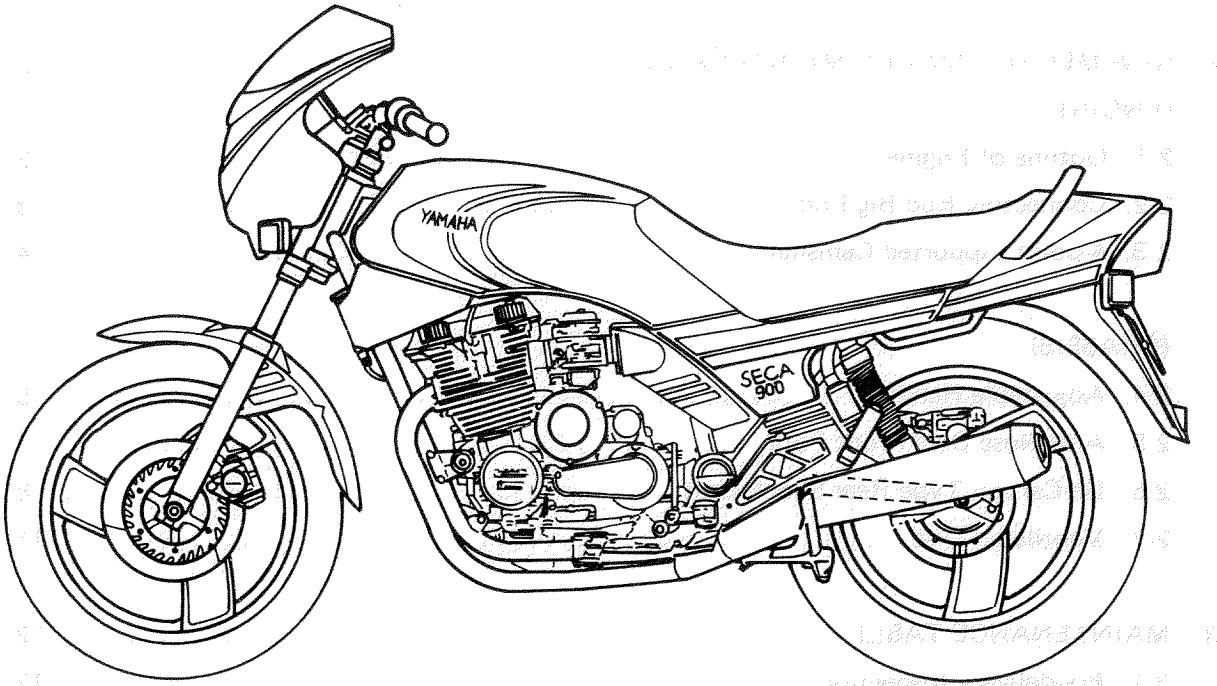


## 1. GENERAL INFORMATION



(ENGINE)

## 4-point supported camshaft

Y.I.C.S.

900 cm<sup>3</sup> displacement engine with oil cooler

Primary drive gear on crankshaft balancer

High torque at the low/mid range engine rpm

(ELECTRICAL)

Quartz halogen headlight

**Self-cancelling flasher light (except Germany)**

#### Side stand safety (for Canada)

## T.C.Ignition

(CHASSIS)

Air assisted front fork with equalizer

Anti nose dive fork

#### Front fork brace

#### Ventilated disc

Forged aluminum foot peg/change pedal

De Carbon type rear shock with pre-load/damper adjuster

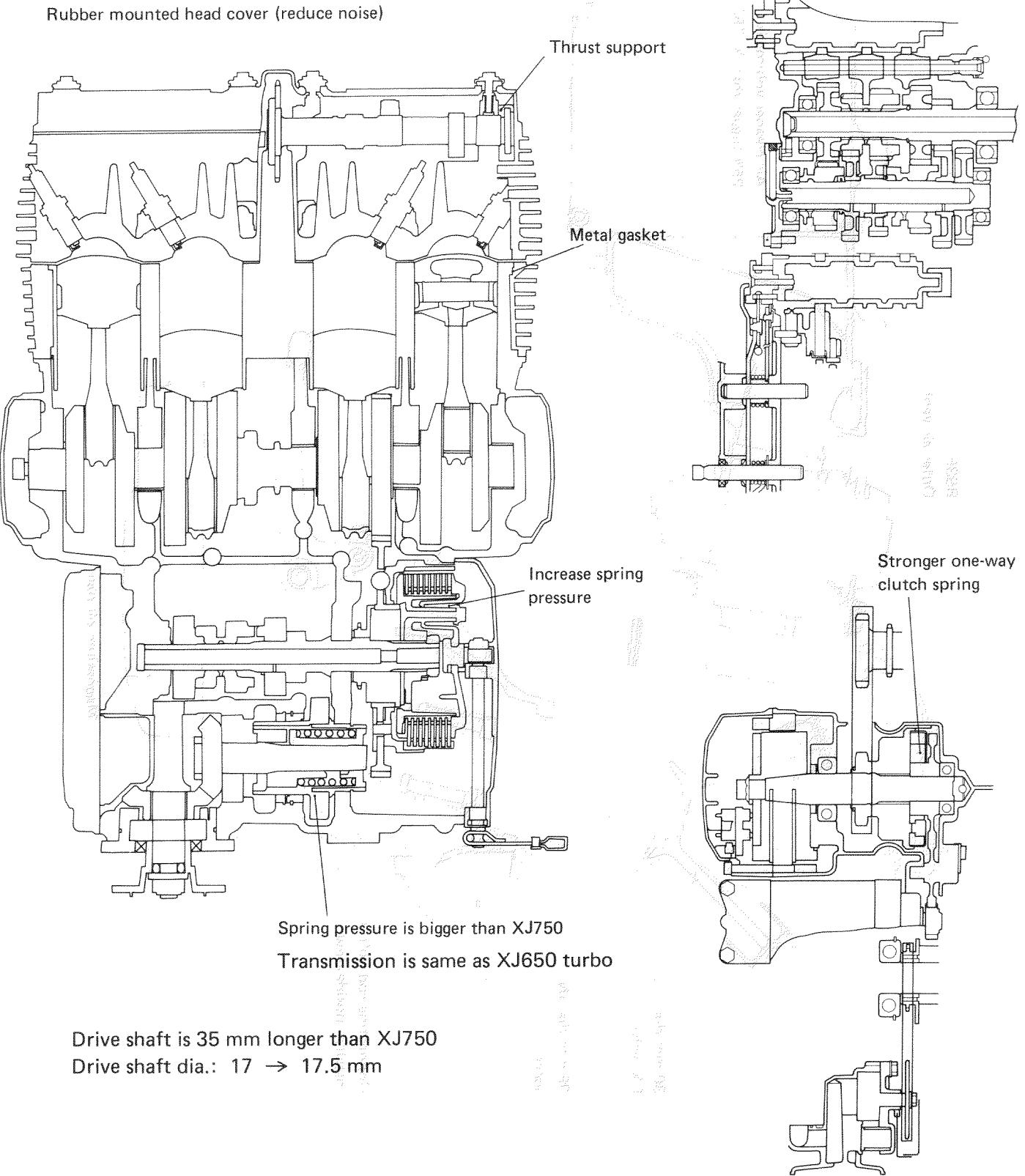
Forged aluminum handle bar with  
adjustable mechanism

