 PIN, cotter
- 25 SCREW, adjusting
- 26 NUT, adjusting

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b. Nexe turn the adjusting screw A (eccentric screw) on change lever 1 so that the clearance (b) will become even with the clearance (b') on each gear position. This clearance (b) is between the pin and change lever 3. After the adjustment, lock the adjusting screw with the lock nut. Recheck your adjustment by shifting through several gears.

- 4. SHIFT MECHANISM YZ125A,
- a. Adjusting the Gear Shift Arm

SECTION F. DRIVE SPROCKETS AND CHAIN

NOTE

Please refer to Maintenance Intervals and Lubrication Intervals charts located in Chapter I for additional information.

1. DRIVE SPROCKET

a. Using a blunt chisel, flatten the drive sprocket lock washer tab.

b. With the drive chain in place, transmission in gear, firmly apply the rear brake. Remove the sprocket securing nut. Remove the sprocket.

c. Check sprocket wear. Replace if wear decreases tooth height to a point approaching the roller center line.



d. Replace if tooth wear shows a pattern such as that in the illustration, or as precaution and common sense dictate.

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e. During drive sprocket reassembly, make sure the lock washer splines are properly seated on the drive shaft splines. Tighten securing nut thoroughly to specified torque value. Bend lock washer tab fully against securing nut flats.

DRIVE SPROCKET SECURING NUT TORQUE:

YZ250B/360B - 42-51ft-lbs.(5.8-7m-kgs.)

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SHIFTER 1 YZ2508/3608

1 - CAM, shift 2 - PIN, dowel 3 - PIN, dowel 4 - PLATE, side 5 - SCREW, flathead 6 - SHIM, shift cam 7 - PLATE, stopper 8 - GUIDE, change lever 9 - WASHER, spring 10 - SCREW, panhead 11 - FORK, shift 1 12 - FORK, shift 2 13 - FORK, shift 3 14 - PIN, cam follower 15 - PIN, cam follower 16 - BAR, shift fork guide 17 - CIRCLIP 18 - BOLT, stopper 19 - GASKET 20 - SPRING, cam stopper 21 - STOPPER, cam 22 - BRACKET 23 - AXLE, bracket 24 - CIRCLIP 25 - SPRING 26 - LEVER, change 4 27 - LEVER, change 3 28 - CIRCLIP 29 - ROLLER, change lever

- 30 PLUG, blind

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TRANSMISSION YZ250B/360B

1 - AXLE, main 2 - GEAR, 4th pinion 3 - WASHER, gear hold 4 - CIRCLIP 5 - GEAR, 3rd pinion 6 - WASHER, gear hold 7 - GEAR, 5th pinion 8 - GEAR, 2nd pinion 9 - WASHER, gear hold 10 - SHIM 11 - BEARING 12 - CIRCLIP 13 - SHIM, main axle 14 - BEARING 15 - CIRCLIP 16 - AXLE, drive 17 - GEAR, 2nd wheel 18 - GEAR, 5th wheel 19 - GEAR, 3rd wheel 20 - GEAR, 4th wheel 21 - GEAR, 1st wheel 22 - WASHER, gear hold 23 - CIRCLIP 24 - CIRCLIP 25 - WASHER, gear hold 26 - SPACER, drive axle 27 - SHIM, drive axle 28 - BEARING 29 - OIL SEAL 30 - COLLAR, distance 31 - SPROCKET, drive 32 - WASHER, lock 33 - NUT, lock 34 - BEARING 35 - CIRCLIP 36 - GEAR, idle 37 - SHIM 38 - CIRCLIP 39 - SHIM, drive axle

2. DRIVEN SPROCKET AND CHAIN

With the rear wheel removed, proceed as follows:

a. Using a blunt chisel, flatten the securing bolt lockswasher tabs. Remove the securing bolts (6). Remove the lock washers and sprocket.

b. Check sprocket wear per procedures for the drive sprocket.

c. Check the sprocket to see that it runs true. Do not heat and hammer to straighten. Use a press. If severely bent, replace.

d. During reassembly, make sure the sprocket and sprocket seat are clean. Tighten the securing bolts in a cross-hatch pattern. Bend the tabs of the lock washers fully against the securing bolt flats.

