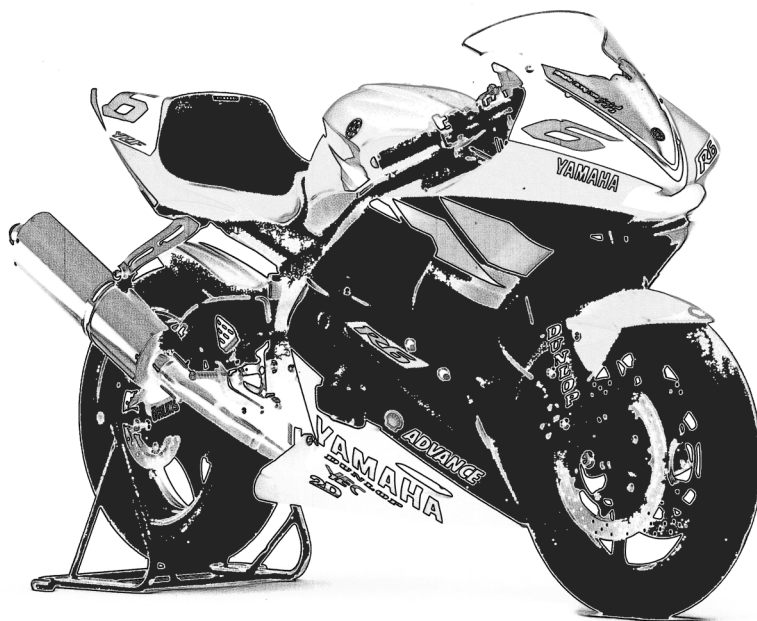


'04 YZF-R6 SS KIT MANUAL



The Performance Edge

for excellent riders



2003 YZF-R6 Kit Manual

Please note:

- Please understand that these parts are not covered by the warranty.
- The manufacturer does not take any responsibility for problems caused by these parts.
- These kit parts are intended exclusively for racing purposes. You are strictly requested not to use them for use on public roads.
- The specifications and usage methods of these kit parts along with the contents of this manual are subject to change without notice for improvement.
- This manual has been written for persons having knowledge and experience in the field of motorcycles. Please refer to the service manual for information on part assembly and maintenance.

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1 Standard Specifications (SS spec.)

Item	Spec
Engine type	Liquid-cooled, 4-stroke, In-Line DOHC 4-valve
Displacement	599.7 cc
Bore × stroke	65.5 mm × 44.5 mm
Compression ratio	12.4 – 13.0 : 1
Valve timing (event angle)	
Intake	= 105°
Exhaust	= 110°
Squish height	0.60 mm (minimum)
Minimum valve x piston clearance	
Intake	= 0.75 mm (minimum), 10° after exhaust top dead center
Exhaust	= 1.75 mm (minimum), 11° before exhaust top dead center
Valve (tappet) clearance	
Intake	= 0.20 ±0.03 mm
Exhaust	= 0.30 ±0.03 mm
Throttle body	38EIS MIKUNI minimum bore = 37.5 mm, throttle bore = 38.0 mm
Exhaust system	4-2-1 system, #1-2, #3-4 exhaust pipe coupling
Transmission	Constant mesh type, 6 speeds
Clutch	Wet, multi-disk type
Ignition system	DC-CDI

2 Kit Parts

2-1 Basic Kit Set Contents

Spark Plug Set (You can use STD SPARK PLUGS)

Head Gasket (t = 0.45 mm)

Camshafts and Cam Sprockets

Air Funnel Set (Bell Mouth Set)

Air Filter Element Assembly

AIS Plug Set

Clutch Spring Set

ACM Set

ECU and Wire Harness Set

Kit Manual

CAUTION:

Although those parts indicated with an asterisk (*) in the parts list are included in the kit set, when individual parts are required, they are available through the general parts sales channel.

2-2 Engine Parts

1. Maintenance Set (5SL-MAINT-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
*	1	5SL-11181-00	GASKET, CYLINDER HEAD	3	
*	2	5SL-11603-00	PISTON RING SET	12	
*	3	93210-17129	CIRCLIP	24	
*	4	5SL-1165A-00	BOLT, CON-ROD	24	
*	5	90179-07652	NUT	24	
*	6	4TV-12119-00	SEAL, VALVE STEM	48	
*	7	4FM-12213-00	GASKET, TENTIONER	3	
*	8	5SL-13414-00	GASKET, STRAINER	3	
*	9	5SL-15451-00	GASKET, COVER 1	3	
*	10	5SL-15461-00	GASKET, COVER 2	3	
*	11	5SL-15456-00	GASKET 1	3	
*	12	5SL-15463-00	GASKET 2	3	
*	13	93102-35423	SEAL, OIL	3	FOR DRIVE AXLE
*	14	90215-20231	WASHER	3	FOR CLUTCH BOSS
*	15	90151-06008	SCREW	9	FOR BEARING HOUSING

2. Spark Plugs

Parts List

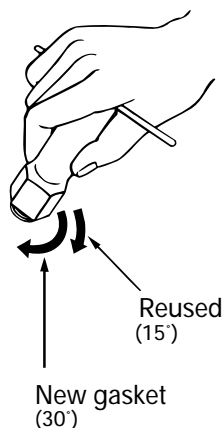
No.	PART No.	PART NAME	Q'TY	REMARKS
1	5FL-94700-70	PLUG, SPARK	1	NGK R0045Q-10

Set No.: 5FL-R045Q-70 (R0045Q-10, 4 plugs)

CAUTION:

Since these spark plugs use a copper gasket, caution is required with respect to the following points during installation.

1. The tightening torque is 1.0 – 1.2 kg·m.
2. When not controlling torque, tighten by turning only 30° after tightening by hand in the case of new plugs. When reusing plugs, turn 15° to tighten.



3. AIS Plug Set (5SL-A4890-70)

This plug set is used when AIS (Air Induction System), which is a device for purifying exhaust emissions, is removed.

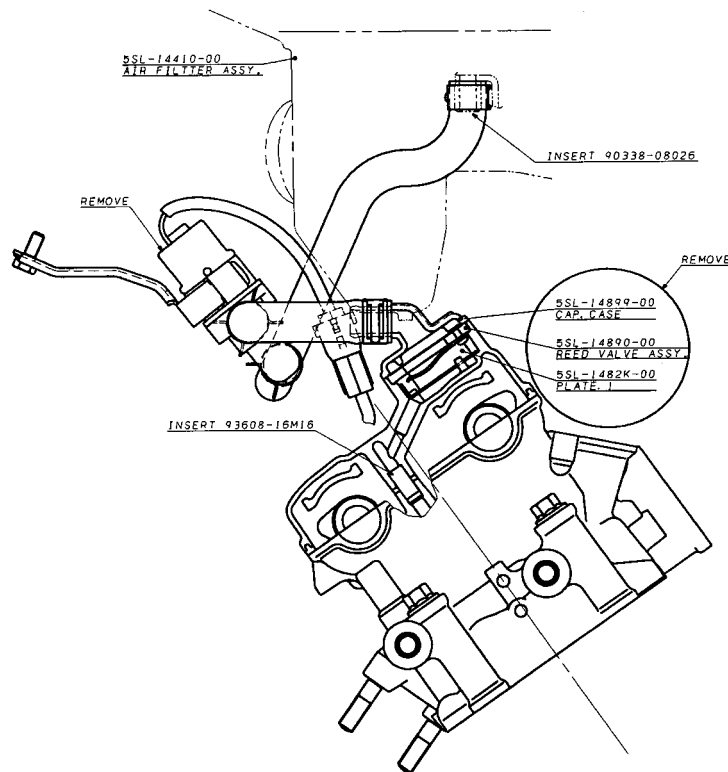
Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-1482L-70	PLATE	2	
2	93608-16M16	PIN	4	
3	90338-08026	PLUG	1	

Installation

1. Remove the hose and accompanying air-cut valve assembly from the cylinder head cover.
2. Remove the cap from the hose and take out the reed valve and plate from inside.
3. Install the plate (5SL-1482L-70) in place of the cap. Be sure to apply liquid gasket to the plate.

4. Remove the cylinder head cover, then the four collars fitted in the head cover, and install the PIN (93608-16M16).
5. After removing the hose that was connected from the air-cut valve assembly to the air filter case, push in the plug (90338-08026) on the air filter side to clog up.



4. Head Gaskets

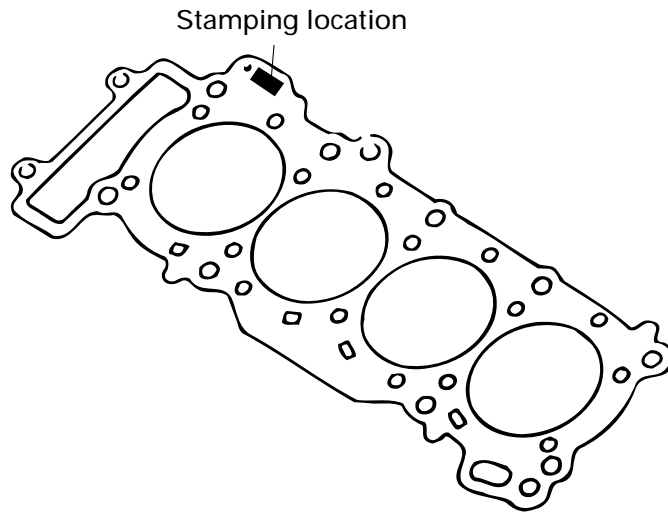
Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-11181-70	GASKET, HEAD CYL.	1	t=0.40 mm
2	5SL-11181-75	GASKET, HEAD CYL.	1	t=0.45 mm
3	5SL-11181-80	GASKET, HEAD CYL.	1	t=0.50 mm
4	5SL-11181-85	GASKET, HEAD CYL.	1	t=0.55 mm

- The standard gaskets have a thickness of 0.60 mm.
- These gaskets are used to adjust squish height. They are normally used at a squish height of -75 (0.45 mm). In the case of machining the cylinder (upper case), always make sure to measure the squish height and select the gaskets so that it is 0.60 mm or more.

NOTE:

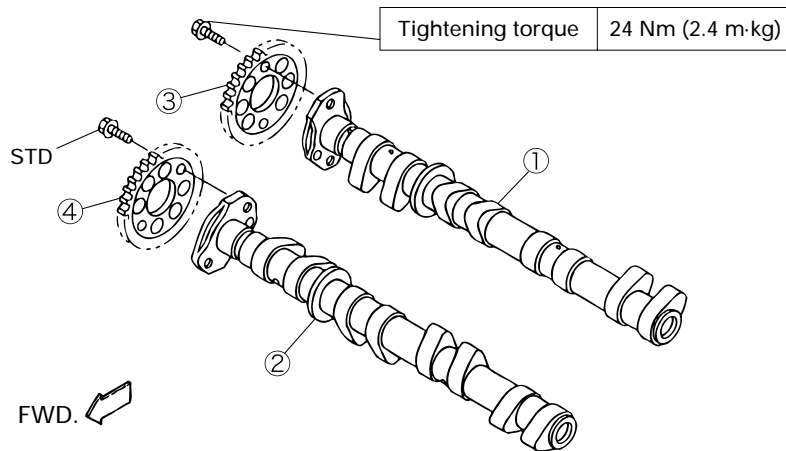
Squish height refers to the clearance between the flat surface of the piston and the surface along the head cylinder.



5. Camshaft and Cam Sprockets

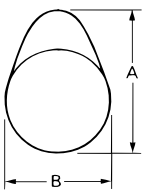
Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-12171-70	SHAFT, CAM 1	1	INT.296
2	5SL-12181-70	SHAFT, CAM 2	1	EXT.284
3	5SL-12176-70	SPROCKET, CAM 1	1	105°
4	5SL-12177-70	SPROCKET, CAM 2	1	110°



Specifications

	Intake	Exhaust
Working angle	296°	284°
Valve timing (sprocket)	105°	110°
Valve clearance	0.17 – 0.23 mm	0.27 – 0.33 mm
Cam lobe	a: 33.45 – 33.55 mm b: 25.16 – 25.26 mm	a: 32.55 – 32.65 mm b: 25.09 – 25.19 mm

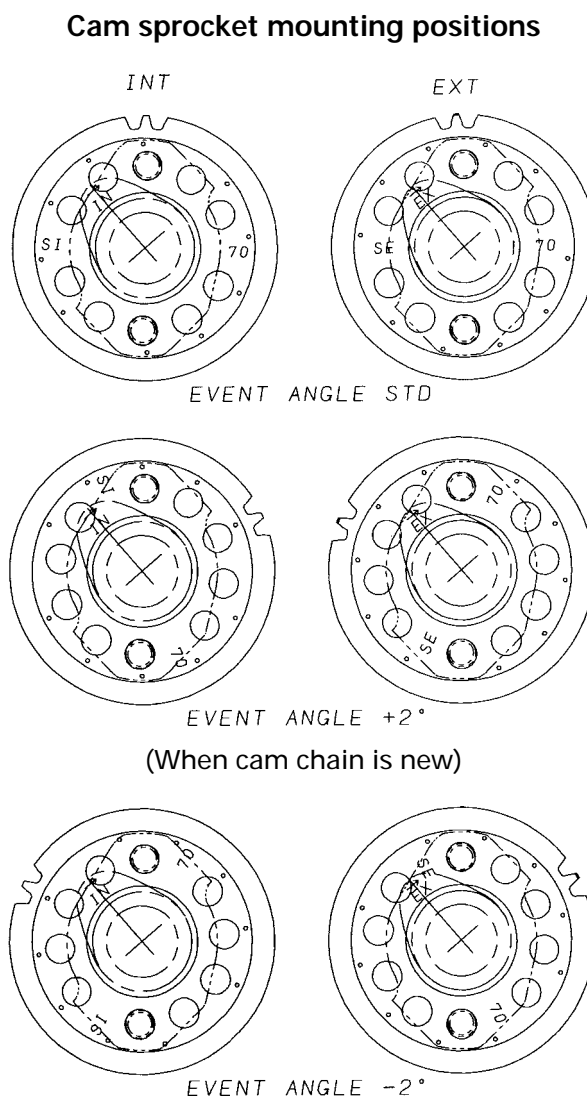


Aligning of Valve Timing

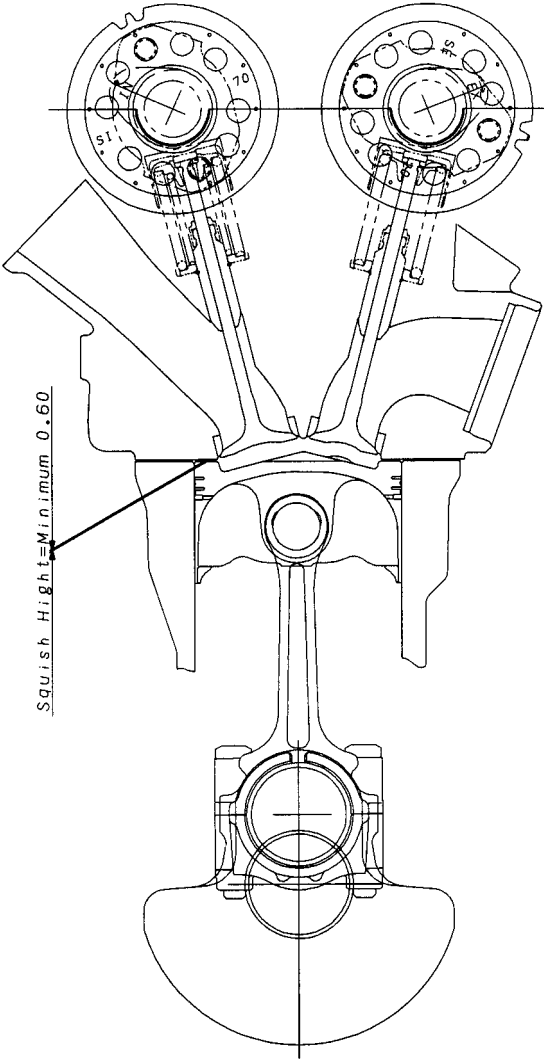
- When assembling the camshaft, always make sure to align the valve timing. If this is not done, not only will performance not be enhanced when the camshaft is assembled, it will also cause damage to the engine.
- The valve timing (event angle) here refers to a crank angle formed from top dead center when the valve is lifted highest.
- Use the cam sprocket included in the kit for aligning valve timing. The cam sprocket included in the kit allows selection of five valve timings. In the case of aligning for the purpose of attaining a minimum squish height of 0.60 mm, use of the center mounting hole allows setting for intake valve timing of 105° and exhaust valve timing of 110°.
- Valve timing adjustment range can be changed to either $\pm 1^\circ$ or $\pm 2^\circ$ relative to the center mounting hole.