### Sports fairing

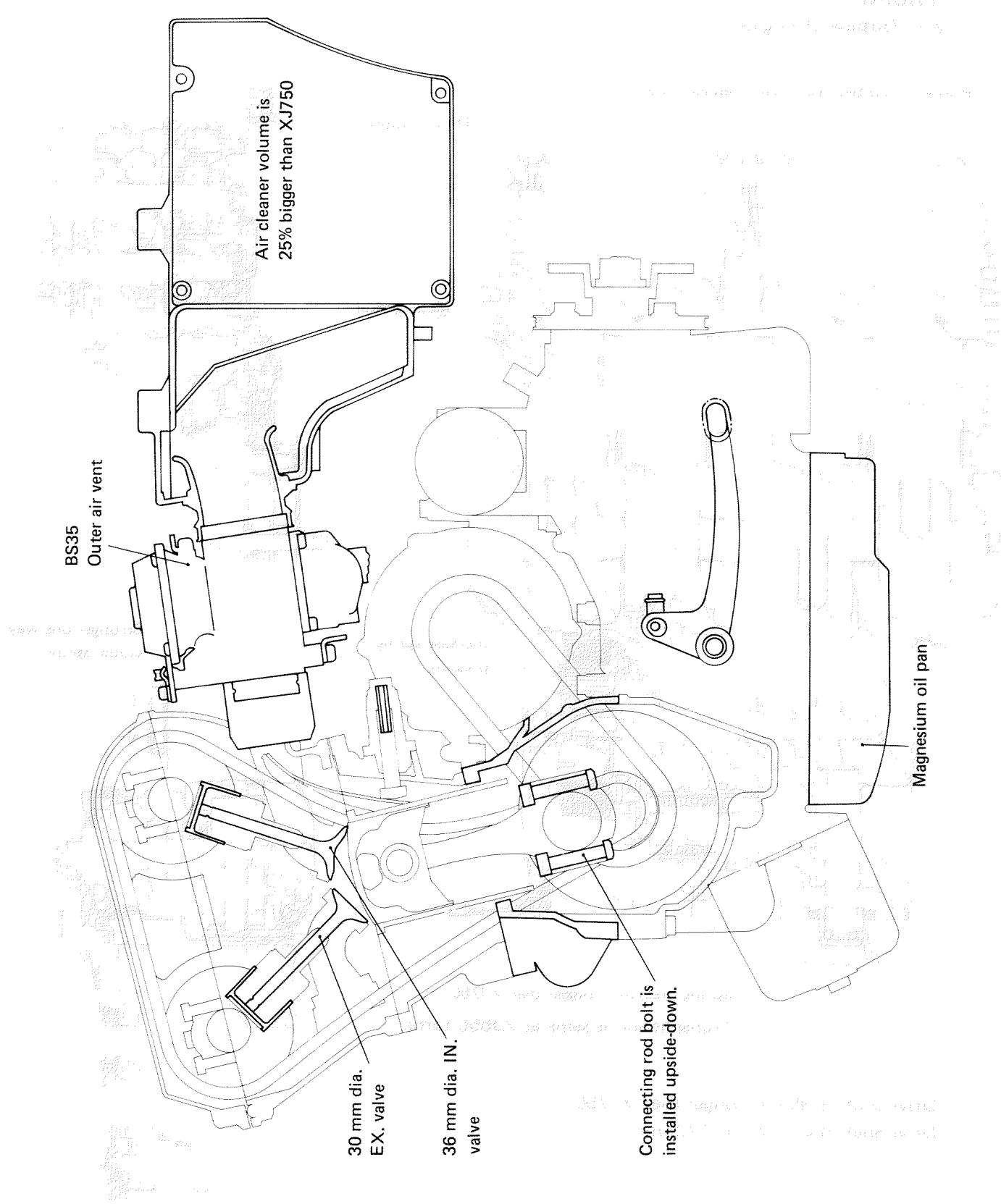
## 2. NEW MECHANISM AND MAINTENANCE

### (ENGINE)

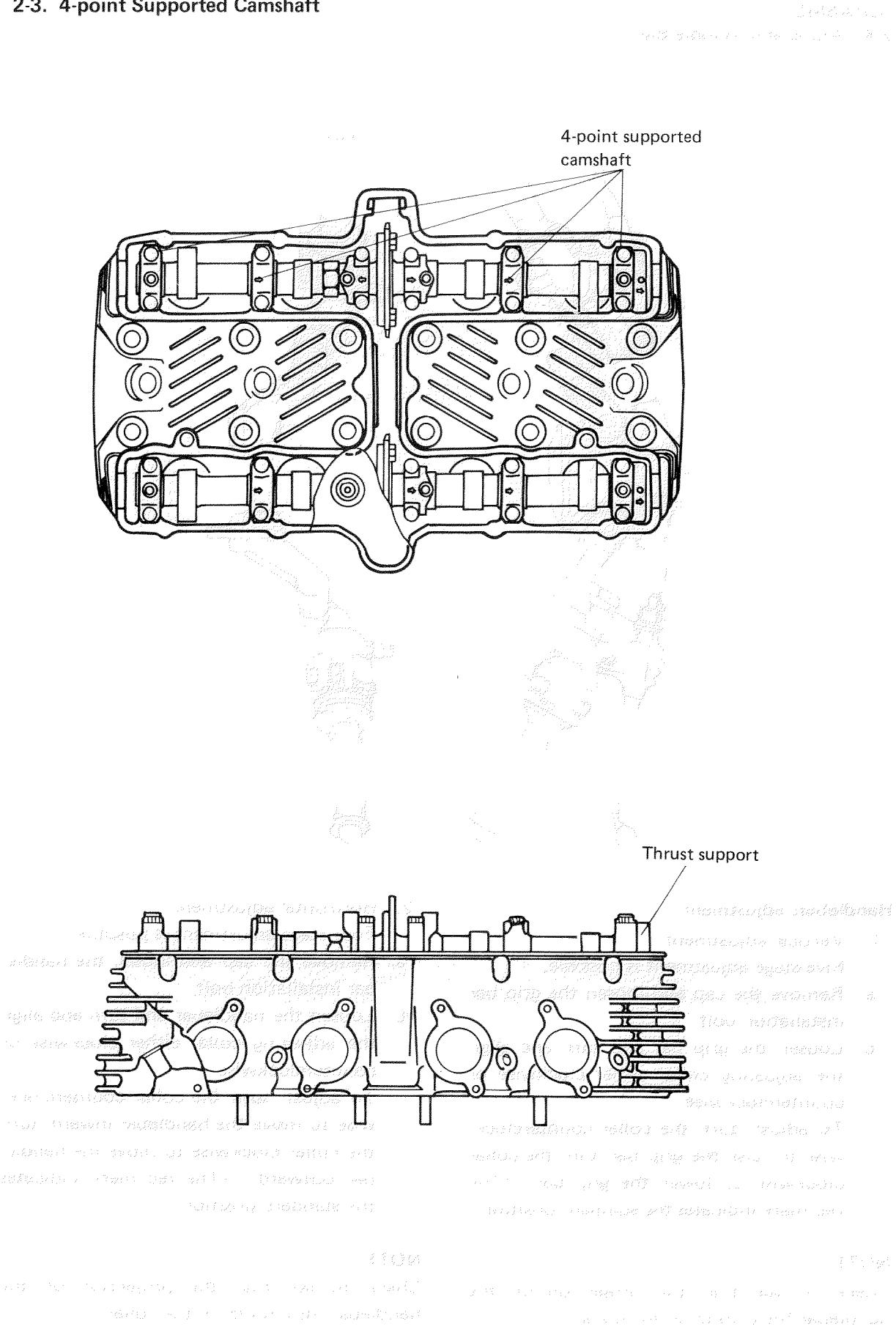
#### 2-1. Outline of Engine



## 2-2. Connecting Rod Big End

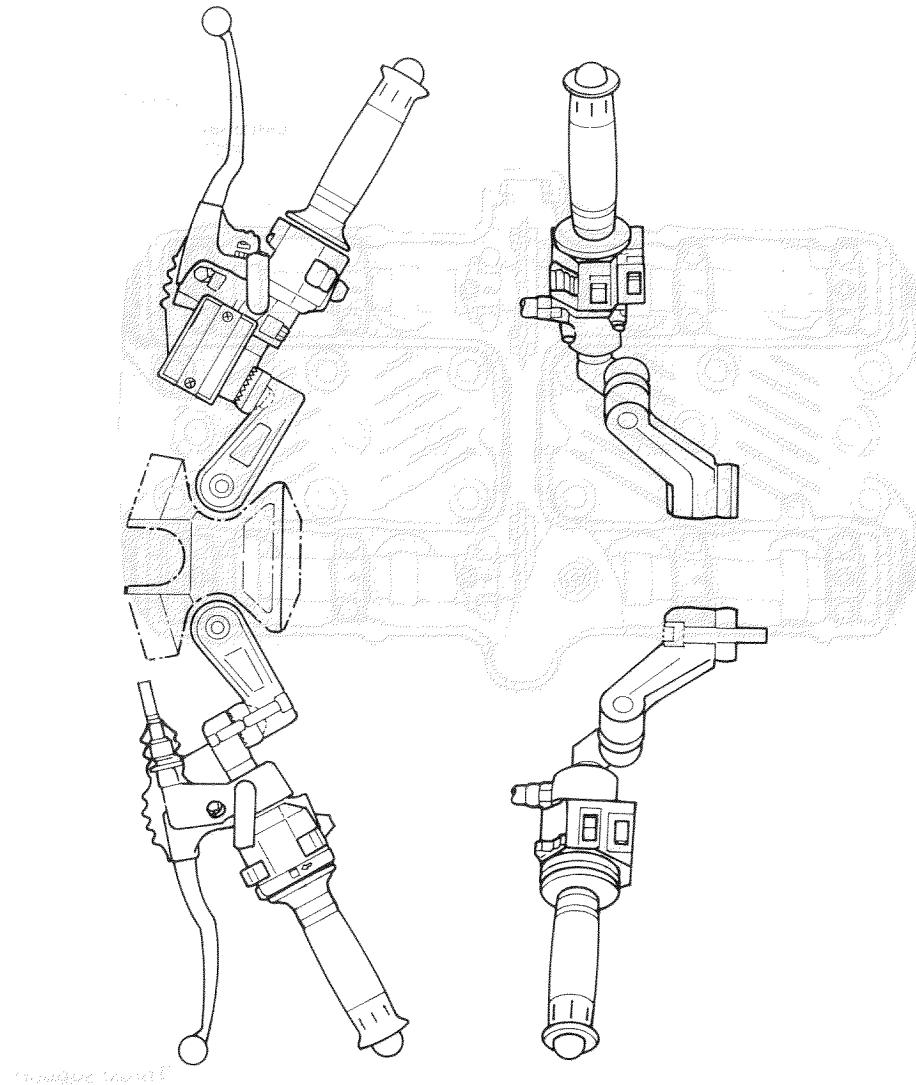


## 2-3. 4-point Supported Camshaft



(CHASSIS)

2-4. Adjustable Handle Bar



**Handlebars adjustment**

1. Vertical adjustment

Five-stage adjustment is possible.

- Remove the cap and loosen the grip bar installation bolt.

- Loosen the grip bar and turn and align the adjusting collar either clockwise or counterclockwise.

To adjust, turn the collar counterclockwise to raise the grip bar, turn the collar clockwise to lower the grip bar. (The red mark indicates the standard position.)