DRIVEN SPROCKET SECURING BOLT TORQUE: 14.5 ft-lbs. (2.0 m-kgs.)

3. CHAIN



Refer to Maintenance and Lubrication Charts located in Chapter I for additional information.

a. Using a blunt-nosed pliers, remove the master link clip and side plate. Remove the chain.

b. Check the chain for stiffness. Hold as illustrated. If stiff, soak in solvent solution, clean with medium bristle brush, dry with high pressure air. Oil chain thoroughly and attempt to work out kinks. If still stiff, replace.



c. Check the side plates for visible wear. Check to see if excessive play exists in pins and rollers. Check for damaged rollers. Replace as required



TURNING DIRECTION

d. During reassembly, the master link clip must be installed with the rounded end facing the direction of travel.

4. TROUBLESHOOTING

With the chain installed on the machine, excessive wear may be roughly determined by attempting to pull the chain away from the rear sprocket. If the chain will lift away more than one-half the length of the sprocket teeth, remove and inspect.

If any portion of the chain shows signs of damage, or if either sprocket shows signs of excessive wear, remove and inspect.



5. MAINTENANCE

The chain should be lubricated per the recommendations given in the Maintenance and Lúbrication Schedule Chart located in Chapter I. More often if possible. Preferably after every use.

a. Wipe off dirt with shop rag. If accumulation is severe, use soft bristle brush, then rag.

b. Apply lubricant between roller and side plates on both inside and outside of chain. Don't skip a portion as this will cause uneven wear. Apply thoroughly. Wipe off excess.



Chain and lubricant should be at room temperature to assure penetration of lubricant into rollers. Choice of lubricant is determined by use and terrain. SAE 20wt. or 30wt. may be used, but several specialty types by accessory manufacturers offer more penetration, corrosion resistance and shear strength for roller protection.

In certain areas, semi-drying lubricants are preferable. These will resist picking up sand particles, dust, etc. Consult your Authorized Yamaha Dealer.

c. Periodically, remove the chain, wipe and/or brush excess dirt off. Blow off with high pressure air.

d. Soak chain in solvent, brushing off remaining dirt. Dry with high pressure air. Lubricate thoroughly while off machine. Work each roller thoroughly to make sure lubricant penetrates. Wipe off excess. Re-install.



See Maintenance and Lubrication Schedule Charts located in Chapter I for additional information.

6. CABLES

Cable maintenance is primarily concerned with preventing deterioration through rust and weathering; and providing for proper lubrication to allow the cable to move freely within its housing. Cable removal is straightforward and uncomplicated. Removal will not be discussed within this section. For details, see the individual maintenance section for which the cable is an integral part.

7. MAINTENANCE

a. Remove the cable.

b. Check for free movement of the cable with its housing. If movement is obstructed, check for fraying of the cable strands. If fraying is evident, replace the cable assembly.

c. To lubricate cable, hold in vertical position. Apply lubricant to uppermost end of cable. Leave in vertical position until lubricant appears at bottom end. Allow excess to drain and rainstall.



Choice of lubricant depends upon conditions and preference. However, a semi-drying, graphite-base lubricant will probably perform most adequately under most conditions.

Under certain conditions, a water displacing lubricant is more suitable. Check with the Authorized Yamaha Dealer in your area.



FRONT WHEEL YZ250B/360B

1 - HUB, front 2 - SPOKE SET 3 - RIM, front 4 - TIRE, front 5 - TUBE, front 6 - BAND, rim 7 - SPACER, bearing 8 - FLANGE, spacer 2 9 - BEARING 10 - OIL SEAL 11 - BEARING 12 - PLATE, brake shoe 13 - BRAKE SHOE COMP. 14 - SPRING, brake shoe return 15 - CAMSHAFT 16 - SEAL, camshaft 17 - LEVER, camshaft 18 - BOLT 19 - SHAFT, wheel 20 - COVER, hub dust 21 - COLLAR, wheel shaft 22 - SPACER, bead