CAUTION:

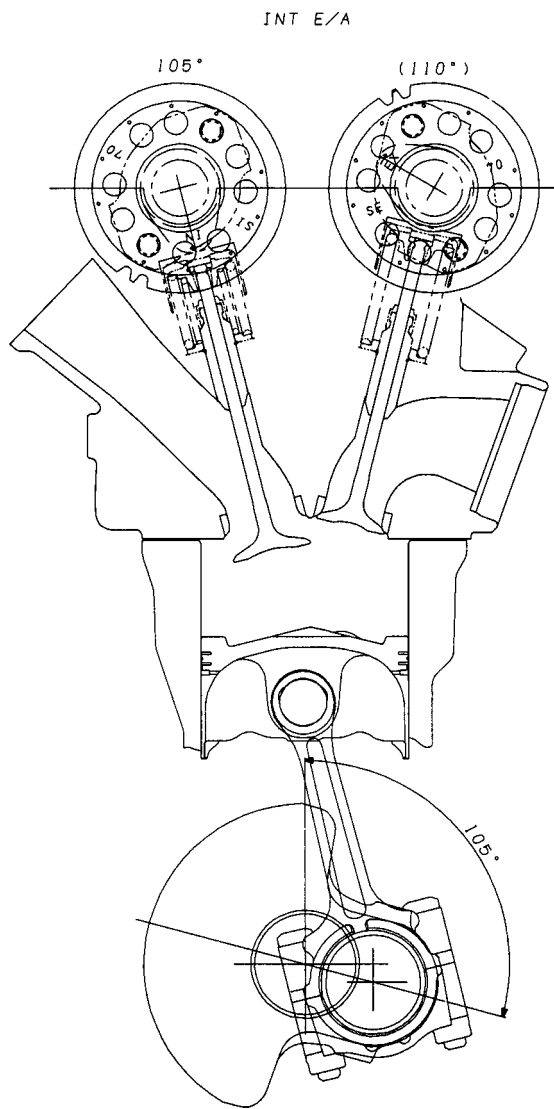
1. In the case of using a new cam chain, make sure to wear in by assembling on the cam sprockets as shown in the diagram below. Since the cam chain stretches by approximately 1° after completion of wear-in, adjust by changing the cam sprocket mounting positions after re-measuring the cam timing.



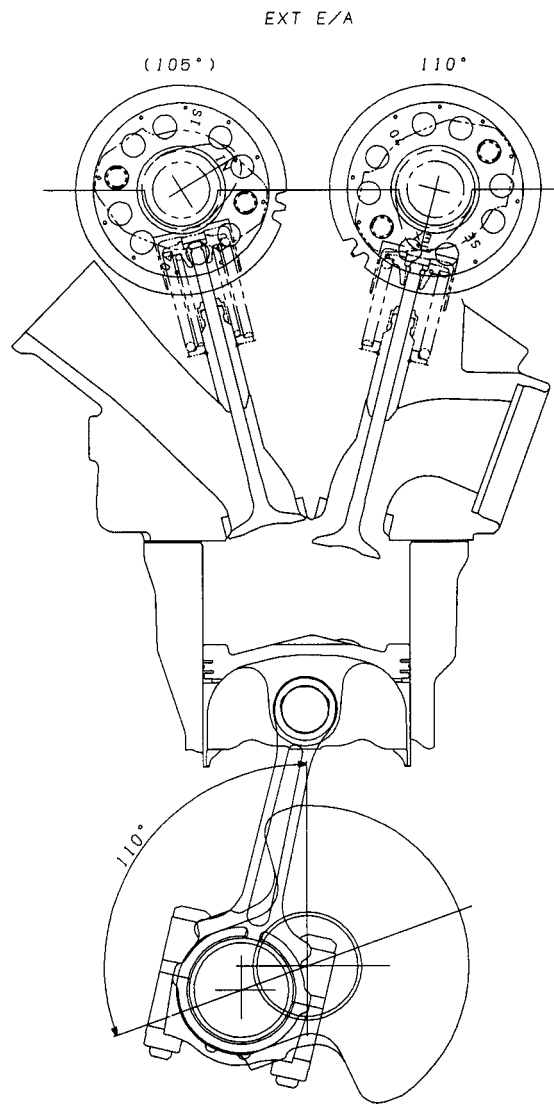
KIT SET UP POSITION



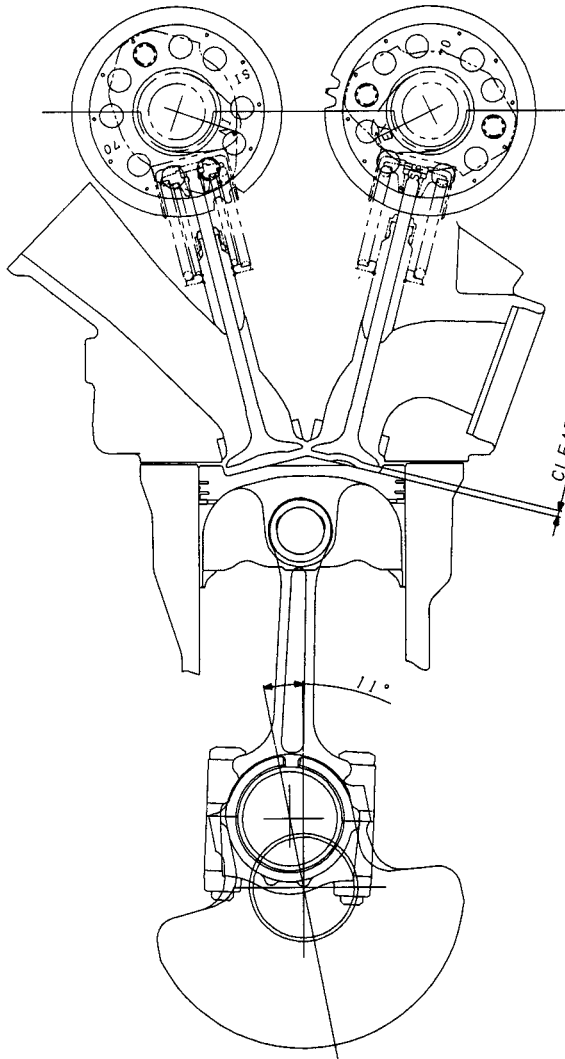
EVENT ANGLE INT.



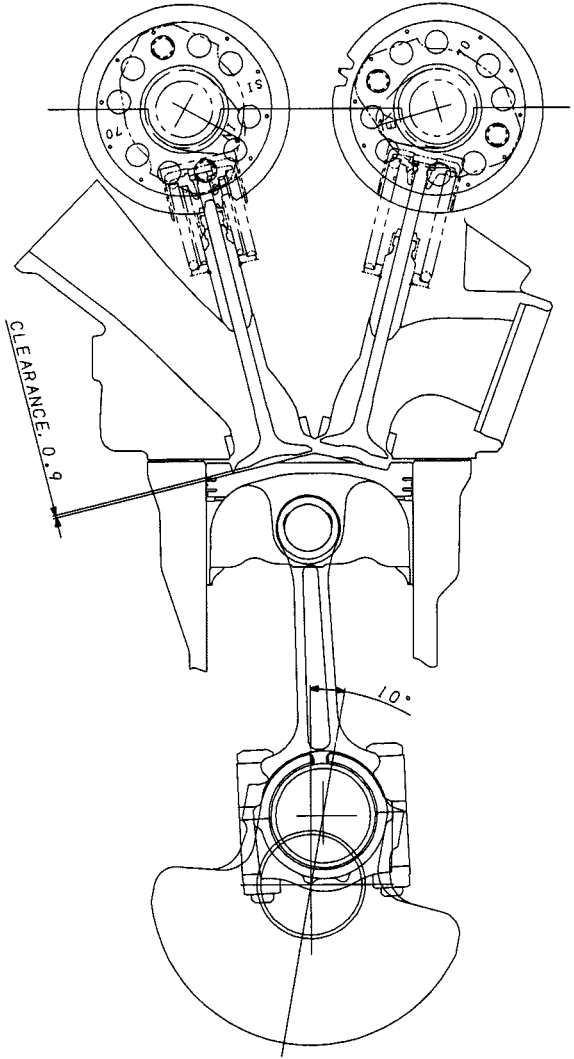
EVENT ANGLE EXT.



EXT. MINIMUM CLEARACE



INT. MINIMUM CLEARACE



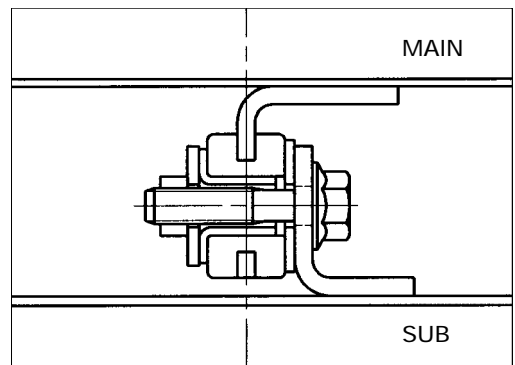
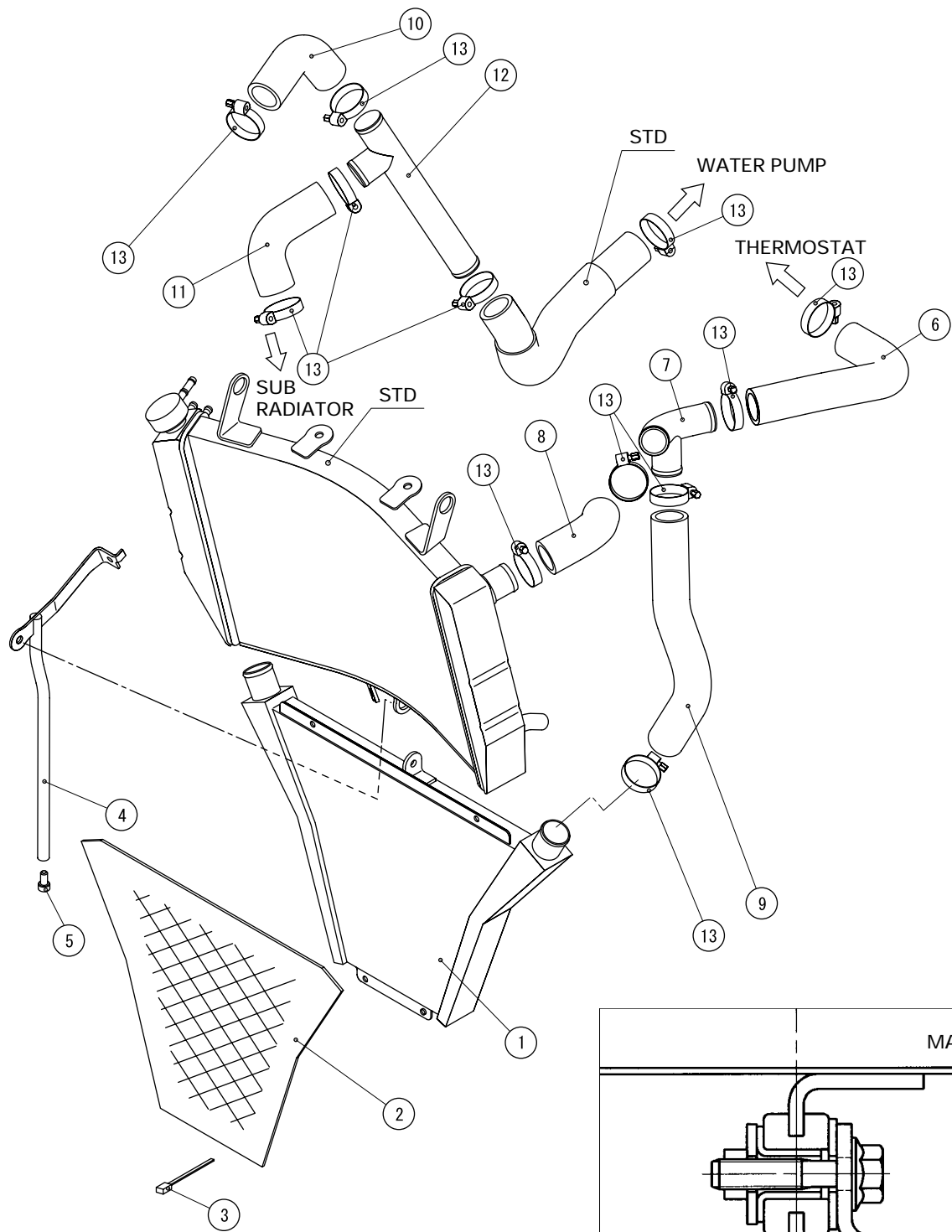
6. Sub Radiator Set (5SL-A240A-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	5SL-1240A-80	SUB RADIATOR ASSY	1	
	2	5SL-12467-70	COVER, RADIATOR	1	
*	3	90465-13275	CLAMP	4	
	4	5SL-1244E-70	BRKT., 1	1	
*	5	91317-06012	BOLT	1	
	6	5SL-12578-70	HOSE, 3	1	
	7	5SL-12584-70	JOINT, HOSE 3	1	
	8	5SL-12579-70	HOSE, 4	1	
	9	5SL-12552-70	HOSE, 8	1	
	10	5SL-12589-70	HOSE, 6	1	
	11	5SL-12588-70	HOSE, 5	1	
	12	5SL-12582-70	JOINT, HOSE 2	1	
*	13	90450-38040	HOSE CLAMP ASSY.	12	

Installation Precautions

1. This kit assumes that the muffler kit set is used. It cannot be mounted on the STD muffler by itself, or may not be mounted either when a competitor's muffler is installed.
2. Use the STD main radiator. Also use the STD hose that goes into the radiator from the oil cooler.
3. Remove the cleaning fan attached to the STD radiator.
4. Do not fasten the hose clamp too tight. The hose may become deformed and leak water.
5. After installation, check that the radiator and hose are not in contact with the exhaust pipe.
6. Pass the clutch wire alongside on the outside of ⑫ (Joint, hose)
7. Trapped air in the water passage reduces the cooling efficiency. When refilling water, incline the motorcycle right and left to allow no water to remain in the water passage. After refilling, idle run the engine for a while with the radiator cap removed. Then add water to fill up the vacancy produced by escaping water and tighten the cap securely on the radiator.



Upper assembly diagram (viewed in front)

7. Oil Pump Set (5MT-A3100-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5MT-13336-00	HOUSING, ROTOR	1	
2	5EB-13316-70	COVER, PUMP	1	
3	5EB-13330-70	PUMP SHAFT ASS'Y	1	
*	1WG-13310-00	ROTOR ASS'Y	1	
*	93603-17070	PIN, DOWEL	1	
*	93603-09106	PIN, DOWEL	2	
*	91317-06025	BOLT	3	
*	90201-113K2	WASHER	1	
9	5MT-13319-70	SPACER	1	

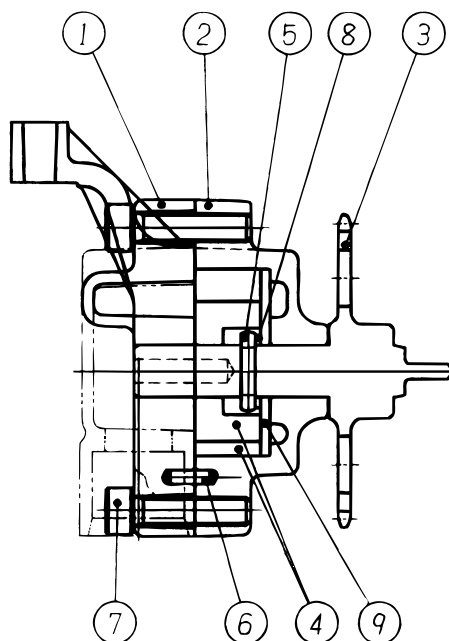
This kit reduces loss at high engine speeds by decreasing the rotor width. This can be expected to result in a 1 – 2% improvement in output.