2. Horizontal adjustment

Four-stage adjustment is possible.

- Remove the cap and loosen the handlebar installation bolt.
- Loosen the handlebar and turn and align the adjusting collar either clockwise or counterclockwise.

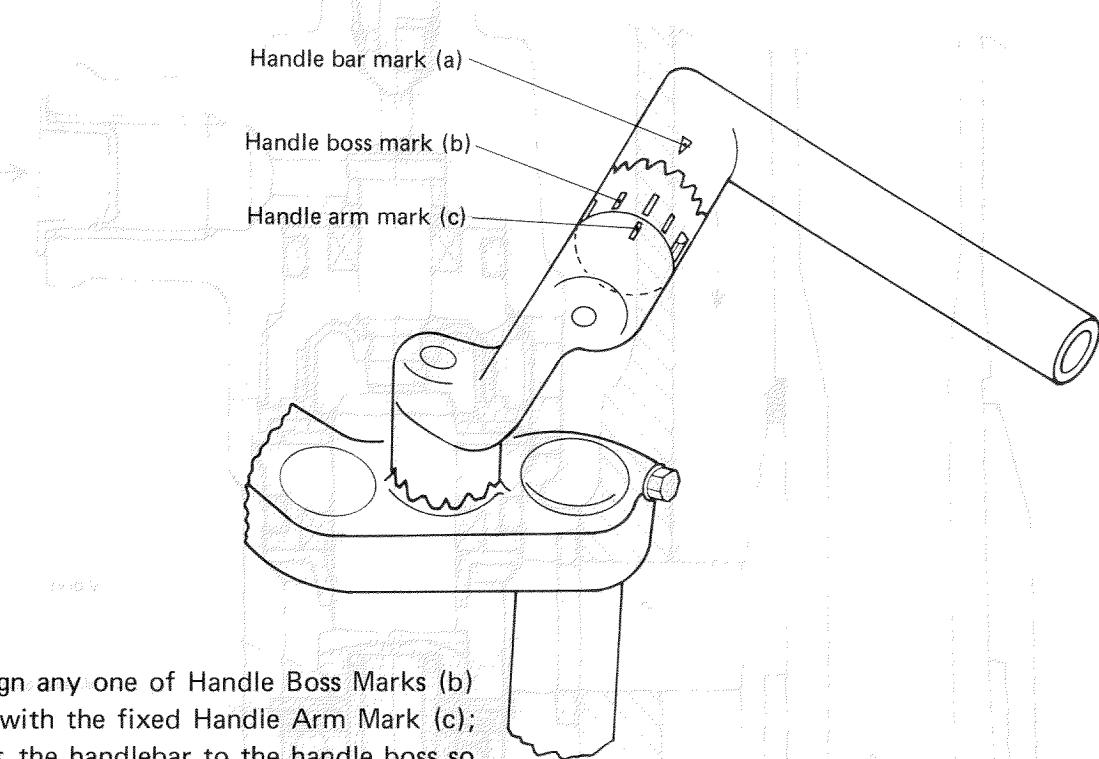
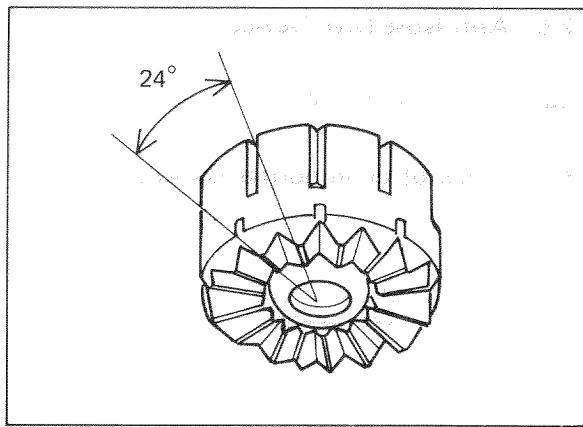
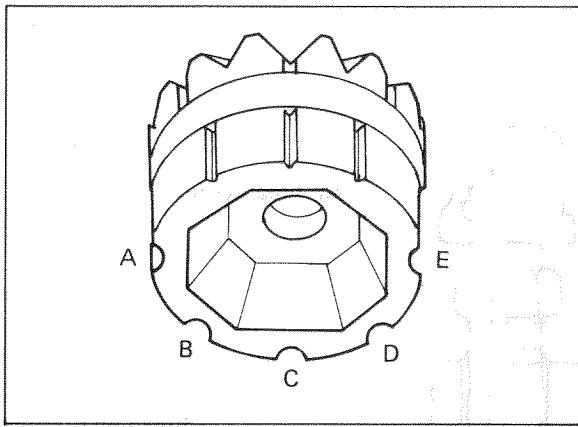
To adjust, turn the collar counterclockwise to move the handlebar inward, turn the collar clockwise to move the handlebar outward. (The red mark indicates the standard position.)

**NOTE:** \_\_\_\_\_

Check to see that the projection on the handlebar fits a notch in the collar.