REAR WHEEL YZ250B/360B

1 - HUB, rear 2 - SPOKE SET 3 - RIM, rear 4 - TIRE, rear 5 - TUBE, rear 6 - BAND, rim 7 - SPACER, bead 8 - SPACER, bearing 9 - FLANGE, spacer 10 - BEARING 11 - BEARING 12 - PLATE, brake shoe 13 - BRAKE SHOE COMP. 14 - SPRING, tension 15 - CAMSHAFT 16 - OIL SEAL 17 - LEVER, camshaft 18 - BOLT 19 - SHAFT, wheel 20 - PULLER, chain 21 - COLLAR 22 - GEAR, sprocket wheel 23 - WASHER, lock 24 - BOLT, hexagon 25 - CHAIN 26 - JOINT, chain 27 - OIL SEAL 28 - COVER, dust 29 - COLLAR, sprocket shaft 30 - WASHER, spring 31 - NUT 32 - BOLT, chain puller 33 - NUT 34 - BAR, tension 35 - BOLT 36 - BOLT 37 - WASHER, plain 38 - WASHER, spring 39 - NUT

40 - PIN, cotter



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STEERING YZ250B/360B

1 - RACE, ball 1 2 - BALL 3 - RACE, ball 2 4 -- RACE, ball 2 5 - BALL 6 - RACE, ball 1 7 - COVER, ball race 8 - NUT, steering fitting 9 - CROWN, handle 10 - WASHER, crown 11 - BOLT, steering fitting 12 - BOLT, handle crown 13 - WASHER, plate 14 - NUT U 15 - HOLDER, wire 16 - HOLDER, handle upper 17 - BOLT, fitting 18 - WASHER, spring 19 - SEAL, dust



FRONT FORK YZ250B/360B

1 - TUBE, outer left 2 - TUBE, outer right 3 - OIL SEAL 4 - WASHER, oil seal 5 - CLIP, oil seal 6 - CIRCLIP 7 - PISTON 8 - CYLINDER COMP. 9 - SPRING, fork 10 - TUBE, inner 11 - SEAL, dust 12 - HOLDER, wire 13 - O-RING 14 - BOLT, cap 15 - UNDER BRACKET COMP. 16 - BOLT, under bracket 17 - NUT Ú 18 - PLUG, drain 19 - GASKET, drain plug 20 - BOLT 21 - PACKING 22 - BOLT

- 23 HOLDER, wire
- 24 PLATE, number
- 25 STAY, number plate
- 26 O-RING
- 27 EMBLEM, number
- 28 -

CHAPTER VI. CHASSIS MAINTENANCE AND MINOR REPAIRS

SECTION A. WHEELS AND TIRES

1. FRONT WHEEL

a. To remove the front wheel, disconnect the brake cable at the front brake lever.

Then, remove the front wheel axle from the front wheel by the open end wrench.

b. Raise the front of the machine and set it on a box. Then remove the wheel assembly.

c. Remove the front wheel axle by simultaneously twisting and pulling out on the axle.



2. CHECKING BRAKE SHOE WEAR

Measure the outside diameter at the brake shoe with slide calipers. If it measures less than 5.039 ins. (YZ250B/360B),



FRONT BRAKE SHOE DIAMETER:

YZ250B/360B - 5.118 ins. (130mm.)

REPLACEMENT LIMIT: 0.079 ins. (2mm.)

3. BRAKE DRUM

Oil or scratches on the inner surface of the brake drum will impair braking performance or result in abnormal noises. Remove oil by wiping with a rag soaked in lacquer thinner or solvent. Remove scratches by lightly and evenly rubbing with emery cloth.

4. REPLACING WHEEL BEARINGS

If the bearings allow excessive play in the wheel or if it does not turn smoothly, replace the bearing as follows:

a. First clean the outside of the wheel hub.

b. Insert the bent end of the special tool into the hole located in the center of the bearing spacer, and drive the spacer out from the hub by tapping the other end of the special tool with a hammer. (Both bearing spacer and space flange can easily be removed.)

c. Push out the bearing on the other side.

d. To install the wheel bearing, reverse the above sequence. Be sure to grease the bearing before installation and use the bearing fitting tool. (furnished by Yamaha).

e. Check the lips of the seals for damage or warpage. Replace if necessary.