CAUTION:

During maintenance, place engine oil inside the pump after assembling and rotate the shaft to confirm that it rotates smoothly.

Since the amount of oil discharged is less than the STD oil pump, do not run the engine at engine speeds of 3000 rpm or below for long period of time (30 minutes or more). Operation at low engine speeds for an extended period of time can cause engine problems.

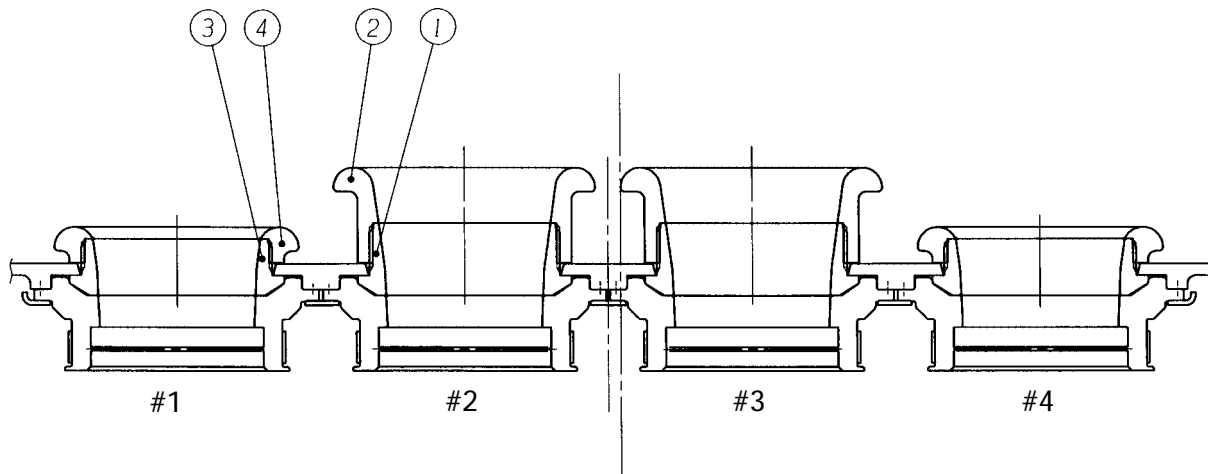
In the case of installing in a 1999 or 2000 engine, use the housing of the STD oil pump for housing ①.



8. Air Funnel Set (Bell-Mouth Set) (5SL-A4460-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-14463-70	JOINT. 2	2	
2	5SL-14469-75	FUNNEL, 1	2	L=24 mm
3	5SL-14454-70	JOINT	2	
4	5SL-14479-70	FUNNEL	2	L=9 mm



Installation Precautions:

1. Install the joint and funnel so that the air filter is located in-between. Before installation, remove the plate attached under the STD air filter case and then the STD funnel.
2. Install the funnel and joint after applying a thin coat of grease to their threads. They may have a little gap between them and the case but do not become loose with the STD rubber joint and plate fastened.
3. For the standard settings, use the 9 mm funnel for the #1 and #4 cylinders and the 24 mm funnel for the #2 and #3 cylinders. This combination may change according to the exhaust pipe specifications or to the rider's preference.
4. Tendency subject to the funnel combination is as follows:
 When the longer STD funnel is used for the #2 and #3 cylinders, power tends to be weaker in the high rev range but easier to handle in the medium-rev range.
 When the shorter STD funnel is used, the engine tends to be more responsive in the high-rev range but produce less torque in the medium-rev range.

9. Air Filter Element Assembly

Parts List

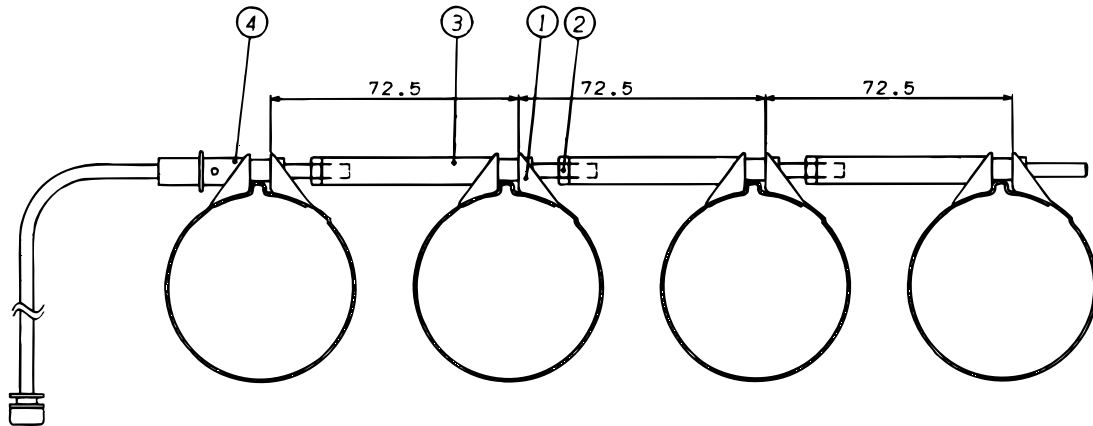
No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-14450-70	ELEMENT ASS'Y	1	

This air element is an improvement on the STD with an increased 20% of intake efficiency. The raising in the air passage sheds water, so the element is also effective in a run in rainy weather. Regular maintenance is simple; simply blow air on the back of the element.

10. Carburetor Clamp complete (5SL-1351A-70)

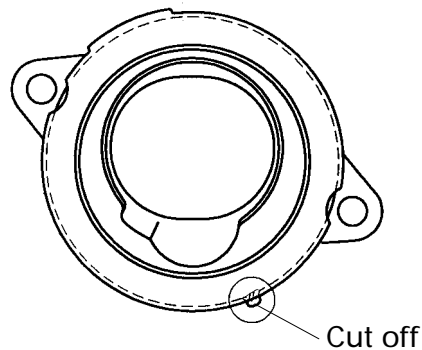
Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
* 1	90450-63001	BAND	4	
* 2	95307-04600	NUT	4	
3	5SL-13573-70	BOLT, 1	3	
4	5SL-1358A-70	ROD COMP.	1	



This part is the one to improve the service of the carburetor.

Cut off prominence for the positioning of the band is in "joint, carburetor 1" before using.



The collar is provided to prevent overtightening. However, under normal circumstances, it would not become that tight.

Tightening by hand is sufficient.

When tightening the opening portion by hand, the gap measures approx. 9 mm.

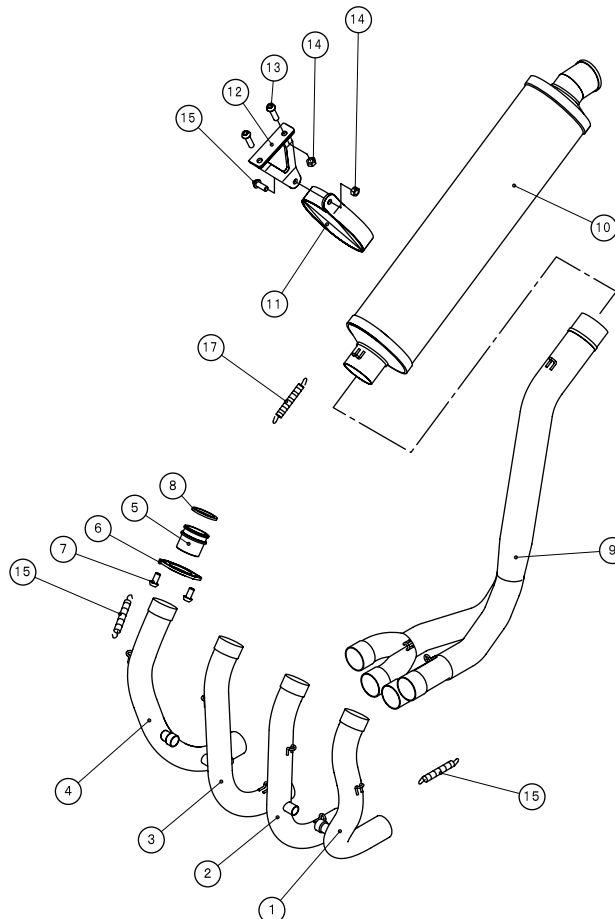
After threading M4 x 0.7, a new band must be used.

11. Exhaust Pipe Set (5SL-A4600-70)

Parts List

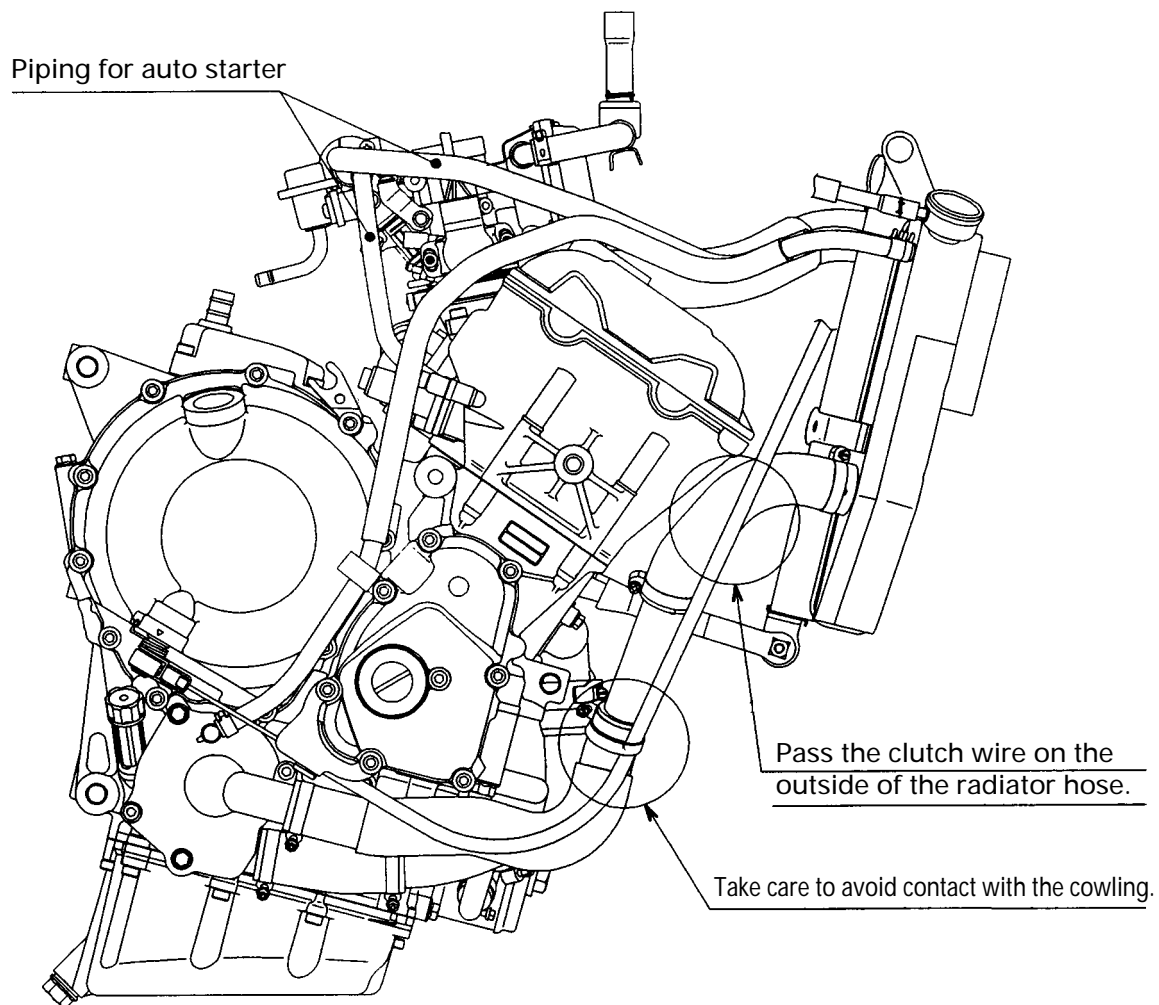
No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-14611-70	PIPE, EXT. 1	1	
2	5SL-14621-70	PIPE, EXT. 2	1	
3	5SL-14631-70	PIPE, EXT. 3	1	
4	5SL-14641-70	PIPE, EXT. 4	1	
5	5EB-14612-70	NUT, RING 1	4	
6	5EB-14622-70	NUT, RING 2	4	
*	92017-08016	BOLT	8	
*	3YF-14613-01	GASKET	4	
9	5SL-14785-70	DIFFUSER	1	
10	5SL-14750-70	SILENCER ASS'Y	1	
11	5SL-1471K-70	BRACKET	1	
12	5SL-21445-70	STAY	1	
*	92014-08020	BOLT	3	
*	95607-08200	NUT	3	
*	90507-20030	SPRING	10	

Made entirely of titanium, this exhaust set has less weight and features a configuration that allows a sub-radiator to be installed.

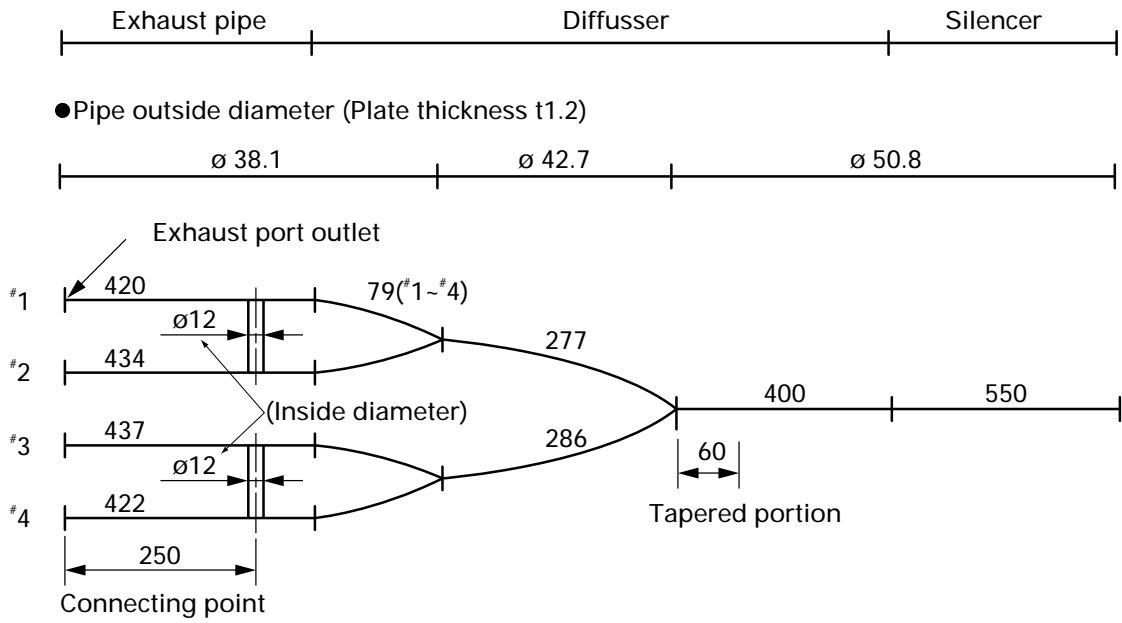


CAUTION:

Reroute the clutch wire as shown below so as to prevent it from contacting the exhaust pipe.