**NOTE:** \_\_\_\_\_

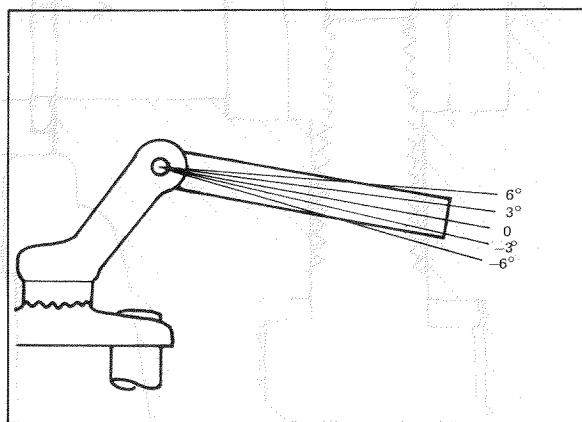
Check to see that the projection on the handlebar fits a notch in the collar.



First align any one of Handle Boss Marks (b) A to E with the fixed Handle Arm Mark (c); then, fit the handlebar to the handle boss so that its fixed Handle Bar Mark (a) comes nearest to the fixed Handle Arm Mark (c) in either of the chosen directions.

POSITION OF SLIT OF BOSS	A	B	C	D	E
POSITION OF HANDLE BAR (a)	-6°	-3°	0°	3°	6°
NORMAL					

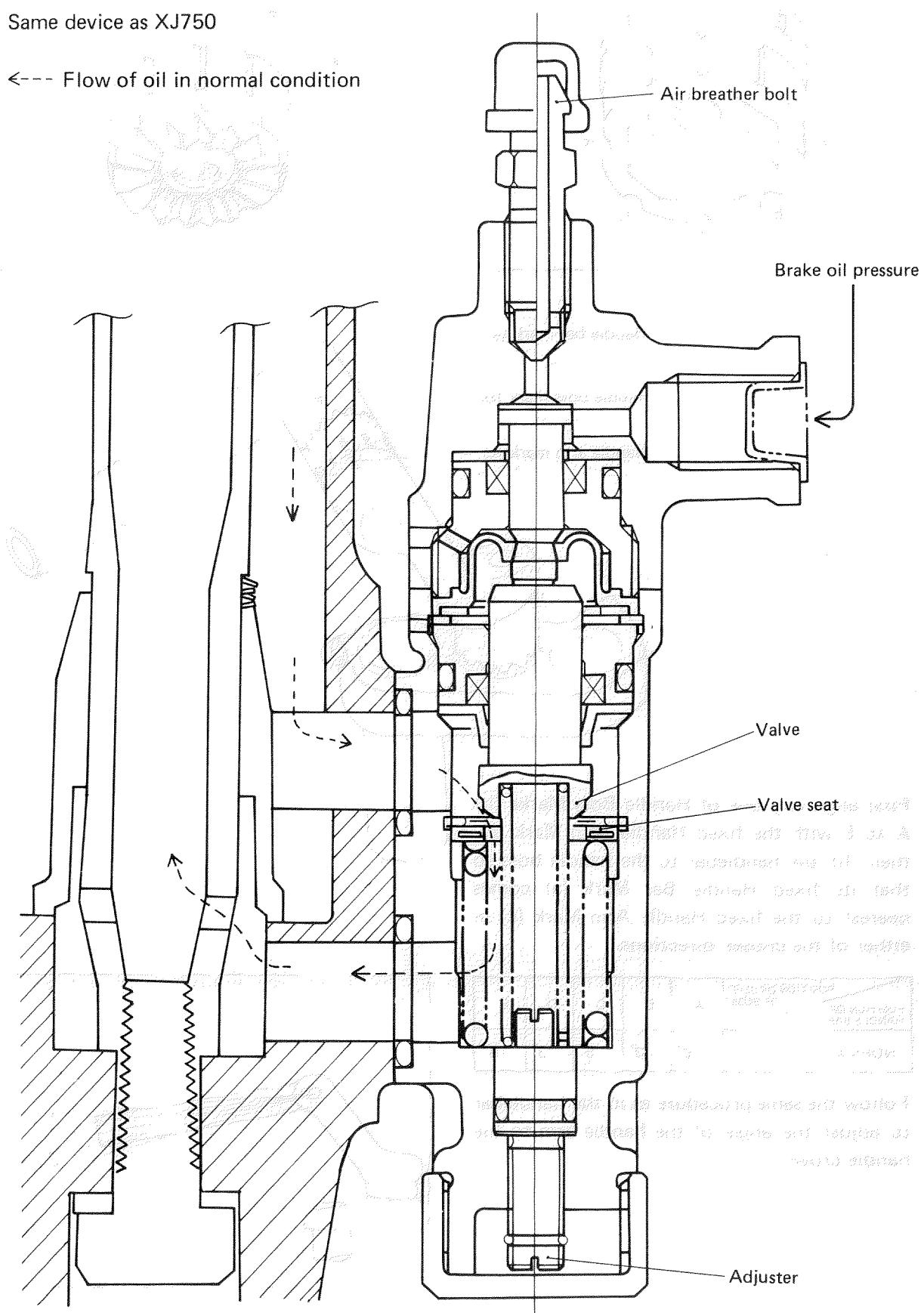
Follow the same procedure as in the handlebar to adjust the angle of the handle arm to the handle crown.



## 2-5. Anti Nose Dive Device

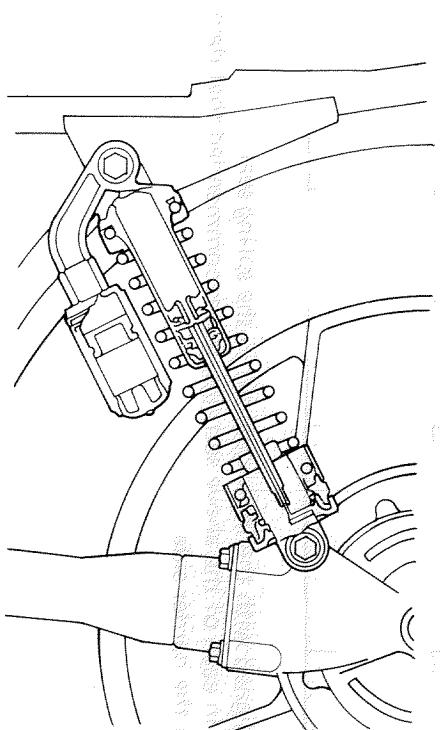
Same device as XJ750

<--- Flow of oil in normal condition



## 2-6. De Carbon Type Rear Shock Unit

Rear shock absorber



### Rear shock absorber adjustment

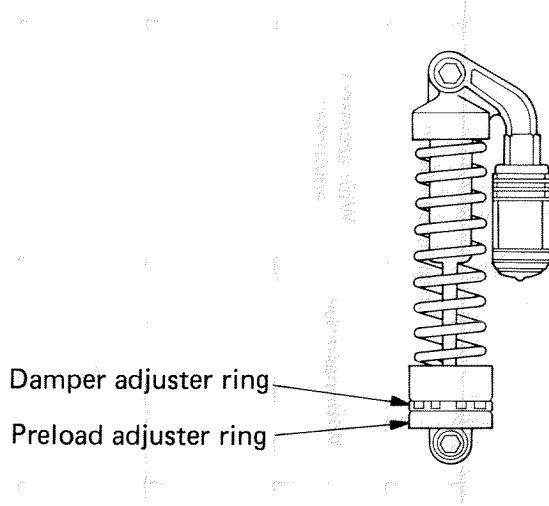
The rear shock absorber of this model features a spring seat, which is a combined spring preload and damping adjuster. Normal adjustment can be made by turning this spring seat, whereas damping adjustment only can be made by the damping adjuster.

#### CAUTION:

Before adjustment, make sure of the following:

1. Turn in the damping adjuster fully. Then turn it back until its red painted slit aligns with the pointer "▼" on the spring cover.
2. For alignment in the absence of the red paint, turn the damping adjuster 6 clicks back from the fully turned-in position.