5. SPOKES

Check the spokes. If they are loose or bent, tighten or replace them. If the machine is ridden in rough country often, or raced, the spokes should be checked regularly.

- 6. REAR WHEEL
- a. Removal
 - (1) Remove the tension bar and brake rod from rear shoe plate.
 - (2) Remove cotter pin from rear wheel shaft nut.
 - (3) Remove the rear wheel shaft nut.
 - (4) Pull out the rear wheel shaft by simultaneously twisting and pulling out.
 - (5) Remove the rear brake shoe plate.
 - (6) Lean the machine to the left and remove the rear wheel assembly.
- 7. CHECKING BRAKE SHOE WEAR

a. Measure the outside diameter at the brake shoe with slide calipers. If it measures less than 6.220 ins. (YZ250B/360B),

REAR BRAKE SHOE DIAMETER: YZ250B/360B — 6.299 ins. (160mm.) REPLACEMENT LIMIT: 0.079 ins. (2mm.)

8. BRAKE DRUM

Oil or scratches on the inner surface or the brake drum will impair braking performance or result in abnormal noises. Remove oil by wiping with a rag soaked in lacquer thinner or solvent. Remove scratches by lightly and evenly rubbing with emery cloth.

9. REPLACING WHEEL BEARINGS

Refer to front wheel section.

- 10. CHECKING RIMS AND SPOKES (Front & Rear Wheels)
- a. Checking for loose spokes

Loose spokes can be checked by bracing the machine off the ground so that the front wheel can spin free. Slowly revolve the front wheel and at the same time let the metal shaft of a fairly heavy screwdriver bounce off each spoke. If all the spokes are tightened approximately the same then the sound given off by the screwdriver hitting the spokes should sound the same. If one spoke makes a dull flat sound, then check it for looseness.

b. Smooth out a rough shoe surface with sandpaper or with a file.

b. Checking rim "run-out"

While you have the machine up in the air, you should check that the front wheel does not have too much run-out. "Run-out" is the amount the front wheel deviates from a straight line as it spins. Secure the front forks to keep them from turning. Set up a dial indicator or solidly anchor a pointer about 0.12 ins.(3mm.) away from the side of the rim.

As the wheel spins, the distance between the pointer and the rim should not change more than 0.079 ins. (2mm.) total. Any greater fluctuation means that you should remove this rim warpage by properly adjusting the spokes.

RUN-OUT LIMITS: 0.079 ins. (2mm.)

11. TIRE REMOVAL

a. Remove valve cap, valve core, valve stem lock nut, and rim lock nuts.

b. When all air is out of tube, separate tire bead from rim (both sides) by stepping on tire with your foot.

c. Use two tire removal irons (with rounded edges) and begin to work the tire bead over the edge of the rim, starting 180° opposite the tube stem. Take care to avoid pinching the tube as you do this.

d. After you have worked one side of the tire completely off the rim, then you can slip the tube out. Be very careful not to damage the stem while pushing it back out to the rim hole.

NOTE

If you are changing the tire itself, then finish the removal by working the tire off the same rim edge.

12. INSTALLING TIRE

Re-installing the tire assembly can be accomplished by reversing the disassembly procedure. The only different in procedure would be right after the tube has been installed, but before the tire has been completely slipped onto the rim, inflate the tube. This removes any creases that might exist. Release the air and continue with reassembly. Also, right after the tire has been completely slipped onto the rim, check to make sure that the stem is squarely in the center of the hole in the rim.



YZ250B/360B TIRE PRESSURE FOR NORMAL RIDING : Front – 13 lbs/in.² (0.91 kgs/cm.²) Rear – 15 lbs/in.² (1.05 kgs/cm.²)

SECTION B. FRONT FORKS AND STEERING HEAD

1. GENERAL

The front forks on your machine utilize chrome plated tubular steel fork legs (inner tubes) and tubular aluminum sliders (outer tubes). The bearing surface is the entire inside surface of the aluminum outer tube.