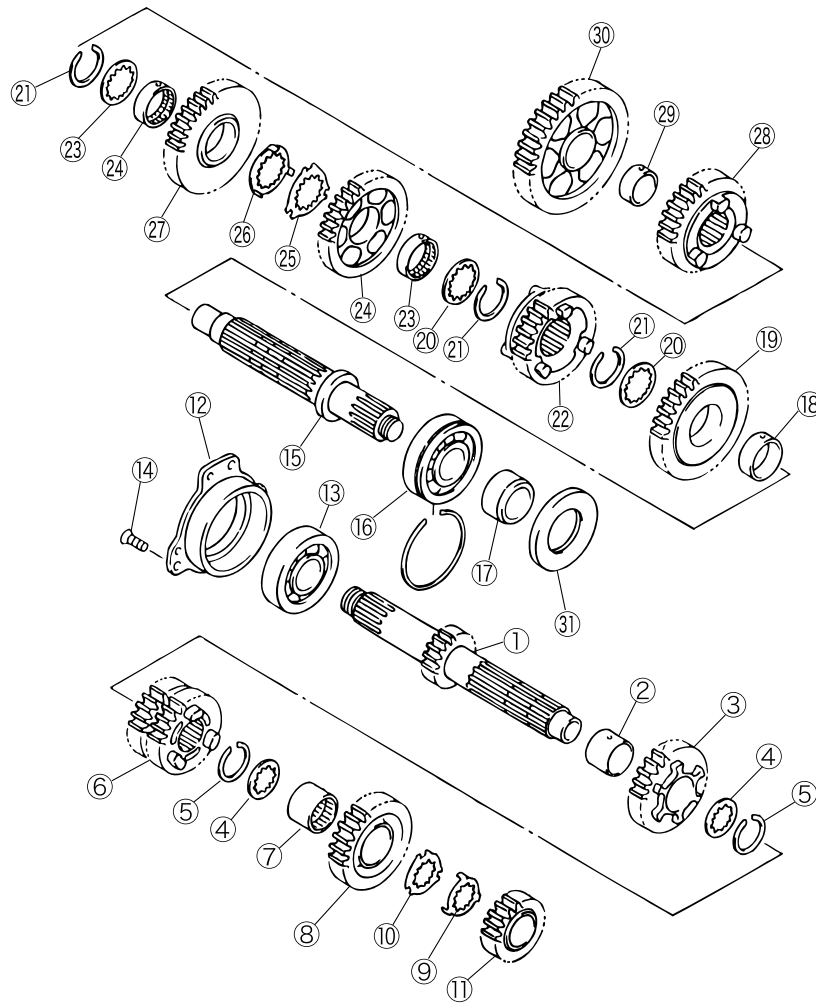
EXT. DIMENSION



12. Transmission Gear Set (5SL-A7400-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	5SL-17411-80	AXLE, MAIN	1	16T
*	2	90387-253M6	COLLAR	1	
	3	5SL-17151-70	GEAR, 5P	1	26T
*	4	90209-21332	WASHER	2	
*	5	93440-25084	CIRCLIP	2	
	6	5SL-17131-80	GEAR, 3P	1	19T/25T
*	7	90387-2513E	COLLAR	1	
	8	5SL-17161-70	GEAR, 6P	1	22T
*	9	90209-22352	WASHER	1	
*	10	90209-21351	WASHER	1	
	11	5SL-17121-70	GEAR, 2P	1	21T
*	12	5EB-15163-01	HOUSING	1	
*	13	93306-30525	BEARING	1	
*	14	90151-06008	SCREW	3	
*	15	5SL-17421-00	AXLE, DRIVE	1	
*	16	93306-30546	BEARING	1	
*	17	90387-2504A	COLLAR	1	
*	18	90387-2813C	COLLAR	1	
	19	5SL-17221-80	GEAR, 2W	1	36T
*	20	90209-25342	WASHER	3	
*	21	93440-28062	CIRCLIP	3	
	22	5SL-17261-70	GEAR, 6W	1	24T
*	23	90387-2813D	COLLAR	2	
	24	5SL-17241-70	GEAR, 4W	1	31T
*	25	90209-25349	WASHER	1	
*	26	90209-25350	WASHER	1	
	27	5SL-17231-80	GEAR, 3W	1	27T
	28	5SL-17251-70	GEAR, 5W	1	30T
*	29	90387-2202V	COLLAR	1	
	30	5SL-17211-80	GEAR, 1W	1	34T
*	31	93102-35423	SEAL, OIL	1	



Gear Ratio

Speed	5SL-A7400-70 No. of teeth (gear ratio)	A (OPTION) No. of teeth (gear ratio)	C (OPTION) No. of teeth (gear ratio)	STD (Reference) No. of teeth (gear ratio)
1st	34/16 (2.125)	31/15 (2.066)	32/14 (2.285)	37/13 (2.846)
2nd	36/21 (1.714)	35/21 (1.666)	—	37/19 (1.947)
3rd	27/19 (1.421)	29/21 (1.380)	—	28/18 (1.555)
4th	31/25 (1.240)	(←)	—	32/24 (1.333)
5th	30/26 (1.153)	(←)	—	25/21 (1.190)
6th	24/22 (1.090)	(←)	—	26/24 (1.083)
L/T	1.894	1.947	(2.095)	2.628

CAUTION:

The gears of the kit transmission and those of the standard transmission are completely incompatible.

Only combine the gears provided in the kit transmission set.

13.Option Gear Set

1stGEAR SET A (5SL-A7411-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-17411-70	AXLE, MAIN	1	15T
2	5SL-17211-70	GEAR, 1 ST WHEEL	1	31T
3	5EB-15163-01	HOUSING	1	
4	93306-30525	BRG.	1	

1stGEAR SET C (5SL-A7411-90)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-17411-90	AXLE, MAIN	1	14T
2	5SL-17211-90	GEAR, 1 ST WHEEL	1	32T
3	5EB-15163-01	HOUSING	1	
4	93306-30525	BRG.	1	

2ndGEAR SET A (5SL-A7421-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-17121-70	GEAR, 2 ND PINION	1	21T
2	5SL-17221-70	GEAR, 2 ND WHEEL	1	35T

3rdGEAR SET A (5SL-A7431-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-17131-70	GEAR, 3 RD PINION	1	21T
2	5SL-17231-70	GEAR, 3 RD WHEEL	1	29T

CAUTION:

1. These gear sets are capable of a combination with the transmission gear sets contained in the basic kit.
2. They are not interchangeable with the STD transmission gears. If installed, they will cause trouble.

14.Sprockets

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	4FN-17460-74	SPROCKET, DRIVE	1	14T
2	4FN-17460-75	SPROCKET, DRIVE	1	15T
3	4FN-17460-76	SPROCKET, DRIVE	1	16T
4	4FN-17463-71	NUT	1	
5	5SL-25445-70	SPROCKET, REAR	1	45T
6	5SL-25446-70	SPROCKET, REAR	1	46T
7	5SL-25447-70	SPROCKET, REAR	1	47T
8	5SL-25448-70	SPROCKET, REAR	1	48T
9	5SL-25449-70	SPROCKET, REAR	1	49T
10	5SL-25450-70	SPROCKET, REAR	1	50T
11	5SL-25451-70	SPROCKET, REAR	1	51T
12	5SL-25452-70	SPROCKET, REAR	1	52T

These parts are for 520 chain size (the standard size is 532).

Use the drive sprocket mounting nut from the kit.

<Gear Ration Conversion Table>

Front Rear	14T	15T	16T	
45T	3.214	3.000	2.812	Secondary reduction =Driven sprocket ratio drive sprocket CHAIN = 520SIZE.
46T	3.285	3.066	2.875	
47T	3.357	3.133	2.937	
48T	3.428	3.200	3.000	
49T	3.500	3.266	3.062	
50T	3.571	3.333	3.125	
51T	3.642	3.400	3.187	
52T	3.714	3.466	3.250	

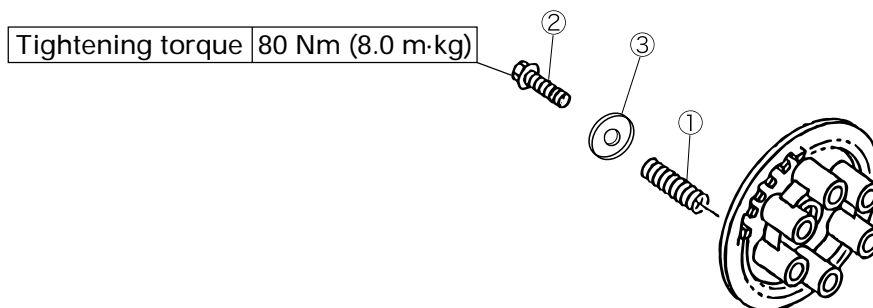
15. Clutch Spring Set (5EB-A6330-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	3FV-2304E-70	SPRING	6	
2	5EB-90159-70	SCREW	6	
3	5EB-16559-70	WASHER	6	

Specifications

	Kit	Standard
Identification color	Red	White
Free length	50.2 mm	50.0 mm
Mounting load	24.1 kgf	19.8 kgf
Mounting height	29.6 mm	29.6 mm



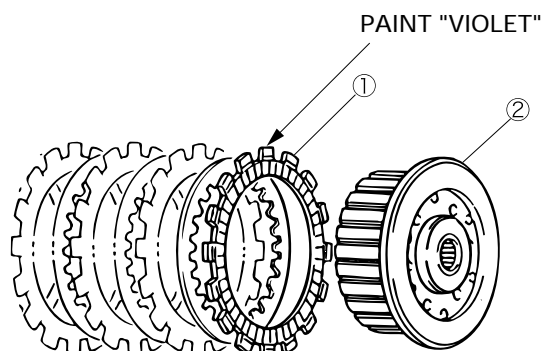
This clutch spring set contains a spring featuring increased pressure load of approximately 20%, along with a washer for improving the durability of the spring itself and the pressure plate by suppressing excessive movement of the spring.

16. Friction Plate and Clutch Boss

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5EB-16321-72	PLATE, FRICTION	8	SET=5EB-A6321-72
2	5SL-16371-70	BOSS, CLUTCH	1	

The friction plate of this kit offers improved durability and operation feel in comparison with the standard friction plate. The clutch boss features improved durability as a result of surface treatment.



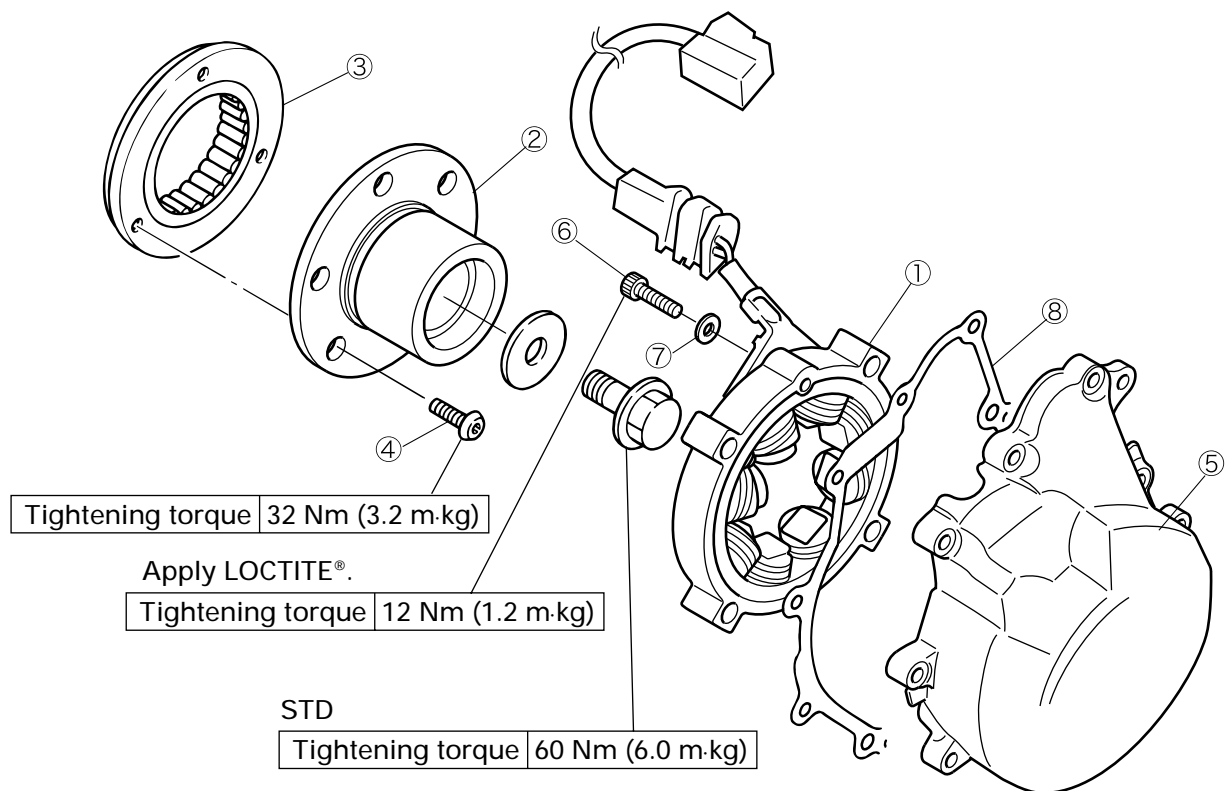
17.ACM Set (5SL-F1400-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-81410-70	STATOR ASS'Y	1	ASS'Y=5SL-81400-70
2	5SL-81450-70	ROTOR	1	
3	5SL-15590-00	STARTER CLUTCH	1	
4	90149-08003	BOLT	3	
5	5SL-15411-70	COVER	1	
6	91317-06025	BOLT	4	
7	92907-06600	WASHER	4	
8	5SL-15451-00	GASKET	1	

Installation Precautions

1. Before installing the rotor to the crank, degrease both of their tapers.
2. Before installation, apply engine oil to the thread and flange of the installation bolts.
3. When installing the stator coil to the cover, apply LOCTITE® to the bolts.



18.Engine Control Unit (ECU)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-8591A-70	ENGINE CONTROL UNIT	1	

- Using the wire harness supplied in the kit, you can switch to control data of SS (Super Sports) specification or to control data of ST (Stock Sports) specification.
- SS specification is preset in the state in which the kit camshaft and the 2003 spec kit muffler and kit air filter are used.
ST specification is preset in the state in which only the muffler is changed into kit parts.
A change to ST specification can be made by removing the black 2-pin coupler located under the kit harness seat.
- Fuel injection is automatically adjusted responding to a change in atmospheric temperature and pressure. However, a change in the engine specification (as in the camshaft, valve timing, muffler, compression ratio, etc.) may result in malfunction.
- With the STD meter, this ECU can adjust the fuel injection and offset the ignition timing.

CAUTION:

- This ECU cannot be used for the motorcycles of European and Australian specifications (with the wire harness number 5SL-82590-00) unless the kit wire harness (5SL-82590-70) is used in combination.
- The STD harness can be used in the motorcycles of USA and Canadian specifications, though with the ST specification control data.

A: Fuel injection Adjustment

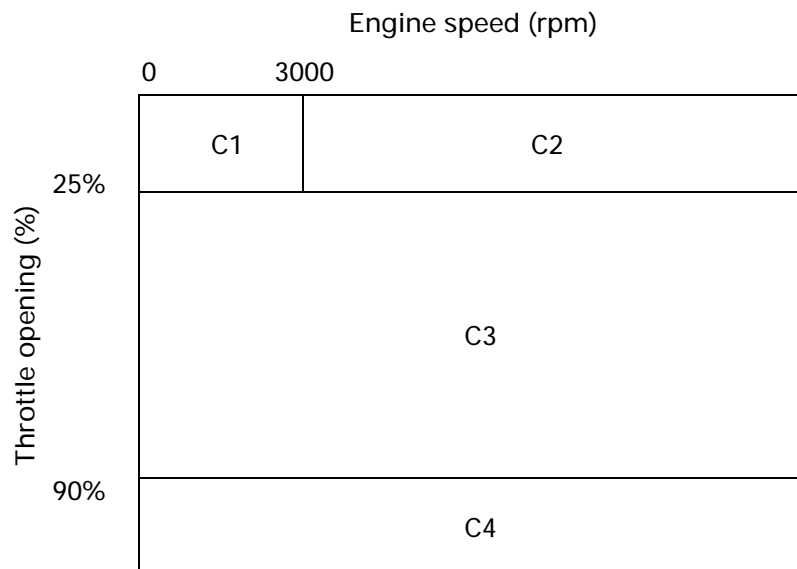
Fuel injection amount can be adjusted in the following four ranges:

Code C1: Fuel amount injected at 25% or less of throttle opening and at 3000 rpm or less of engine speed

Code C2: Fuel amount injected at 25% or less of throttle opening and at 3000 rpm or more of engine speed

Code C3: Fuel amount injected at 25% to 90% of throttle opening

Code C4: Fuel amount injected at 90% or more of throttle opening



Before changing the settings, check the engine for its characteristics in normal condition. It is recommended that the settings be checked with an A/F measuring instrument.