By rotating preload adjuster, damper adjuster is rotated together due to both rings are spring loaded.  
Damper adjuster can be rotated by itself without rotating preload adjuster.



#### 1. Spring seat adjustment

To increase the preload, turn the spring seat clockwise. To decrease the preload, turn the spring seat counterclockwise.

	STIFF ←	STD
Mark	□ ▼ □ ▽	□

#### 2. Damping adjustment

To increase the damping, turn the adjuster clockwise. To decrease the damping, turn the adjuster counterclockwise.

Standard position: 6 clicks turns out  
(or red mark)

Minimum 12 clicks turns out  
Maximum 1 click turn out

#### NOTE:

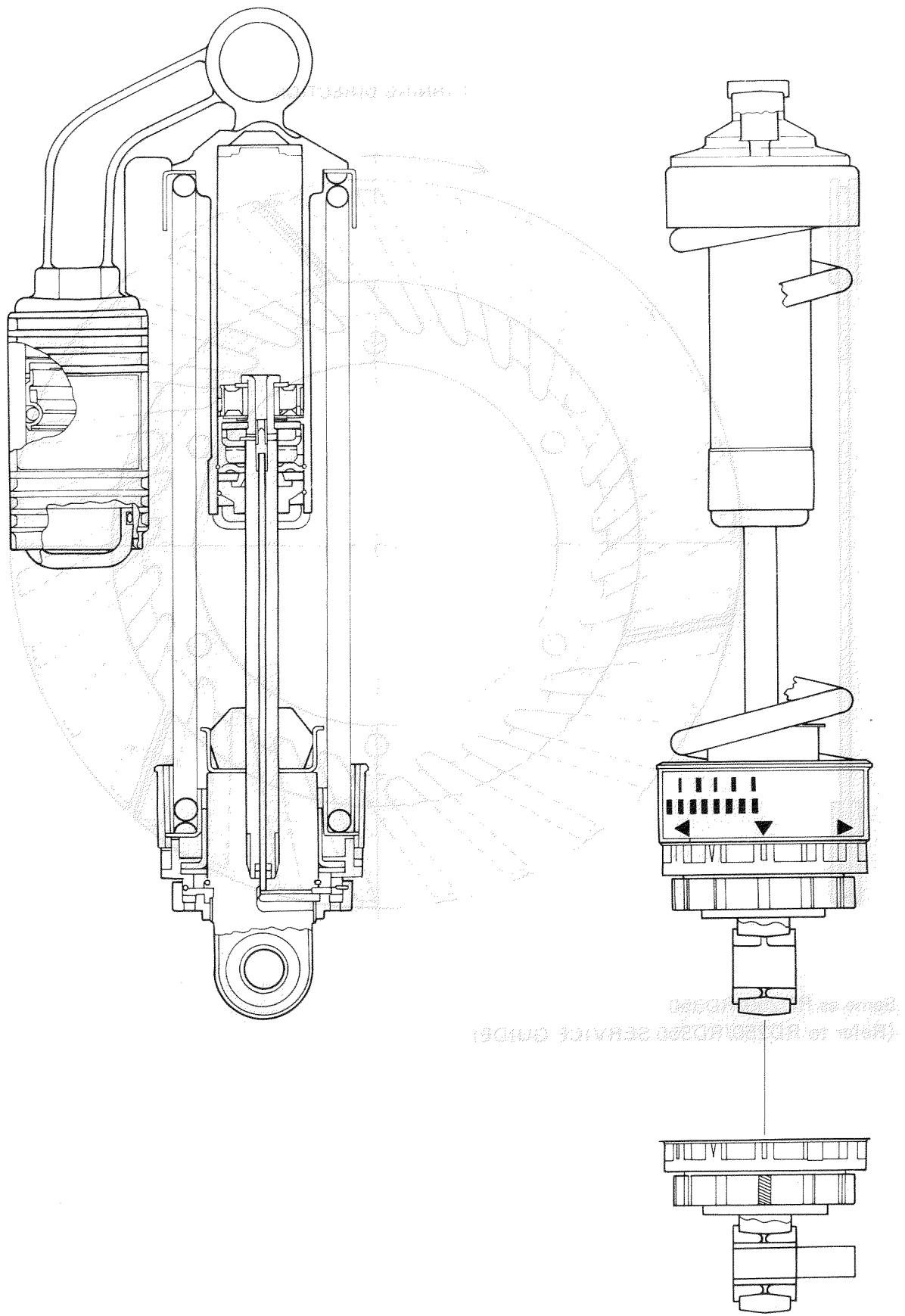
Make adjustment in less than one full turn of the adjuster.

**Recommended combinations of the front fork and the rear shock absorber settings.**  
**Use this table as guidance to meet specific riding and motorcycle load conditions.**

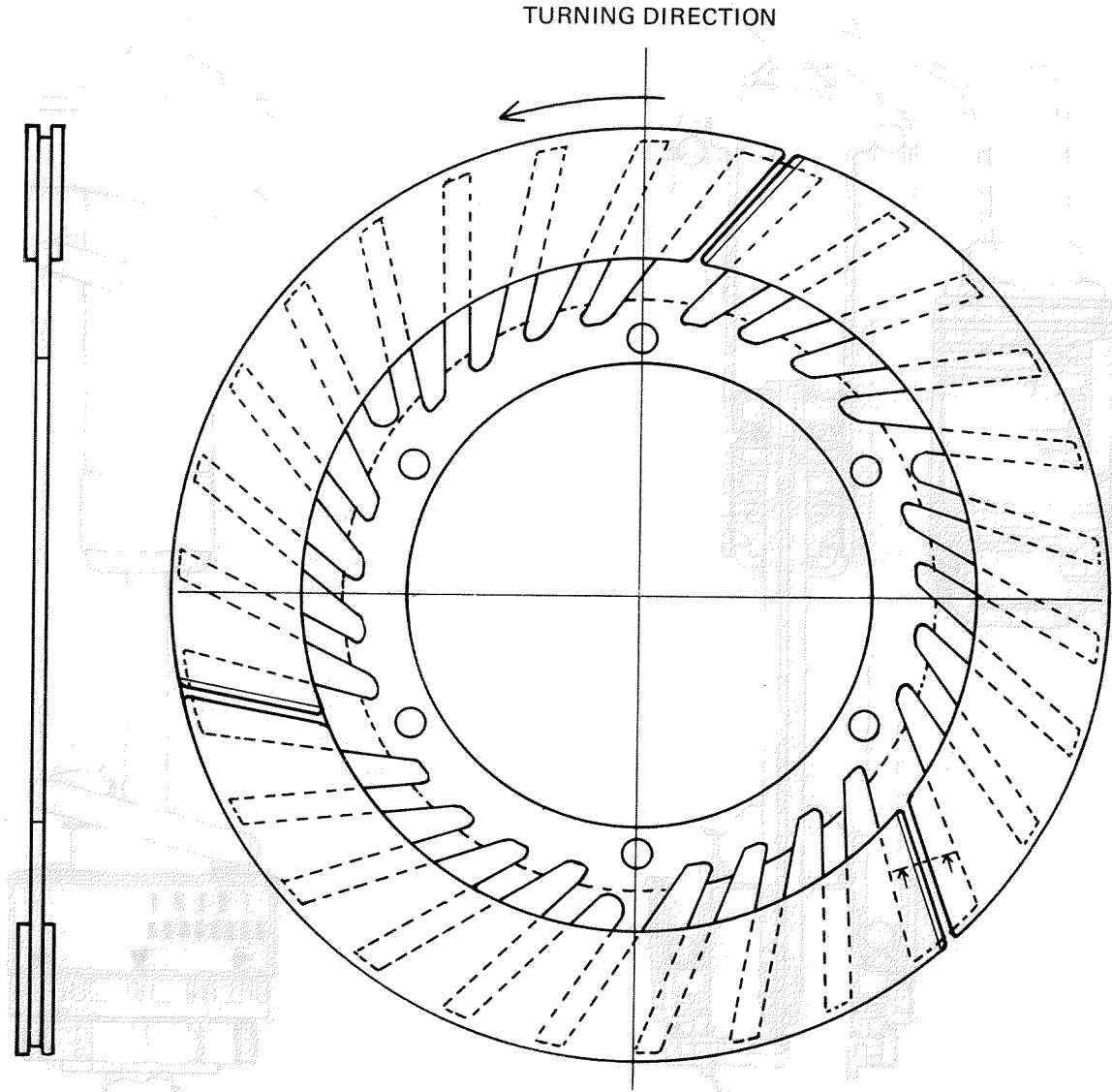
Front fork	Rear shock absorber	Loading condition		
		Damping adjuster turns out	Solo rider	With passenger
Air pressure  1 39.2~78.5 kPa (0.4~0.8 kg/cm <sup>2</sup> , 5.7~11.4 psi)	     	6		
2 39.2~78.5 kPa (0.4~0.8 kg/cm <sup>2</sup> , 5.7~11.4 psi)	     	4		
3 58.8~98.1 kPa (0.6~1.0 kg/cm <sup>2</sup> , 8.5~14.2 psi)	     	4		
4 78.5~118 kPa (0.8~1.2 kg/cm <sup>2</sup> , 11.4~17.1 psi)	     	3		