The steering head pivot is supported by two sets of uncaged ball and race bearing assemblies.

2 FRONT FORK OIL CHANGE

a. With the front wheel removed or raised off the floor with a suitable frame stand, remove cap bolts on inner fork tubes.



b. Remove drain screw from each outer tube with open container under each drain hole.



c. After most of oil has drained, slowly raise and lower outer tubes to pump out remaining oil.

d. Replace drain screws.



Check gaskets, replace if damaged.

e. Measure correct amount of oil and pour into each leg.

RECOMMENDED OIL:

Non-foaming hydraulic fluid 10, 20, 30wt. (fork oil)

.

QUANTITY PER LEG:

YZ250B/360B - 6.6 oz. (194 c.c.)

f. After filling, slowly pump the outer tubes up and down to distribute the oil.

g. Inspect O-ring on fork cap bolts and replace if damaged.

h. Replace fork cap bolts and torque to specification.





Select the weight oil that suits local conditions and your preference (lighter for less damping; heavier for more damping.

FORK CAP BOLT TORQUE: 21.7–28.9 ft-lbs. (3.0–4.0 m-kgs.)

3. STEERING HEAD ADJUSTMENT

a. With front wheel elevated, grasp bottoms of fork legs and gently push and pull to check steering head freeplay. There should be no noticeable freeplay.



b. To adjust, first loosen upper stem pinch bolt.



c. Loosen stem bolt

d. Use ring nut wrench to tighten adjust nut. Tighten until freeplay is eliminated.

- CAUTION -FORKS MUST SWING FROM LOCK TO LOCK WITHOUT BINDING OR CATCH-ING.



e. Tighten stem bolt and torque to specification_

STEM BOLT TORQUE: 21.7-28.9 ft-lbs. (3.0-4.0 m-kgs.)

f. Tighten pinch bolts at fork crown and torque to specification.

STEM PINCH BOLT TORQUE: 14.5 ft-lbs. (2.0 m-kgs.)



For steering head disassembly – refer to DT250A/360A Service Manual for correct procedure.

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SECTION C. REAR SHOCK (MONOCROSS SUSPENSION) AND SWING ARM

1. REAR SHOCK (MONOCROSS SUSPEN-SION) REMOVAL

a. Remove the two bolts securing the rider's seat, the remove the seat. Then remove the staps securing the fuel tank (before this operation, the fuel petcock lever must be placed in OFF, and the fuel pipe must be removed at the carburetor side. The air vent pipe must also be removed). Lift up the rear of the fuel tank slightly, and pull it backward. The two rubber dampers (on both sides of front bottom of the fuel tank) will come off the frame. (See page 51)



b. Next, remove the two pivot shaft nuts on the front part of the rear shock (Monocross suspension), and remove the washer, and rubber.



Pivot shaft nuts torque: 50.63 ft-lbs. (7 m-kgs.)

c. Next, remove the bolt securing the membrane housing to the rear of the frame. The bolt is held by a stopper so it does not turn when the nut is screwed out. Loosen the nut first, and remove the bolt. Take care so the two washer are not lost.

Membrane housing install nut torque:

14.47 ft-lbs. (2 m-kgs.)



d. Remove the rear shock from the frame. (To remove, pull the rear shock backward while lifting up the swing arm.)



2. REAR SHOCK SPRING REPALCEMENT

a. Cover the bolt hole areas of the membrane housing with a rag or rubber tube, and grip it in a vise. Using a pipe wrench or a monkey wrench, remove the T-nut. If any nut is damaged, replace.





T-nut Torque: 10.85 ft-lbs. (1.5 m-kgs.)



REAR ARM - REAR CUSHION

1 - REAR ARM COMP.