Guidelines for setting

- Code C1: At 25% or less of throttle opening and at 3000 rpm or less of engine speed: This affects the idling stability and the feeling experienced during races. Too rich an air-fuel mixture may foul the spark plugs.
- Code C2: At 25% or less of throttle opening and at 3000 rpm or more of engine speed: This affects the feeling experienced during engine braking and at initial throttle opening. Make a change of 2 to 5% at a time while checking for any resulting changes.
- Code C3: At 25% to 90% of throttle opening: This affects the feeling experienced at half throttle opening. Make a change of 2 to 5% at a time and check for any resulting changes.
- Code C4: At 90% or more of throttle opening: This affects the feeling experienced at full throttle. Adjustment to too lean a mixture will lead to engine breakdown. Adjustment by checking the A/F is recommended. In particular, to adjust on the leaner side, make a change of 1 to 2% at a time while checking for the result. 12 to 13 is a targeted A/F.

Adjustment

- Transfer to adjustment mode.

While holding down both the "RESET" and "SELECT" buttons on the meter, turn on the main switch (the engine stop switch will not function).

"Co" appears in the left of the area for displaying the time and distance.

1. Press both the "RESET" and "SELECT" buttons at the same time.

The display changes from "Co" to "C1". Each time the "SELECT" button is pressed in this state, the display changes to "C2", "C3", "C4", and again "C1" and so forth. Each time the "RESET" button is pressed, the display goes back to the previous setting.

2. When the code to be changed appears, press both the "RESET" and "SELECT" buttons at the same time.

The adjustment value appears to the right of the code display. To change the adjustment value, press either the "RESET" or the "SELECT" button. Each time either button is pressed, the display changes by "1".

This value indicates the change in % in relation to the reference value. For example:

"0" indicates the reference value.

"-10" indicates a change of "-10%" in relation to the reference value.

"20" indicates a change of "+20%" in relation to the reference value.

3. The adjustment value has an allowance of $\pm 25\%$.

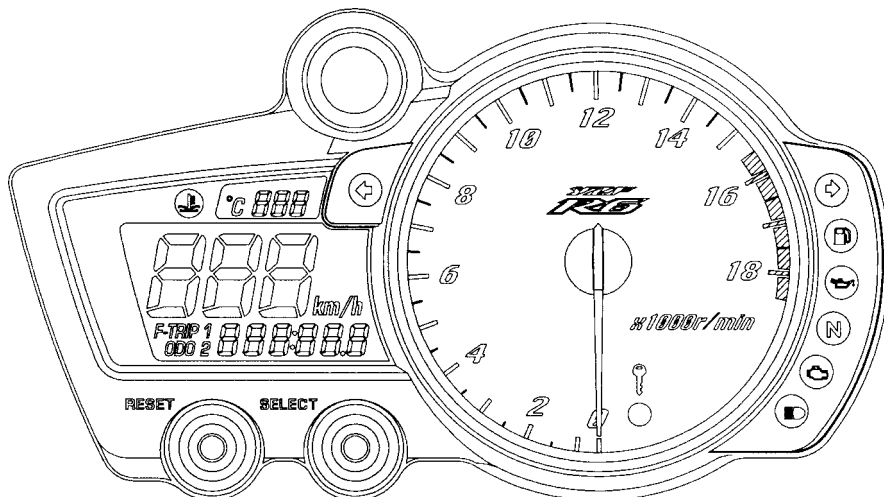
Pressing the button beyond this allowance will not change either the display or adjustment value.

4. When another code is changed, press both the "RESET" and "SELECT" buttons at the same time. The display returns to the state as described in the above 2.

- Checking/finishing

Turn off the main switch, and the adjustment mode will be finished.

The adjusted values are stored in memory. You do not have to turn off the main switch.



B: Offset at ignition

This function corrects the general differences in the ignition timing requirements caused by different fuels etc.

Adjustment

- Transfer to adjustment mode

While holding down the "RESET" and "SELECT" buttons on the meter, turn on the main switch (the engine stop switch will not function).

"Co" appears in the left of the display area for the time and distance.

1. Press the "SELECT" button.

The display changes to "dIAG".

2. Press both the "SELECT" and "RESET" buttons at the same time.

"d01: XX" appears in the display area.

3. Press the "RESET" button 4 times.

Check that "d60: 00" is displayed.

4. In this state, operate the engine stop switch "OFF" → "ON".

"d60: 02" is displayed. This indicates that the ignition timing is 2° too early in relation to the standard state.

Repetition of "OFF" → "ON" on the engine stop switch repeats the following sequential display, starting from "d60 00".

"d60: 02" (2° advance)

"d60: 04" (4° advance)

"d60: 06" (6° advance)

"d60: 86" (6° retard)

"d60: 84" (4° retard)

"d60: 82" (2° retard)

"d60: 00" (standard ignition timing)

5. When selection is finished, turn off the main switch to complete the procedure.

CAUTION:

Ignition timing adjustment function covers a range of over 3000 rpm.

Over-adjustment on the advance side may do damage to the engine, so take sufficient care to work with the adjustment. If selection on the advance side appears to bring about no change or if there is any doubt as to which to select, make settings on the retard side.

- Bring the fuel adjustment and ignition timing back to the standard state.

Perform the following method in order to bring the fuel adjustment and ignition timing back to the standard state all at once.

1. Select Code 61 = "d60: 00".

2. Operate the engine stop switch "OFF" → "ON". "d60: 55" appears, all coming back to the standard state.

C: Location for water temperature display and unit conversion

The ECU in the kit has an additional function of displaying the water temperature in the speed display area.

CAUTION:

This function assumes that speed is displayed in the "km/h" unit on the meter. If the meter displays speed in miles, perform the following steps and change the speed display.

1. Turn on the main switch.

If the clock is displayed in the distance/clock area, press the "SELECT" button for more than a second to change it over to the distance display.

2. Holding down both the "SELECT" and "RESET" buttons for more than 2 seconds changes the speed display from "mph" to "km/h".
 3. When the main switch is turned off, the settings will be stored in memory, though a disconnected battery nulls it and brings the display back to the original "mph" display.
-

Switching over the water temperature display

1. Turn on the main switch with the "RESET" and "SELECT" buttons held down. "Co" appears in the left of the display area for the distance and time.
2. Press the "SELECT" button. The display changes to "DIAG".
3. Press both the "RESET" and "SELECT" buttons at the same time. "d01: xx" appears in the display area. (A certain number is displayed in "xx".)
4. Pressing the "RESET" button 2 times displays "d62: xx".
The "xx" in "d62: xx" indicates which thermometric scale to display, Celsius or Fahrenheit.
"00" = No display
"01" = Celsius (°C)
"02" = Fahrenheit (°F)
To change the display, operate the engine switch "OFF" → "ON". The thermometric indication changes in order of "00", "01", "02", and back to "00" and so on.
5. When the desired scale appears, turn off the main switch.

CAUTION:

Even when water temperature is displayed in the speed indication area, the figures in the distance display area will be changed though they do not represent the actual distance traveled.

D: Self-diagnosis function

The ECU in the kit is designed to display the code number on the STD meter corresponding to the failure occurring to the sensors and switches.

For these code numbers, refer to Table 1.

E: Diagnosis (function for checking the condition)

The ECU in the kit makes it possible to check whether the sensors and switches are working properly through the following operation by using the STD meter.

Operation

1. Turn on the main switch while holding down both the "SELECT" and "RESET" buttons at the same time. "Co" is displayed in the meter display area.
2. Press the "SELECT" button. The display changes to "DIAG".
3. Press both the "SELECT" and "RESET" buttons at the same time. "d01: xx" appears in the display area.

The "xx" in "d01: xx" represents the code number indicating the diagnosis function. For the details of the code numbers, refer to Table 2.

4. After checking, turn off the main switch to complete the procedure.

Table 1 <Finding failures through self-diagnosis>

Abnormal code	Item	Operation of ECU	Engine run
11	Cam sensor	<ul style="list-style-type: none">• Cam sensor broken/shorted• Cam sensor broken down (Found during electric motor cranking)	Impossible
12	Crank sensor	<ul style="list-style-type: none">• Crank sensor broken/shorted• Crank sensor broken down (Found during electric motor cranking)	Impossible
13	Intake pressure sensor (broken/shorted)	<ul style="list-style-type: none">• Intake pressure sensor broken/shorted• Intake pressure sensor broken down, abnormal value	Possible
14	Intake pressure sensor (Piping system failure)	<ul style="list-style-type: none">• Intake pressure sensor piping coming off.• Intake pressure sensor broken down, abnormal value (Found during engine run)	Possible
15	TPS (Broken/shorted)	<ul style="list-style-type: none">• Throttle sensor broken/shorted• Throttle sensor broken down/abnormal value	Possible
21	Water temperature sensor (Broken/shorted)	<ul style="list-style-type: none">• Water temperature sensor broken/shorted• Water temperature sensor broken down/ abnormal value	Possible
22	Intake temperature sensor (Broken/shorted)	<ul style="list-style-type: none">• Intake temperature sensor broken/shorted• Intake temperature sensor broken down/ abnormal value	Possible
23	Ambient pressure sensor (Broken/shorted)	<ul style="list-style-type: none">• Ambient pressure sensor broken/shorted• Ambient pressure sensor broken down/ abnormal value	Possible

Abnormal code	Item	Operation of ECU	Engine run
30	Turnover sensor (overturned checked)	<ul style="list-style-type: none"> • Vehicle overturned • Engine can be restarted if code goes off when vehicle stands erect. (Turnover sensor broken down/abnormal value)	Impossible
33	Abnormal ignition #1	<ul style="list-style-type: none"> • Ignition coil coming off/broken 	Possible
34	Abnormal ignition #2		
35	Abnormal ignition #3		
36	Abnormal ignition #4		
41	Turnover sensor (Broken/shorted)	<ul style="list-style-type: none"> • Turnover sensor broken/shorted • Turnover sensor broken down/abnormal value 	Possible
43	Battery voltage (Voltage for fuel system)	<ul style="list-style-type: none"> • Main relay broken down • ECU detection wire broken 	Possible
50	ECU interior broken down (Abnormal ROM data)	<ul style="list-style-type: none"> • Abnormal data in ECU 	Impossible

*NOTE: Even if the engine is capable of running during failure, it is a mere passing operation and may not produce its intended function and performance.

Table 2 <Diagnosis function>

CODE	Item	Operation of ECU
01	Throttle sensor	<ul style="list-style-type: none"> • Displays throttle sensor input value in angles. • Approx. [17] deg at full closed throttle • Approx [95] deg at full open throttle
02	Ambient pressure sensor	<ul style="list-style-type: none"> • Displays ambient pressure in mmHg. • Approx. [760] mm Hg at standard altitude
03	Intake pressure sensor	<ul style="list-style-type: none"> • Displays intake negative pressure in kPa. • Approx. [80] mmHg at electric motor cranking
05	Intake temperature sensor	<ul style="list-style-type: none"> • Displays sensor detected temperature in °C.
06	Water temperature sensor	<ul style="list-style-type: none"> • Displays sensor detected temperature in °C.
07	Vehicle speed sensor	<ul style="list-style-type: none"> • Displays accumulated number of sensor detected pulses.
08	Turnover sensor	<ul style="list-style-type: none"> • Displays sensor output voltage. Erect: [0.4 to 1.4] V Overturned: [3.7 to 4.4] V Broken: [5.0] V
09	Monitor voltage	<ul style="list-style-type: none"> • Displays battery voltage measured by ECU. Approx. [12] V when checking.
20	Engine kill-switch	<ul style="list-style-type: none"> • Displays switch condition. • "ON" is displayed while switch is operated.
30	Ignition coil #1	<ul style="list-style-type: none"> • Drives ignition coil 5 times every second.
31	Ignition coil #2	
32	Ignition coil #3	
33	Ignition coil #4	
36	Injector #1	<ul style="list-style-type: none"> • Drives injector 5 times every second.
37	Injector #2	
38	Injector #3	
39	Injector #4	
50	Main relay	<ul style="list-style-type: none"> • Drives main relay 5 times every second.
60	Selection of ignition timing	<ul style="list-style-type: none"> • Set offset value for ignition timing.
61	Initialization of value changed	<ul style="list-style-type: none"> • Reset injection adjustment value and ignition timing offset amount to initial value.
62	Selection of water temperature display	<ul style="list-style-type: none"> • Selects function for water temperature displayed on meter 00: Nothing 01: Celsius 02: Fahrenheit

19. Wire Harness Set (5SL-F2590-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-82590-70	HARNESS ASS'Y	1	
2	5FL-83976-70	SWITCH, MAIN	1	

- Do not remove the AC generator but leave it to function. Using the battery alone will result in the inability to run in a short time.
- This harness enables the meter to light up when the main switch is turned on.
- The circuit to the oil level gauge and the fuel sender need not be connected, though the oil warning light and fuel warning light come on. But there will be no problem with a run.

* Use STD parts for the following.

Engine stop switch

Relay assembly

Emergency stop switch

Battery positive lead

Battery negative lead

CAUTION:

When installing the emergency stop switch, take care to insert the coupler straight in so that the terminal is not bent.