\*Each numeral shows the damping value which can be set when the pointer is aligned with the individual slit in the spring seat.

The damping adjuster may be further turned for a softer or a harder damping; in each of the above settings, it is recommended that damping be adjusted by one (1) or two (2) clicks on the softer side and one (1) click on the harder side.



## 2-7. Ventilated Brake Disc



Same as RD250/RD350  
(Refer to RD250/RD350 SERVICE GUIDE)

### 3. MAINTENANCE TABLE

#### 3-1. Pre-delivery Inspection

ITEMS	REMARKS
Engine oil level check	<p>Recommended oil:</p> <p>Yamalube 4-cycle oil or SAE 20W40 SE motor oil (a) SAE 10W30 SE motor oil (b)</p>
Fuel draining	
Carburetor synchronization	Use vacuum gauge
Front brake	<p>Free play: 5 ~ 8 mm</p> <p>Use DOT # 3 Brake fluid</p>
Clutch	Lever free play: 2 ~ 3 mm
Air bleeding	Brake master cylinder
Rear brake	<p>Pedal free play: 20 ~ 30 mm</p> <p>Use DOT#3 brake fluid</p>
Throttle grip	Free play at grip flange: 2 ~ 3 mm
Final gear oil	<p>Recommended oil: SAE 80 API GL-4 hypoid gear oil</p> <p>Oil quantity: 0.2 L</p>
Fuel cock	Cleaning the passage and drain the old fuel.

ITEMS	REMARKS
Headlight	Operation and beam adjustment
Battery	Check fluid level and breather pipe connection/routing
Cable routing	Refer to the Assembly Manual
Tire pressure	<p>Under 90 kgf load,  Front: 1.8 kgf/cm<sup>2</sup>  Rear: 2.0 kgf/cm<sup>2</sup></p> <p>90 ~ 225 kgf load,  Front: 2.0 kgf/cm<sup>2</sup>  Rear: 2.3 kgf/cm<sup>2</sup></p> <p>High speed riding:  Front: 2.0 kgf/cm<sup>2</sup>  Rear: 2.3 kgf/cm<sup>2</sup></p>
Tighten bolts/nuts	Refer to the Service Manual
Lights and signals	Check operation

### 3-2. Maintenance and Lubrication Chart

ITEM	REMARKS	BREAK-IN 1,000 (600) or 1 month	EVERY	
			6,000 (3,800) or 6 months	12,000 (7,500) or 12 months
Valve clearance*	Check/Adjust valve clearance.		<input type="radio"/>	<input checked="" type="radio"/>
Spark plug(s)	Check/Clean or replace.	<input type="radio"/>	<input type="radio"/>	REPLACE
Air filter	Clean or replace.		<input type="radio"/>	<input checked="" type="radio"/>
Carburetor*	Check/Adjust/idle speed, synchronization, starter operation.		<input type="radio"/>	<input checked="" type="radio"/>
Engine oil	Replace (Warm engine before draining).	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Engine oil filter*	Replace.	<input type="radio"/>		<input checked="" type="radio"/>
Final gear oil	Replace.		CHECK	CHECK
Brake*	Check operation/fluid leakage/See NOTE:		<input type="radio"/>	<input type="radio"/>
Clutch*	Check operation		<input type="radio"/>	<input type="radio"/>
Rear arm pivot bearings*	Check bearings assembly for looseness. Moderately repack. **Every 24,000 (15,000) Every 24,000 (15,000) or 24 months		CHECK	CHECK
Wheels	Check balance/damage/Runout		<input type="radio"/>	<input type="radio"/>
Wheel bearings*	Check bearings assembly for looseness/ damage. Replace if damaged.			<input type="radio"/>
Steering bearing*	Check bearings assembly for looseness. Moderately repack. ** Every 24,000 (15,000) or 24 months			CHECK
Front forks*	Drain completely — Check specifications.			REPLACE EVERY 24,000 (15,000)
Fittings/Fasteners*	Tighten before each trip and/or ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Battery*	Check specific gravity. Check breather pipe for proper operation.		<input type="radio"/>	<input type="radio"/>
A.C. Generator*	Replace generator brushes.			<input type="radio"/>

\* : It is recommended that these items be serviced by a Yamaha dealer.

\*\*: Medium weight wheel bearing grease.

#### NOTE:

##### Brake fluid replacement:

- When disassembling the master cylinder or caliper cylinder (clutch release cylinder), replace the brake fluid. Normally check the brake fluid level and add the fluid as required.
- On the inner parts of the master cylinder and caliper cylinder (clutch release cylinder), replace the oil seals every two years.
- Replace the brake (clutch) hoses every four years, or if cracked or damaged.