2 - SHAPT, pivot

3 - COVER, thrust 4 - BEARING

5 - BEARING

6 - OIL SEAL

7 - BUSH 2

8 - WASHER, plate

9 - SEAL, guard

10 - WASHER, spring

11 - NUT, hexagon

12 – GUARD, chain

13 - BOLT

14 - BOLT

15 - WASHER, spring

16 – NUT

17 - TENSIONER

18 - SPACER, chain guard

19 - BOLT

20 - WASHER, plain

21 - WASHER, plain

22 - NUT

23 - REAR CUSHION ASS'Y

24 - COVER, thrust

25 - WASHER

26 - BOLT

27 - WASHER, spring

28 – NUT

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In addition to the standard type, two different type rear shock springs are sold. A proper type should be selected according to the conditions of a racing course or the weight of the rider.

Туре	Part No.	Spring constant kg/mm	Color cords
Soft	90501-80240	3.8	Painted white
Standard	90501-80320	4.1	None painted
Hard	90501-80239	4.2	Painted Blue

NOTE

For assembly, the abovementioned procedure should be reversed.

a. For adjustment or replacement of the nitrogen gas, or change of the shock absorber oil in the accumulator, or for disassembly of the accumulator, or for disassembly of the accumulator, consult your authorized Yamaha dealer.

3. SWING ARM INSPECTION

a. With rear wheel and membrane housing bolt removed, grasp the ends of the arm and move from righ to left to check for freeplay.



SWING ARM FREEPLAY: None

b. If freeplay is excessive, remove swing arm and replace swing arm bushing.

4. SWING ARM PIVOT LUBRICATION

a. On the YZ250B/360B the swing arm must be disassembled to lubricate.

RECOMMENDED LUBRICANT: 90wt., smooth lube grease

CHAPTER VII. MISCELLANEOUS

SECTION A. CONVERSION TABLES

Metric to Inch System

KNOWN	MULTIPLIER (Rounded off)	RESULT	
TORQUE			
m-kg.	7.233	ft-lb.	
m-kg.	86.796	in-lb.	
cm-kg.	0.0723	ft-lb.	
cm-kg.	0.8679	in-Ib.	
WEIGHT			
kg.	2.205	lb.	
g.	0,0353	oz.	
FLOW/DISTAN	ICE		
km/lit.	2.352	m.p.g.	
km/h.	0.6214	m.p.h.	
km.	0.6214	mi.	
m,	3.2809	ft.	
m.	1.0936	yd.	
cm,	0.3937	in.	
mm.	0.03937	in.	
VOLUME/CAP	ACITY		
C.C.	0,03381	oz. (U.S. liq.)	
c.c.	0.06103	cu.in.	
lit.	2.1134	pt. (U.S. liq.)	
lit.	1.057	qt. (U.S. liq.)	
lit.	0.2642	gal. (U.S. liq.)	
MISC.			
kg/mm.	65.9970	lb/in.	
kg/cm ²	14.2233	psi. $(lb/in2)$	
9 5. Centigrade (°C) + 32		Fahrenheit (°F)	

DEFINITION OF TERMS:

m-kg.	-	Meter-kilogram:	Usually	torque.

- 9 Gram(s).
- kg. Kilogram(s): 1,000 grams.
- km. Kilometer(s).

KNOWN	MULTIPLIER (Rounded off)	RESULT	
TORQUE			
ft-lb.	0.1383	m-kg.	
ft-lb.	13.8313	cm-kg.	
in-lb.	0.01152	m-kg.	
in-lb.	1.1522	cm-kg.	
WEIGHT			
lb.	0.4536	kg.	
oz.	28.3286	9.	
FLOW/DISTAN	CE		
mi/gal.	0.4252	km/lit.	
mi/h.	1.6093	km/h.	
mi.	1.6093	km.	
ft.	0.3048	m.	
yd.	0.9144	m.	
in.	2.540	cm.	
in.	25.40	mm.	
VOLUME/CAP	ACITY		
oz. (U.S. liq.)	29.577	c.c.	
cu.in.	16.385	c.c.	
pt. (U.S. liq.)	0.4732	lit.	
qt. (U.S. IIq.)	0.9461	lit,	
gal. (U.S. liq.)	3.7850	lit.	
MISC.			
lb/in	0.01786	kg/mm.	
psi. (lb/in^2)	0.07031	kg/cm.*	
5. [Fehrenheit (°I	F)-32]	Centigrade (° C	

lit. – Liter(s). km/lit. – Kilometer(s) per liter: Mileage. c.c. – Cubic centimeter(s) (cm³): Volume or capacity. kg/mm. – Kilogram(s) per millimeter: Usually spring compression rate.

kg/cm² - Kilogram(s) per square centimeter: Pressure.