Other functions

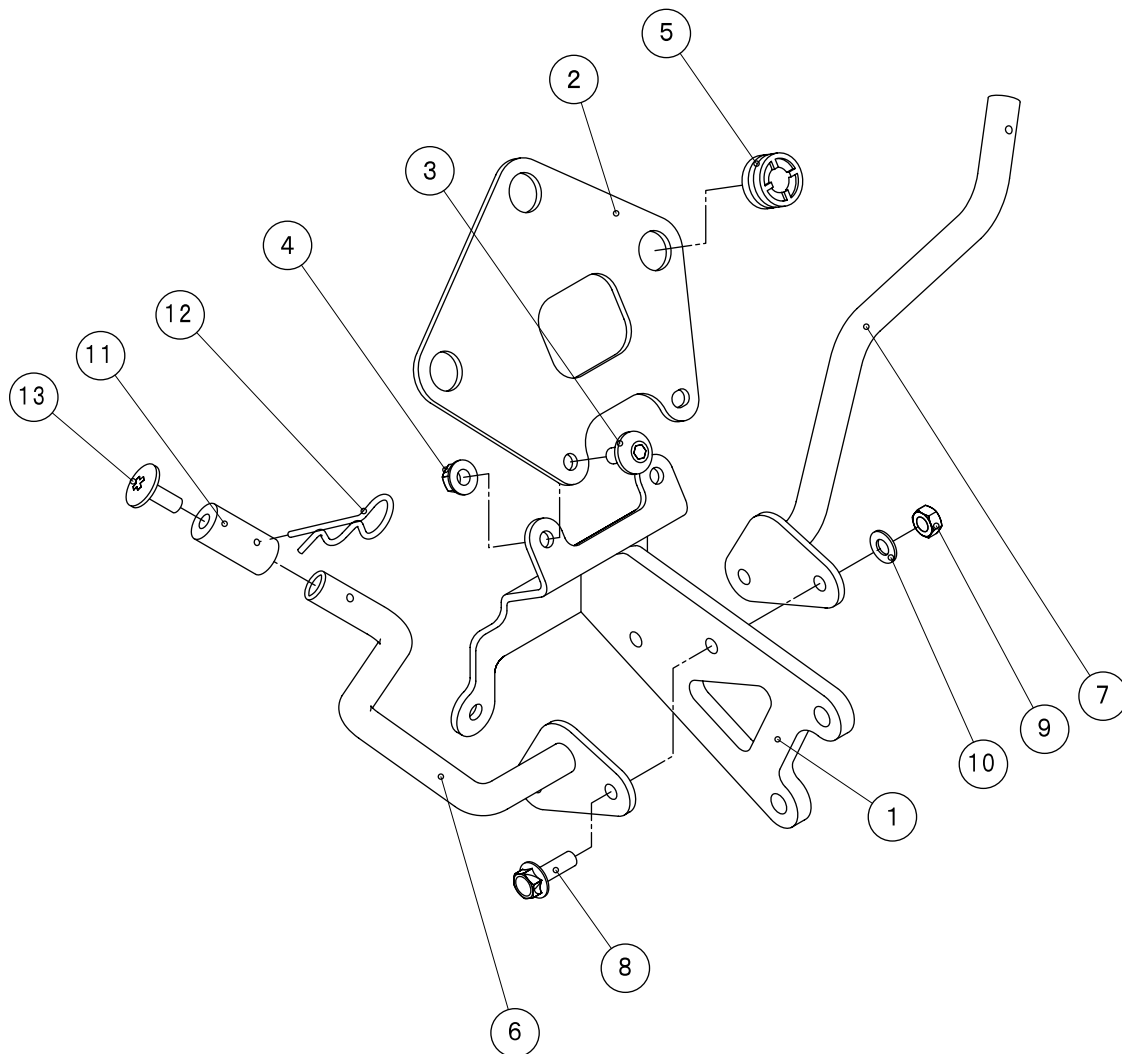
- Combination with the ECU in this harness kit enables the engine stop switch to be used.
Attach the switch between the black leads or between the black/yellow (BY) and the black (B) lead, which are shorted on the white 3-pin coupler under the tank.
When the switch is on, it cuts ignition, but note that it does not function when transmission is running.
- When the black 2-pin coupler located under the seat is removed, the ECU control data changes to the ST specification. Note, however, that the engine stop switch functions only with the STD transmission.

20.Meter Stay Set (5SL-C8350-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-28356-70	STAY, 1	1	
2	5SL-83519-70	BRKT., METER	1	
*	90149-06298	SCREW	2	
*	95704-06500	NUT, FLANGE	2	
*	4XV-83513-00	DAMPER	3	
6	5SL-28321-70	STAY, 1	1	LH
7	5SL-28322-70	STAY, 2	1	RH
*	95807-06025	BOLT, FLANGE	2	
*	95307-06600	NUTR, HEX.	2	
*	92907-06200	WASHER, PLAIN	2	
*	4A0-28364-00	NUT	2	
*	4DP-28334-00	CLIP, COWLING	2	
*	90150-06021	SCREW, ROUND HEAD	2	

The rearview mirror and headlight cannot be installed.



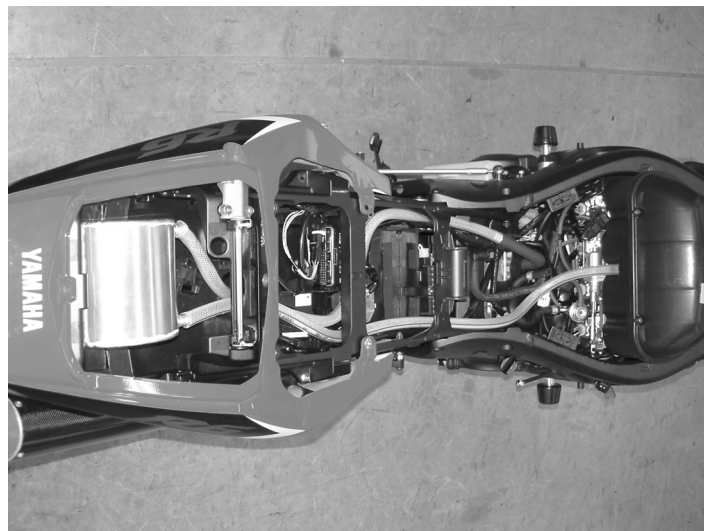
2-3 Chassis Parts

21.Oil Catcher Tank Set (5SL-C1707-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	5SL-21707-70	OIL TANK COMP	1	
	2	5EB-15373-70	PIPE, BREATHER	2	
*	3	90464-15152	CLAMP	2	L=370 mm
*	4	90450-25037	HOSE CLAMP ASS'Y	6	
	5	5SL-11166-70	PIPE, BREATHER	1	
	6	371-11166-01	PIPE, BREATHER	1	

This actual capacity of this oil tank is 1000 cc. Install behind the rear frame above the rear fender.

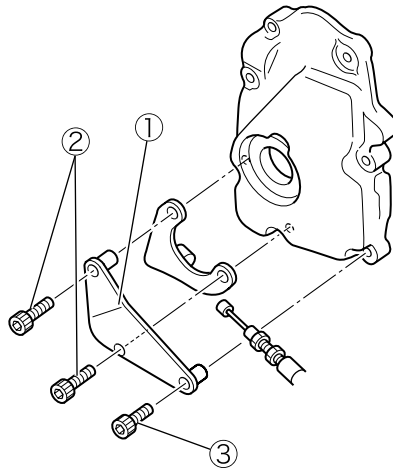


22.Engine Protector Set (5SL-A5491-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-15491-70	PROTECTOR	1	
*	91314-06030	BOLT	2	
*	91314-06025	BOLT	1	
*	90387-065X6	COLLAR	3	
5	91314-06035	BOLT	2	

This part reduces damage when the motorcycle tips over along with the chassis protector.

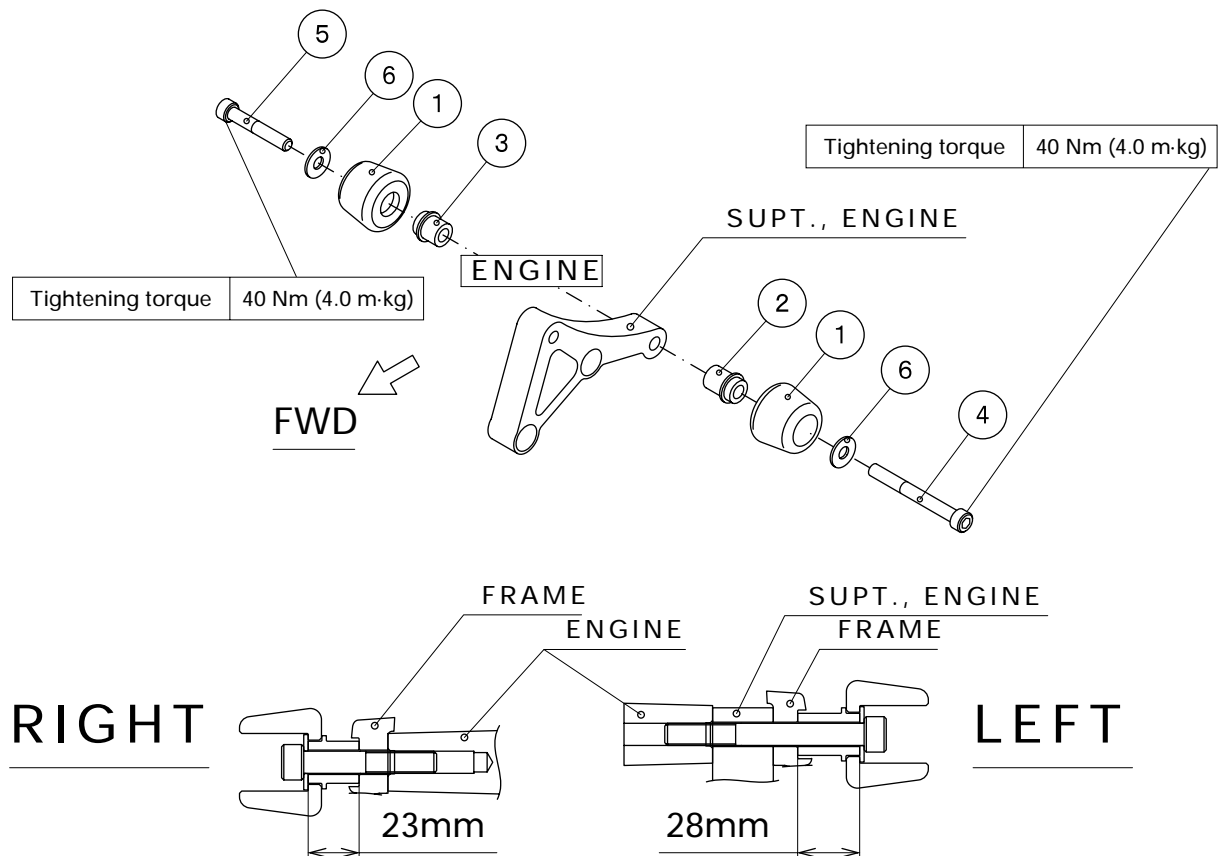


For the YZF-R6 in the 1999 to 2002 model years, use the collars (4). Use 1 bolt (2) and 2 bolts (5).

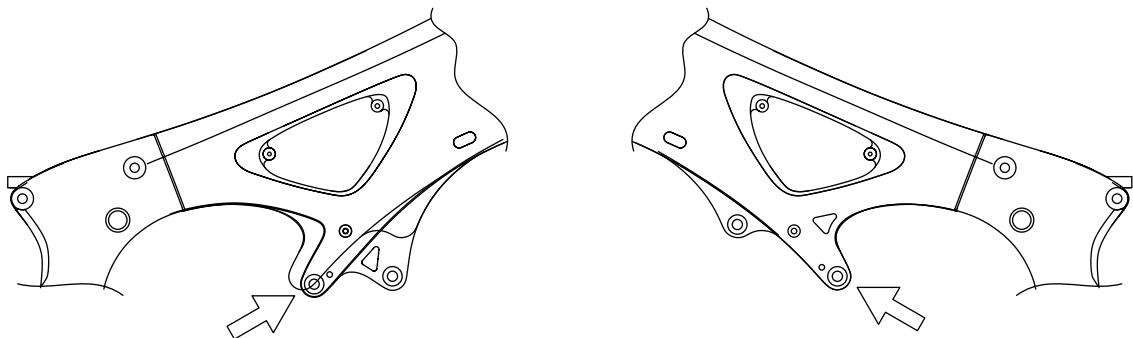
23.Chassis Protector Set (5SL-C117G-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5EB-2117G-70	PROTECTOR	2	
2	5SL-21472-70	COLLAR, PROTECTOR	1	LH
3	5SL-21477-70	COLLAR, PROTECTOR 2	1	RH
4	91317-10090	BOLT, HEX. SOCKET	1	LH
5	91317-10060	BOLT, HEX. SOCKET	1	RH
6	90201-10140	WASHER, PLATE	2	



Remove the arrowed bolts and install the chassis protector using the supplied bolts. Cut the cowling to fit the vehicle.



24.Rear Suspension Springs

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-22212-70	SPRING, 1	1	K=10.7 kgf/mm (Identification color: Black)
2	5SL-22212-80	SPRING, 1	1	K=11.2 kgf/mm (Identification color: Blue)

This spring is intended for use in the STD shock absorber. It is slightly shorter than the STD so that the vehicle height is not changed when the spring rate is changed.

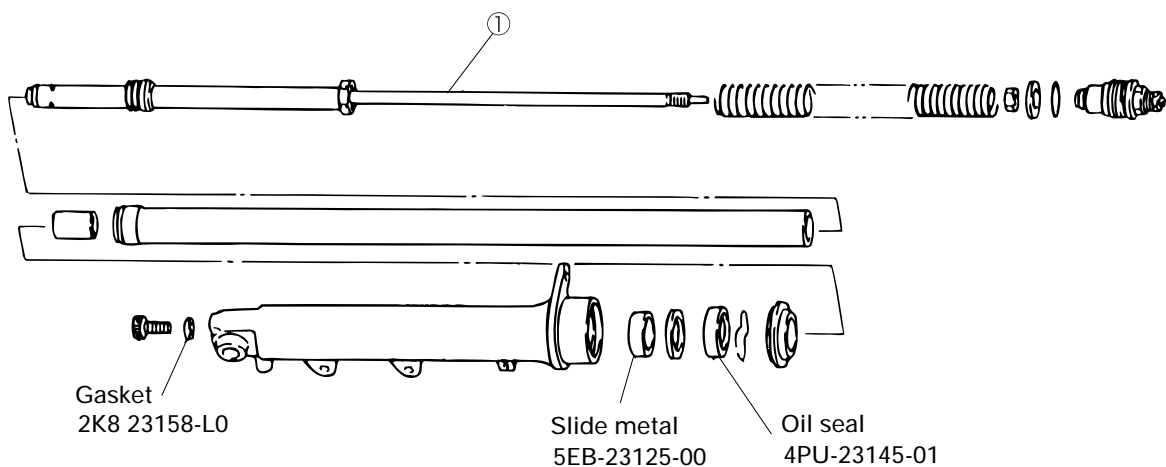
Specification

	-70	-80	STD
Free length	168 mm	167 mm	168.5 mm
Spring rate	10.7 kgf/mm	11.2 kgf/mm	10.0 kgf/mm
ID (paint on number of end coils)	Black	Blue	Nil

25.Front Fork Damper - Complete Set (5SL-C3170-70)

Parts List

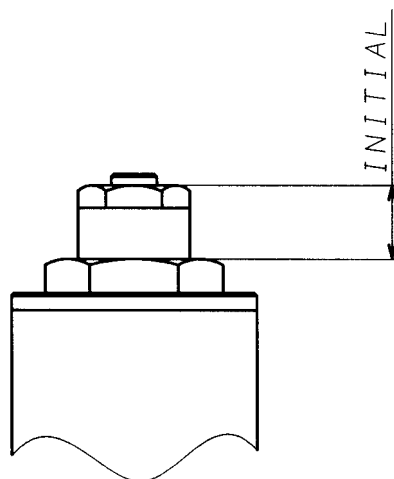
No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-23170-70	DAMPER COMP.	1	



The damping characteristics of these parts have been changed relative to the standard parts, resulting in an average increase in damping force of roughly 25%.

Standard Setting

Oil level height	106 mm, from upper surface of the inner tube at maximum compression without spring
Recommended oil	Yamaha Suspension Oil 01 (SAME AS SAE 0W)
Standard settings	Rebound damping: 9 clicks out from full turn in
	Compression damping: 7 clicks out from full turn in
Preload	7 mm (where preload adjuster projects 20 mm)
Stroke	120 mm (same as STD)



26. Front Fork Spring

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-23141-80	SPRING, 1		0.90 kgf/mm
1	5SL-23141-85	SPRING, 1		0.95 kgf/mm
1	5SL-23141-90	SPRING, 1		1.00 kgf/mm
1	5SL-23141-95	SPRING, 1		1.05 kgf/mm
2	5SL-23118-70	SPACER		L=53 mm

Specification

	-80	-85	-90	-95	STD
Free length	290 mm	290 mm	290 mm	290 mm	250 mm
Spring rate	0.90 kgf/mm	0.95 kgf/mm	1.00 kgf/mm	1.05 kgf/mm	0.85 kgf/mm
No. of ID marks	3	4	5	6	Nil

CAUTION:

1. The spring is longer than the STD in overall length because of its specification. For setting up, use the supplied collar instead of the STD.
2. Preload is set so that it provides 0 mm with the fork assembly fully extended when the adjuster projects 20 mm. When the front forks are free from load other than their own, the apparent preload is approximately 7 mm because the rebound spring keeps the fork from full rebound.
3. The spring rate is identified by the number of lines on its end.