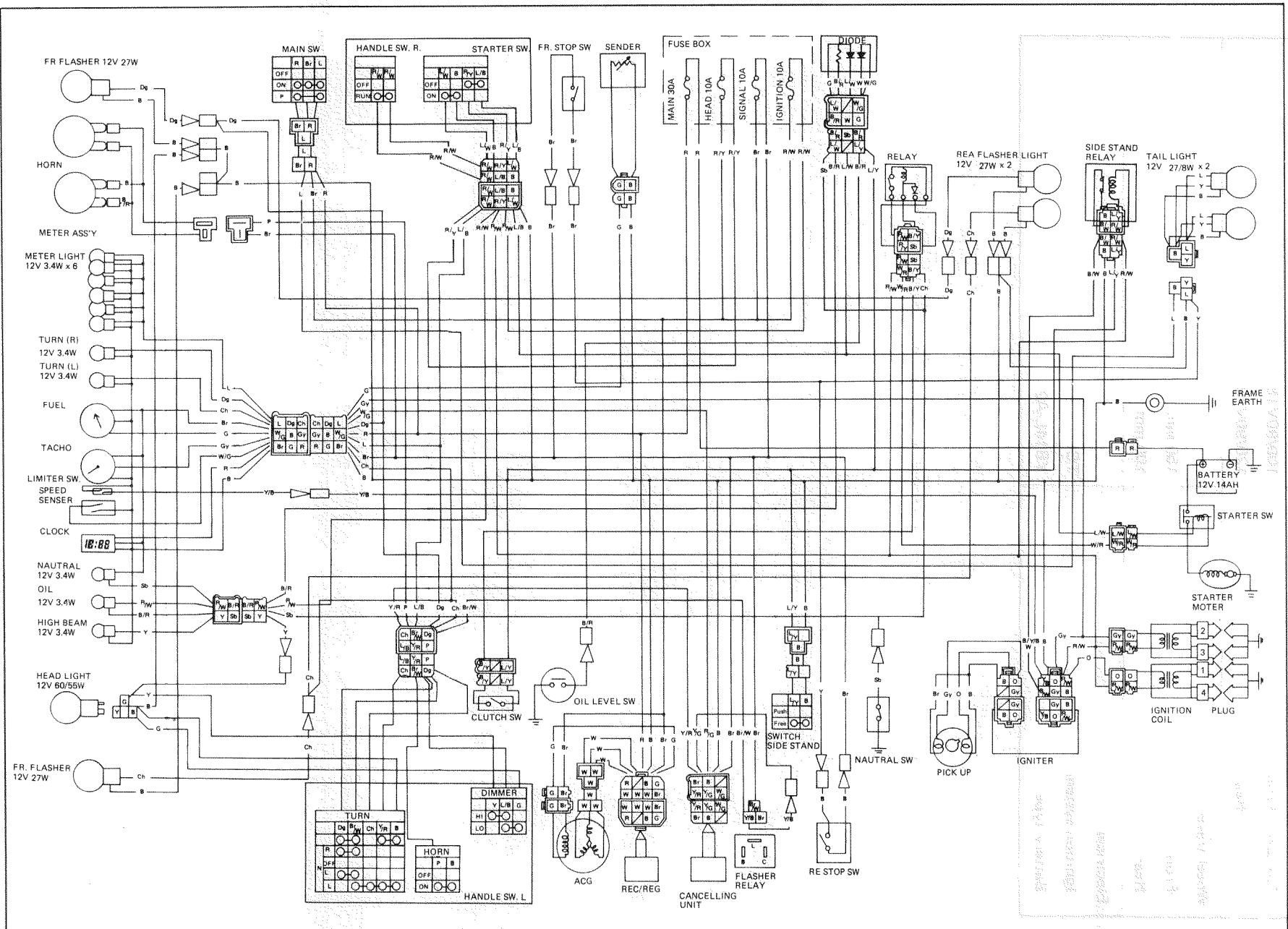
## 4. APPENDICES

Technical Information - Basic Equipment 2.3

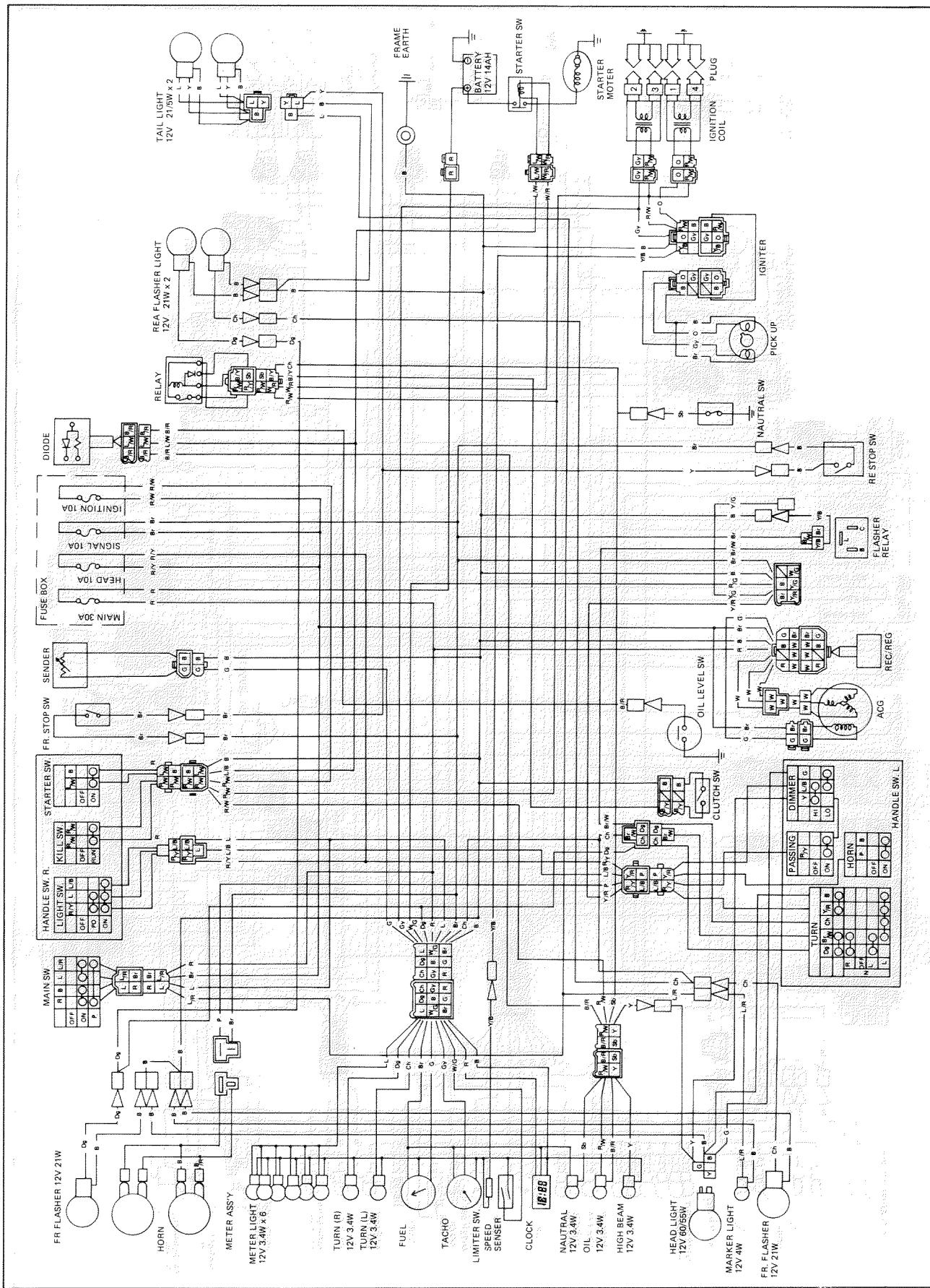
### 4-1. Specifications

<b>Model code</b>	31A (Europe), 32F (Switzerland), 31E (Canada) 35H (U.S.), 33F (Oceania)
<b>Overall length</b>	2,215 mm (Europe), 2,260 mm (Switzerland), 2,190 mm (Canada)
<b>Overall width</b>	735 mm
<b>Overall height</b>	1,240 mm
<b>Seat height</b>	790 mm
<b>Wheelbase</b>	1,480 mm
<b>Min. ground clearance</b>	150 mm
<b>Dry weight</b>	280 kgf
<b>Engine:</b>	
<b>Engine type</b>	Air cooled, 4-stroke, DOHC, parallel 4-cylinder
<b>Displacement</b>	853 cm <sup>3</sup>
<b>Bore x Stroke</b>	67 x 60.5 mm
<b>Compression ratio</b>	9.6 : 1
<b>Lubrication:</b>	
<b>Lubrication system</b>	Wet sump
<b>Engine oil type</b>	Yamalube 4-cycle or SAE 20W40 SE motor oil
<b>Final gear oil type</b>	SAE 80 API "GL-4" hypoid gear oil
<b>Oil capacity - Engine</b>	Periodic change: With oil filter replacement: Total amount: 3.6 L
<b>Final gear case</b>	0.2 L
<b>Fuel:</b>	
<b>Fuel tank capacity</b>	22L
<b>Fuel tank reserve amount</b>	5 L
<b>Carburetor:</b>	
<b>Type/Manufacturer</b>	BS35/MIKUNI
<b>Transmission:</b>	
<b>Primary reduction system/Ratio</b>	Spar gear/97/58 (1.672)
<b>Secondary reduction system/Ratio</b>	Shaft/ 48/37 x 19/18 x 32/11 (3.983)
<b>Gear ratio: 1st</b>	35/16 (2.187)
<b>2nd</b>	30/20 (1.153)
<b>3rd</b>	30/26 (1.153)
<b>4th</b>	28/30 (0.933)
<b>5th</b>	26/32 (0.812)