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SECTION B. CLEANING AND STORAGE

CLEANING

Frequent thorough cleaning of your motorcycle will not only enhance its appearance, but will improve general performance and extend the useful life of many components.

1. Before cleaning the machine:

a. Block off end of exhaust pipe to prevent water entry; a plastic bag and strong rubber band may be used.

b. Remove air cleaner or protect it from water with plastic covering.

NOTE

With air cleaner removed make sure no water enters intake.

c. Make sure spark plug, gas cap, oil tank cap, transmission oil filler cap and battery caps are properly installed.

2 If engine case is excessively greasy, apply degreaser with a paint brush. <u>Do not</u> apply degreaser to chain, sprockets, or wheel axles.

3. Rinse dirt and degreaser off with garden hose, using only enough hose pressure to do the job. Excessive hose pressure may cause water seepage

and contamination of wheel bearings, front forks, brake drums, and transmission seals. Many expensive repair bills have resulted from improper highpressure detergent applications such as those available in coin-operated car washes.

4. Once the majority of dirt has been hosed off, wash all surfaces with warm water and mild, detergent-type soap. An old tooth brush or bottle brush is handy to reach those hard to get to places.

5. Rinse machine off immediately with clean water and dry all surfaces with a chamois skin, clean towel, or soft absorbent cloth.

6. Immediately after washing, remove excess moisture from chain and lubricate to prevent rust.

7. Chrome-plated parts such as handlebars, rims, spokes, forks, etc. may be further cleaned with automotive chrome cleaner.

8. Clean the seat with a vinyl upholstery cleaner to keep the cover pliable and glossy.

9. Automotive-type wax may be applied to all painted and chrome-plated surfaces. Avoid combination cleaner-waxes. Many contain abrasives which may mar paint or protective finish on fuel and oil tanks.

10. After finishing, start the engine immediately and allow to idle for several minutes.

STORAGE

Long term storage (30 days or more) of your motorcycle will require some preventive procedures to insure against deterioration. After cleaning machine thoroughly, prepare for storage as follows:

1. Drain fuel tank, fuel lines, and carburetor float bowl(s).

2. Remove empty fuel tank, pour a cup of 10W to 30W oil in tank, shake tank to coat inner surfaces thoroughly and drain off excess oil. Re-install tank.

3. Remove spark plug, pour about one tablespoon of 10W to 30W oil in spark plug hole and reinstall spark plug. Kick engine over several times (with ignition off) to coat cylinder wall with oil.

4. Remove drive chain. Clean thoroughly with solvent and lubricate with graphite-base chain lubricant. Re-install chain or store in a plastic bag (tie to frame for safe-keeping).

5. Lubricate all control cables.

6. Block up frame to raise both wheels off ground. (Main stands can be used on machines so equipped).

7. Deflate tires to 15 lbs/in.² (1.1 kgs/cm.²)

8. Tie a plastic bag over exhaust pipe outlet to prevent moisture entering.

9. If storing in humid or salt-air atmosphere, coat all exposed metal surfaces with a light film of oil. Do not apply oil to rubber parts or seat cover.



SECTION C. WARRANTY

The YZ models have been designed expressly for competition. Many components have been extensively lightened. The power produced by the engines is considerably above that of a "stock" unit. In light of these facts, and considering the use to which the machines will be put, Yamaha provides no warranty – either express or implied – on any YZ model motorcycle.

If any questions arise regarding your YZ, consult your Authorized Yamaha Dealer, or:

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SECTION D.	MAINTENANCE RECORD		www.legends-yamaha-enduros.com
DATE	MILES	ITEM	REMARKS
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