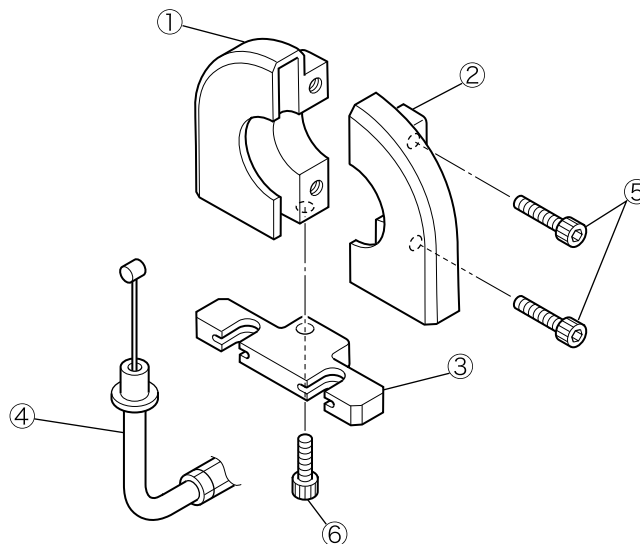
Basic setting

Preload adjuster	20 mm (up to top end)	
Oil level	106 mm (when compressed)	Approx. 490cc
Suspension oil	Yamaha Suspension Oil 01	

27.Throttle Set (5SL-C6300-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5EB-26281-81	CAP, GRIP UPPER	1	
2	5EB-26282-81	CAP, GRIP UNDER	1	
3	5FL-26391-80	CLIP, THROTTLE WIRE	1	
4	5SL-26302-70	THROTTLE WIRE ASS'Y	1	
*	91317-05020	BOLT	2	
*	91317-05014	BOLT	1	
*	5SL-26243-71	TUBE GUIDE	1	
8	4YR-26242-00	GRIP2	1	
9	90201-261L1	WASHER	1	
*	4UN-83975-01	SW., HANDLE 2	1	
11	5SL-8258A-70	EXTENTION, HARNESS 2	1	Install this part between SW., HANDLE2 and wire harness on the motorcycle.



This part allows the throttle grip to be removed without removing the carburetor wire to facilitate easier maintenance. The operating angle is 50 degrees.



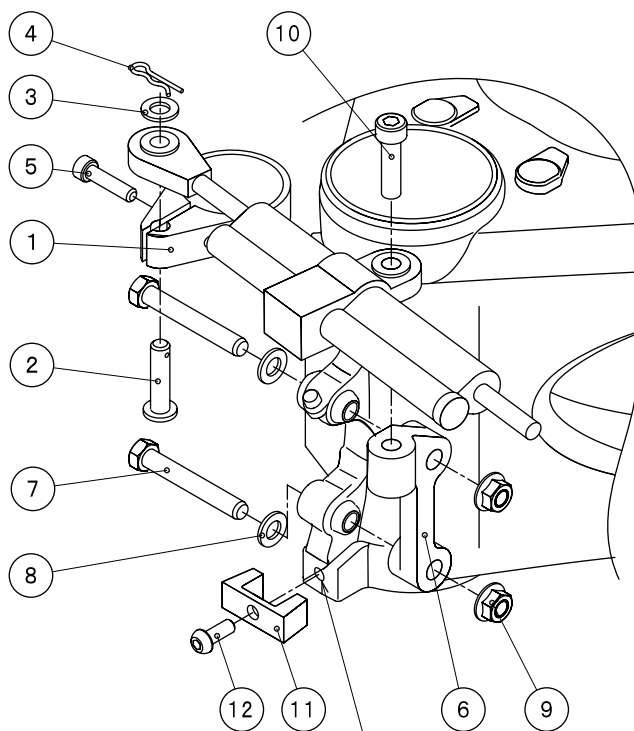
The engine stop switch is changed to the one provided. There is a projection on the bottom of the switch that is used as a reference for positioning. Install the stop switch after removing this projection.

28. Steering Damper Stay Set (5SL-C3495-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5EB-23495-70	STAY, DAMPER	1	
*	2	91701-08038	PIN	
*	3	90201-08455	WASHER	
*	4	90468-16099	CLIP	
*	5	91317-06025	BOLT, HEX. SOCKET	
6	5EB-2349T-72	BRKT.	1	
*	7	90101-08766	BOLT	
*	8	92907-08200	WASHER	
*	9	95707-08500	NUT, FLANGE	
*	10	91317-08030	BOLT, HEX. SOCKET	
11	5EB-21312-71	STOPPER, STRG.	1	
*	12	92017-06016	BOLT, BUTTON HEAD	

Use the steering damper OHLINS SD1210 with a 68 mm stroke.

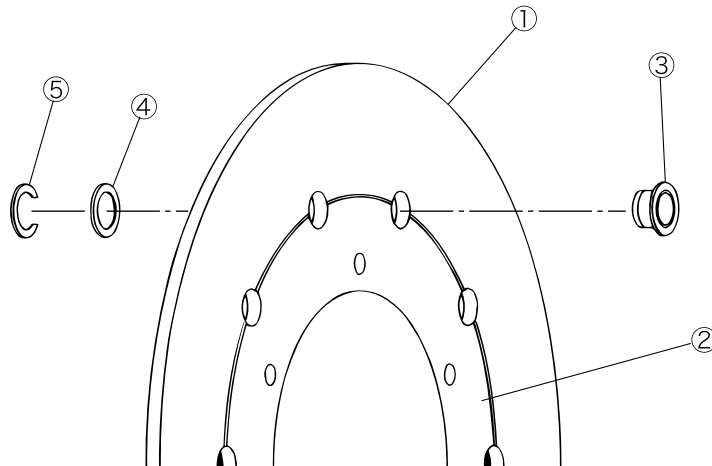


Drill an M6 screw-thread hole in the frame.
(18 to 20 mm deep)

29. Front Disk Brake Assembly (5SL-2581T-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-2582T-70	DISK	1	
2	5SL-25832-70	BRACKET	1	
3	5EB-2581M-70	PIN	7	
4	5EB-2581N-70	WASHER	7	
5	5EB-93430-70	CIRCLIP	7	

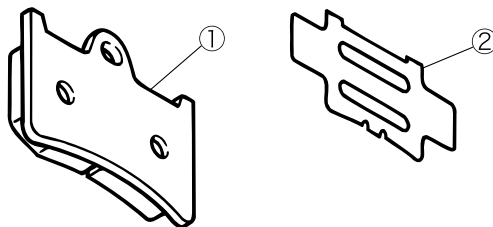


The disk thickness and heat treatment of these parts has been changed for racing use, resulting in improved durability and operation. Yamaha genuine part 93430-09038 can also be used for the circlip.

30. Front Brake Pad Set (5SL-W0045-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-25811-70	PAD. COMP.	4	
2	5SL-25827-70	SHIM, 1	4	



- These parts feature improved stopping power for racing use. They can also be used on the YZF-R1.
Since these pads grip the disk more strongly than the standard pads, if braking feels poorly when the brake is applied or if the pads appear to be slipping, check the braking surface of the disk and replace the disk as necessary.
- The supports are installed to make it difficult for heat from the brake pads to be transferred to the caliper. Always make sure to install these supports on the pads.

31. Footrest Set (5SL-C7400-70)

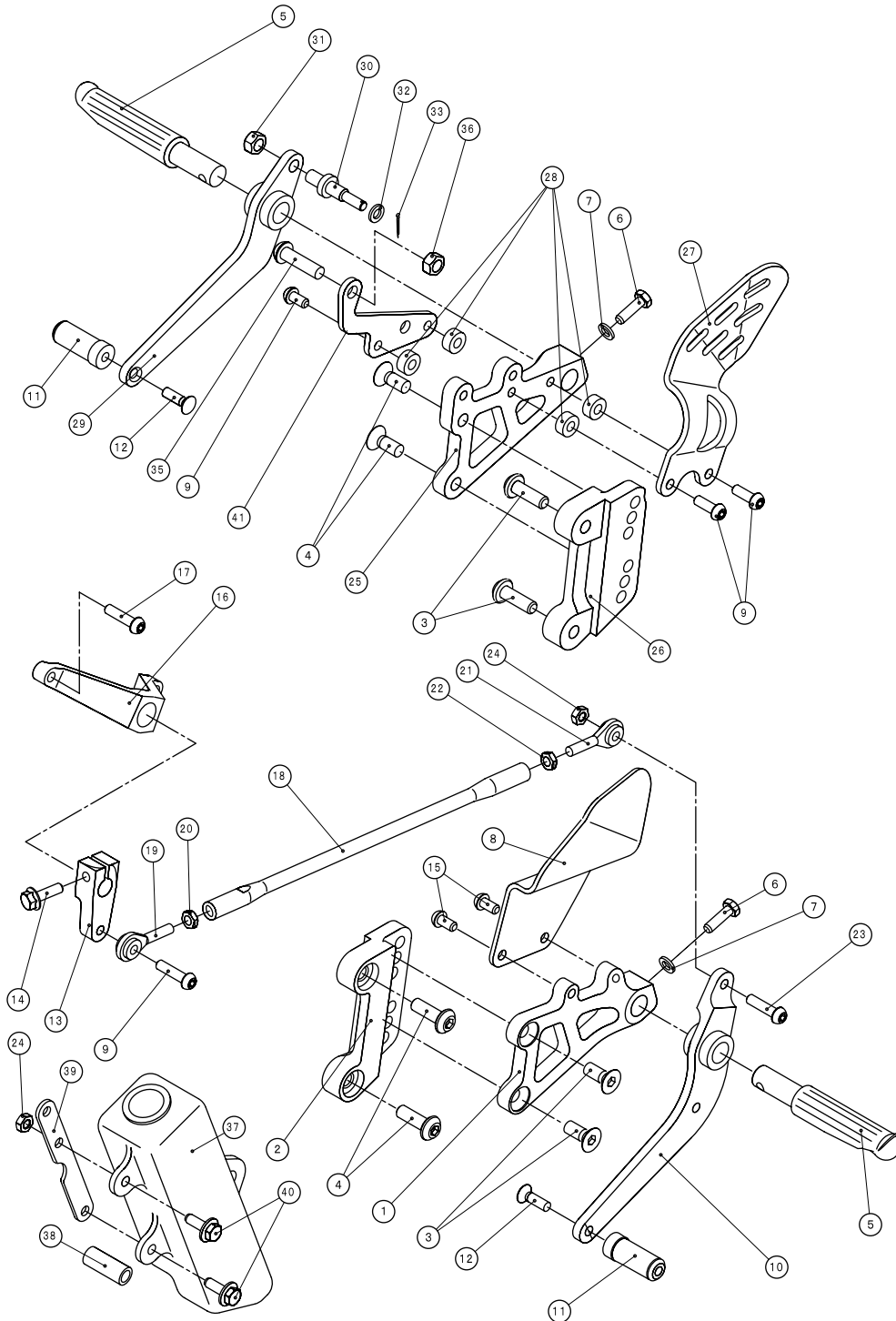
Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	5SL-27412-70	BRKT., 1	1	
	2	5SL-27452-70	BRKT., FOOTREST 1	1	
*	3	90151-08022	SCREW	4	
*	4	90109-085G6	BOLT	4	
*	5	4JT-27411-20	FOOTREST 1	2	
*	6	97007-06020	BOLT	2	
*	7	92907-06600	WASHER, PLATE	2	
*	8	5FL-27445-00	PLATE 1	1	
*	9	92017-06020	BOLT, BUTTON HEAD	3	
	10	5PW-18111-71	PEDAL, SHIFT	1	
	11	5EB-18162-70	PEDAL, FRONT	2	
*	12	98707-06020	SCREW, FLAT HEAD	2	
	13	5SL-18112-70	ARM, SHIFT	1	
*	14	95824-06020	BOLT, FLANGE	1	
*	15	92017-06012	BOLT, BUTTON HEAD	2	
	16	5SL-18179-70	GUIDE	1	
*	17	92017-06035	BOLT, BUTTON HEAD	2	
*	18	5PW-18115-00	ROD, SHIFT	1	
*	19	3TC-18116-00	JT., ROD 1	1	
*	20	95304-06700	NUT	1	
*	21	3TC-18117-00	JT., ROD 2	1	
*	22	90170-06228	NUT	1	
*	23	92017-06025	BOLT, BUTTON HEAD	1	
*	24	95607-06100	NUT, U	2	
	25	5SL-27422-70	BRKT., 2	1	
	26	5SL-27462-70	BRKT., FOOTRSET 2	1	
*	27	5SL-27446-00	PLATE 2	1	
	28	5SL-2745A-71	COLLAR	4	
	29	5EB-27211-70	PEDAL, BRAKE	1	
	30	5SL-27853-71	SHAFT, PEDAL 1	1	
*	31	95307-08700	NUT	1	
*	32	92907-06200	WASHER, PLAIN	1	
*	33	91401-16012	PIN, SPRIT	1	
	34	5EB-27456-70	SPRING, RETURN	1	
*	35	92017-08030	BOLT, BUTTON HEAD	2	
*	36	95307-08700	NUT	2	
*	37	82M-21871-00	TANK, RECOVERY	1	
*	38	16G-13569-00	PLUG	1	

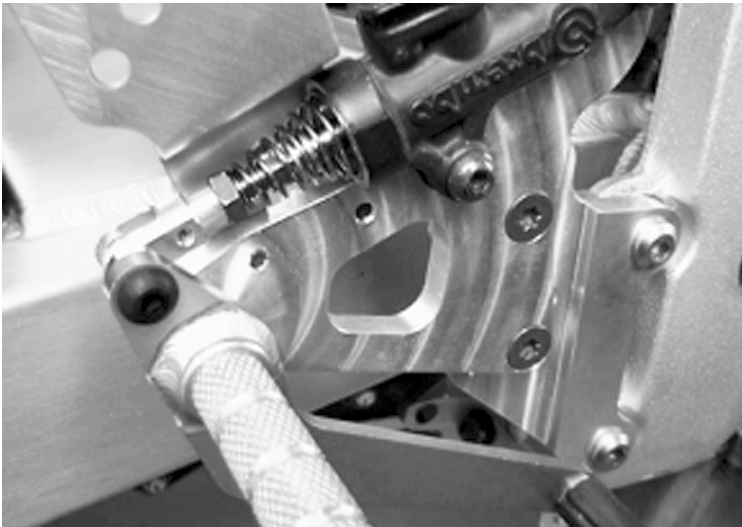
Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
39	5SL-21873-70	BRKT., TANK	1	
*	90119-06044	BOLT, HEX.SOCKET	2	
41	5SL-2741L-70	BRKT., 4	1	

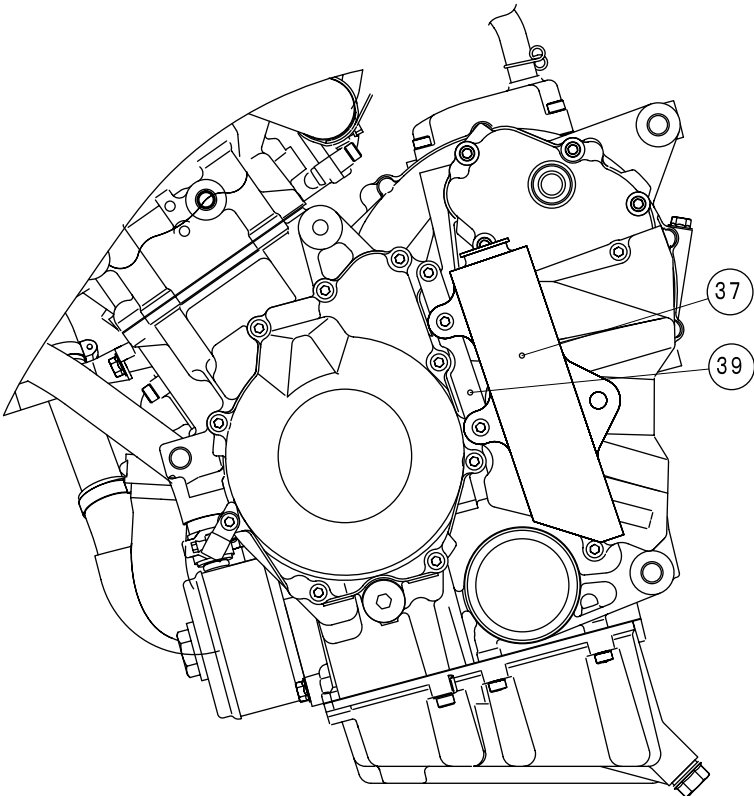
This footrest kit is designed to allow its position to have a change of 10 mm upper and lower from the center. Its central position is located 15 mm higher than the STD.
 A change in the installation position of the arm ⑬ provides the pattern of 1-down 5-up shifts and 1-up 5-down shifts.