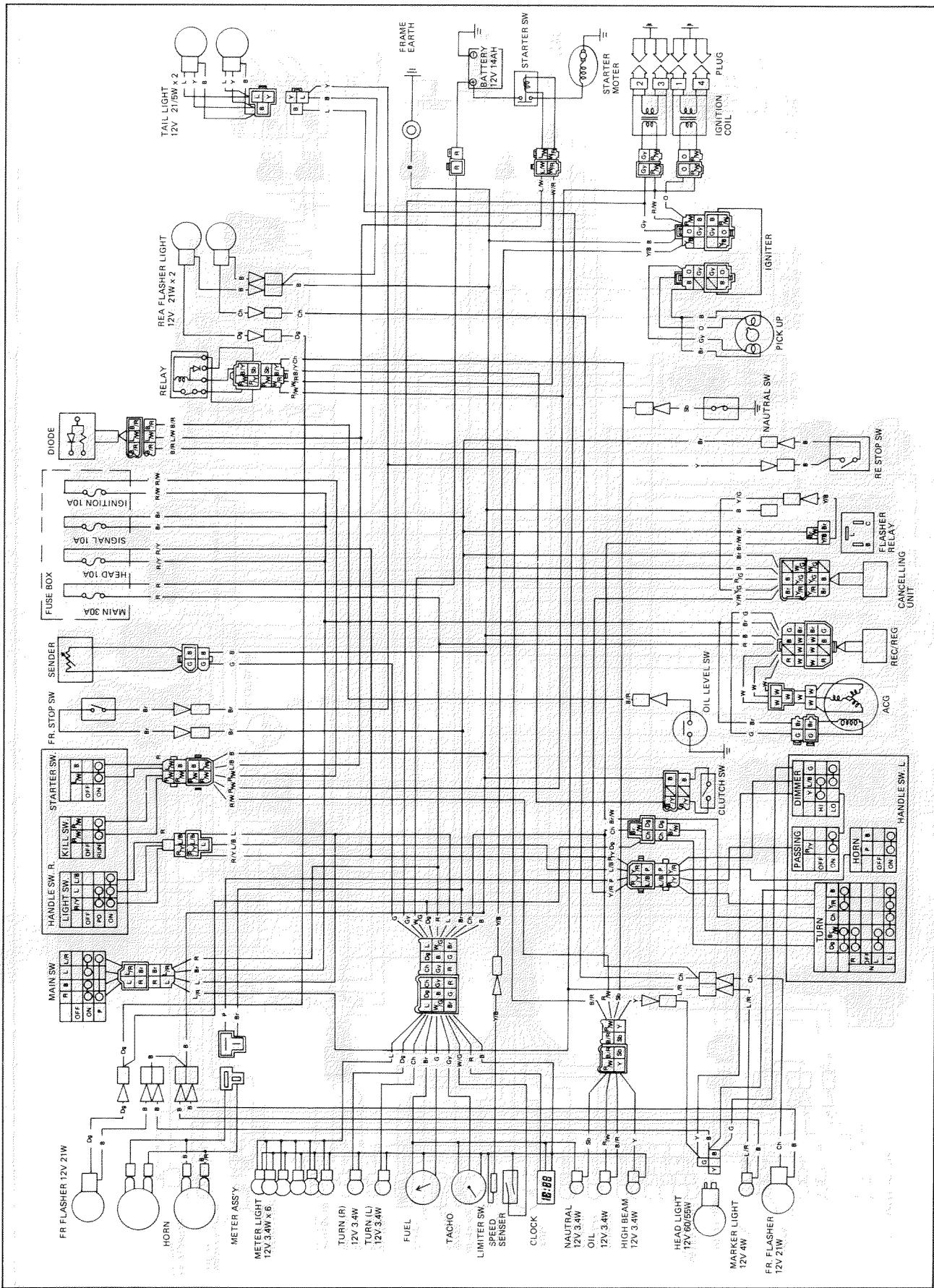
Tire:	
Tire size, Front	100/90V18
Rear	120/90V18
Wheel travel:	
Front	150 mm
Rear	100 mm
Electrical:	
Ignition system	TCI
Battery type	YB14L-A2



(For Germany)



(For Europe)



#### 4-3. Special Tools

OM32M

##### FOR TUNE-UP

- |                           |             |
|---------------------------|-------------|
| 1. INDUCTIVE TACHOMETER   | 90890-03113 |
| 2. INDUCTIVE TIMING LIGHT | 90890-03109 |
| 3. FUEL LEVEL GAUGE       | 90890-01312 |
| 4. COMPRESSION GAUGE      | 90890-03081 |
| 5. VACUUM GAUGE           | 90890-03094 |

##### FOR ENGINE SERVICE

- |                                    |             |
|------------------------------------|-------------|
| 6. CLUTCH HOLDING TOOL             | 90890-04086 |
| 7. TAPPET ADJUSTING TOOL           | 90890-01245 |
| 8. VALVE SPRING COMPRESSOR         | 90890-04019 |
| 9. VALVE GUIDE REMOVER             | 90890-01225 |
| 10. VALVE GUIDE REAMER             | 90890-01227 |
| 11. VALVE GUIDE INSTALLER          | 90890-04017 |
| 12. VALVE SEAT CUTTER SET          | YM-91043    |
| 13. PISTON RING COMPRESSOR         | 90890-04044 |
| 14. PISTON BASE                    | 90890-01067 |
| 15. PISTON PIN PULLER              | 90890-01304 |
| 16. CAM CHAIN CUTTER               | 90890-01112 |
| 17. ROCKER ARM SHAFT PULLER        | 90890-01083 |
| 18. ROCKER ARM SHAFT PULLER WEIGHT | 90890-01084 |
| 19. Y.I.C.S. SHUT OFF TOOL         | 90890-04068 |
| 20. ROTOR PULLER                   | 90890-01080 |
| 21. ROTOR PULLER ATTACHMENT        | 90890-01312 |
| 22. ROTOR HOLDING TOOL             | 90890-04043 |
| 23. PLASTIGAUGE SET "GREEN"        | YU-33210    |

##### FOR CHASSIS SERVICE

- |                                |             |
|--------------------------------|-------------|
| 24. T-HANDLE ROD HOLDER        | 90890-01326 |
| 25. FRONT FORK CYLINDER HOLDER | New (NA)    |
| 26. FORK SEAL DRIVER           | New (NA)    |
| 27. RING NUT WRENCH            | 90890-01051 |

##### FOR MIDDLE GEAR SERVICE

- |                                   |             |
|-----------------------------------|-------------|
| 28. MIDDLE DRIVE SHAFT NUT WRENCH | 90890-04045 |
| 29. MIDDLE DRIVE SHAFT HOLDER     | 90890-04046 |
| 30. DAMPER SPRING COMPRESSOR      | 90890-04090 |
| 31. TORX WRENCH (T-40)            | 90890-04049 |
| 32. GEAR LASH MEASUREMENT TOOL    | 90890-01231 |
| 33. MIDDLE DRIVE PINION HOLDER    | 90890-04051 |
| 34. DIAL GAUGE                    | 90890-03097 |

##### FOR FINAL GEAR SERVICE

- |  |             |
|--|-------------|
| 35. FINAL DRIVE GEAR LASH TOOL                       | 90890-01230 |
| 36. RING GEAR HOLDER                                 | 90890-01254 |
| 37. FINAL DRIVE GEAR HOLDING TOOL                    | 90890-01229 |
| 38. DRIVE PINION BEARING RETAINER REMOVER            | 90890-04050 |
| 39. ARMATURE SHOCK PULLER (M10 x 1.25)               | 90890-01290 |
| 40. ARMATURE SHOCK PULLER WEIGHT                     | 90890-01291 |
| 41. CRANK INSTALLER ADAPTER (M10 x 1.25 - M14 x 1.5) | 90890-01277 |
| 42. SHAFT DRIVE PULLER                               | 90890-04012 |

##### FOR ELECTRICAL COMPONENT SERVICE

- |                    |             |
|--------------------|-------------|
| 43. ELECTRO TESTER | 90890-03021 |
| 44. POCKET TESTER  | 90890-03104 |