Install the return spring of the rear brake on the master cylinder by removing the rubber boot.



Since the standard radiator recovery tank cannot be used, install the recovery tank provided in the kit.



2-4 Other

32.Valve Seat Cutter Set (5SL-M1112-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-92101-70-0	SPINDLE	1	
2	5SL-92110-70-0	CUTTER, INT 1	1	60°
3	5SL-92110-80-0	CUTTER, INT 2	1	90°
4	5SL-92110-90-0	CUTTER, INT 3	1	120°
5	5SL-92120-70-0	CUTTER, EXT 1	1	60°
6	5SL-92120-80-0	CUTTER, EXT 2	1	90°
7	5SL-92120-90-0	CUTTER, EXT 3	1	120°

This tool set is used for fine adjustment of the contact of the valve and valve seat.

- This set includes 3 specifications each of the diamond cutters for INT and EXT.
- When doing cutting operation, apply engine oil to the cutting surfaces.
- If the valve cannot be completely worn in through rubbing, cut the contact surface of the seat with a 90 deg. cutter and do the rubbing again.
- Check the contact area and width of the valve and seat. If there is 1 mm-wide rubbed area in the center of the 90 deg. surface of the valve, no correction is needed. If it is off to either side, or if there is a rubbed area more than 1.1 mm wide, adjustment should be performed.

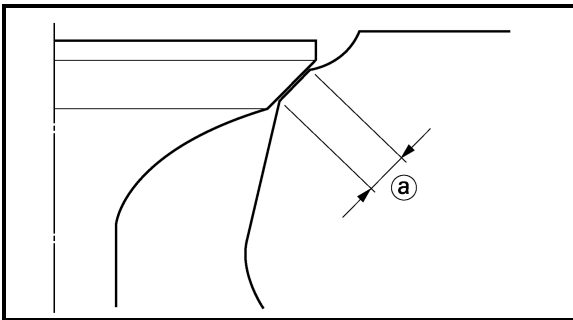
3 Assembly Precautions

NOTE: _____
Please check next point for set up your motorcycle.

3-1 Checking the Valve Seats

The following procedure applies to all of the valves and valve seats.

1. Eliminate:
 - carbon deposits
(from the valve face and valve seat)
2. Check:
 - valve seat
Pitting/wear → Replace the cylinder head.
3. Measure:
 - valve seat width ①
Out of specification → Replace the cylinder head.

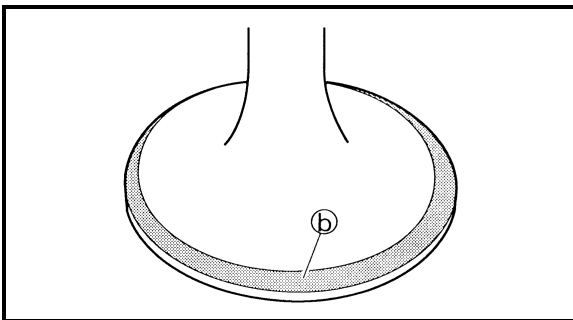


Valve seat width

0.9 – 1.1 mm

(0.0354 – 0.0433 in)

<Limit>: 1.6 mm (0.06 in)



- a. Apply Mechanic's blueing dye (Dykem) ② onto the valve face.
- b. Install the valve into the cylinder head.
- c. Press the valve through the valve guide and onto the valve seat to make a clear impression.
- d. Measure the valve seat width.

NOTE: _____
Where the valve seat and valve face contacted one another, the blueing will have been removed.

4. Lap:
 - valve face
 - valve seat

NOTE: _____

After replacing the cylinder head or replacing the valve and valve guide, the valve seat and valve face should be lapped.

- a. Apply a coarse lapping compound ① to the valve face.

CAUTION: _____

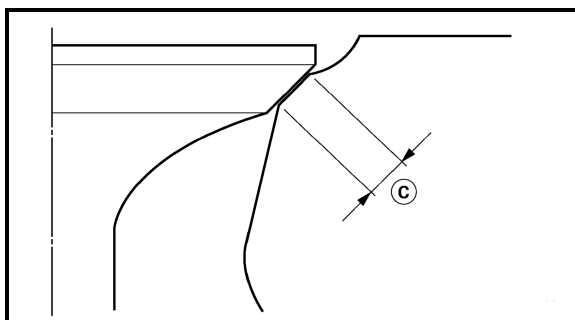
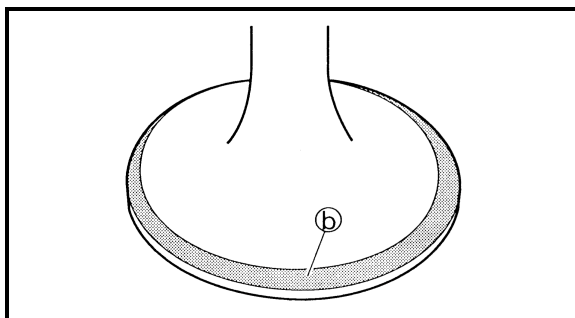
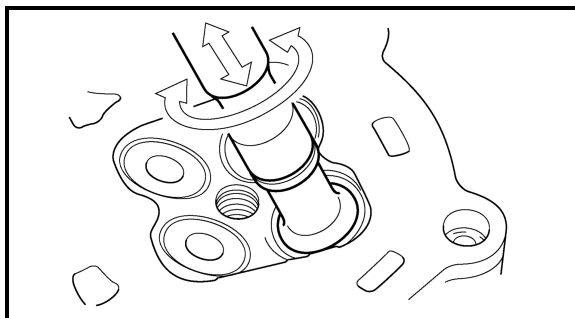
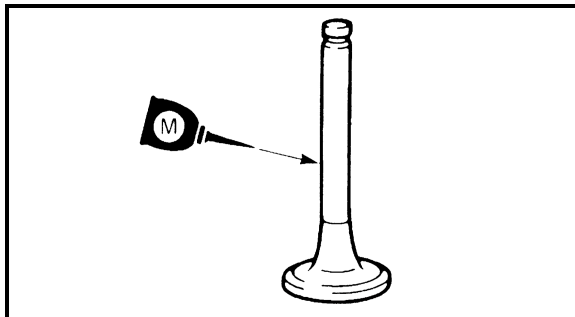
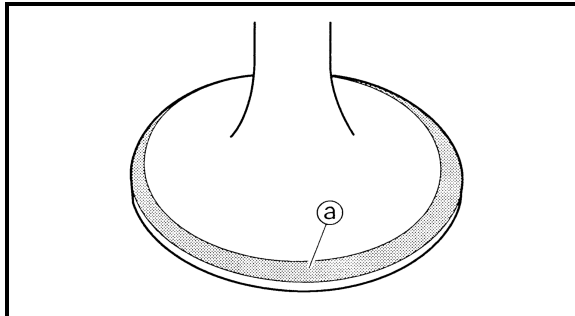
Do not let the lapping compound enter the gap between the valve stem and the valve guide.

- b. Apply molybdenum disulfide oil onto the valve stem.
- c. Install the valve into the cylinder head.
- d. Turn the valve until the valve face and valve seat are evenly polished, then clean off all of the lapping compound.

NOTE: _____

For the best lapping results, lightly tap the valve seat while rotating the valve back and forth between your hands.

- e. Apply a fine lapping compound to the valve face and repeat the above steps.
- f. After every lapping procedure, be sure to clean off all of the lapping compound from the valve face and valve seat.
- g. Apply Mechanic's blueing dye (Dykem) ② onto the valve face.
- h. Install the valve into the cylinder head.
- i. Press the valve through the valve guide and onto the valve seat to make a clear impression.
- j. Measure the valve seat width ③ again. If the valve seat width is out of specification, reface and lap the valve seat.



3-2 Connecting Rod Installation Procedure

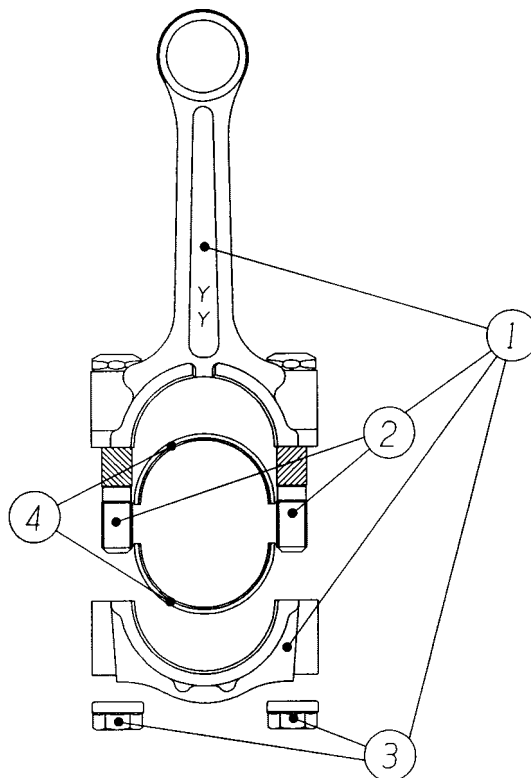
1. Install the connecting rod ① to the bearing ④ with the projections engaged. Apply oil generously to the bearing surface.
2. For installation, take care so that the letters "YY" are to the left.
3. Apply oil generously to the threaded portion of the bolt ②, the contact surface of the connecting rod cap, and the contact surfaces of the nuts ③.
4. Tighten the nuts ③ to 15Nm (1.5 m·kg) with a torque wrench.
5. Further tighten the nuts ③ to a rotation angle of 150°.

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-11650-00	CONN.ROD ASSY.,1	4	
2	5SL-11654-00	BOLT,CONN.ROD	(8)	
3	90179-07652	NUT	(8)	
4	5SL-11656-XX	BRG.,CONN.ROD	4	

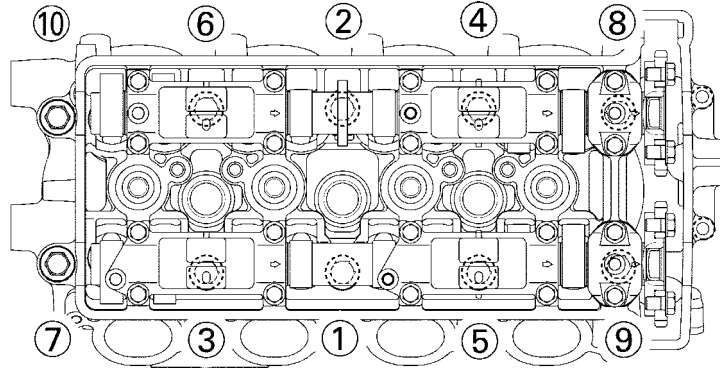
CAUTION:

- Perform steps 4 and 5 on both nuts.
- Be sure to check the direction in which to install the connecting rod cap.
- Do not reuse the bolts and nuts once used.
- For installation of new connecting rods, use four of them with the same alphabetical letter (weight classification sign).



3-3 Cylinder Head Installation Precautions

- For cylinder head installation, apply engine oil to the tightening bolts and washers and install in the tightening sequence.
- Tighten the bolts and washers three times, each to the following torque value.
 - 1st: 19 Nm (1.9 m·kg)
 - 2nd: 35 Nm (3.5 m·kg)
 - 3rd: 50 Nm (5.0 m·kg)
- After tightening, half-fill oil in the bolt installation holes on the sprocket side.



3-4 Engine Mounting Procedure

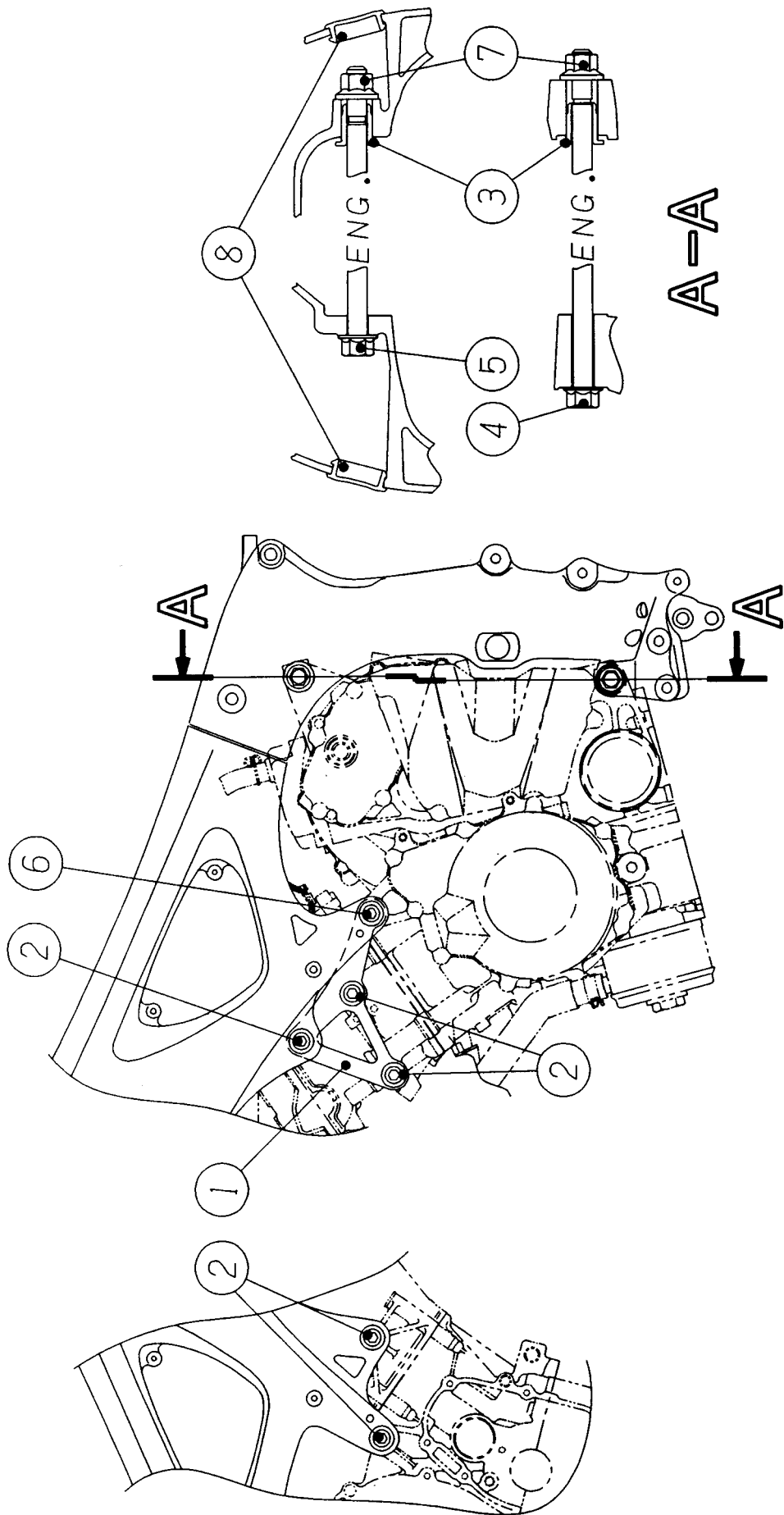
Strictly follow the steps below. If not, the frame stiffness and handling may be adversely affected.

1. Before mounting the engine to the frame, install the engine support ① on the left of the engine using the bolts ②. (Tightening torque: 45Nm, 4.5 m·kg)
2. Lightly tighten the 2 engine adjust bolts ③ beforehand on the inside of the rear right of the frame.
3. Mount the engine on the frame, insert the bolts ④ and ⑤ from the left at 2 rear places, and tighten them lightly.
4. Lightly tighten the bolts ② and ⑥, at 4 places, front right/left.
5. Tighten to specification the bolts ② and ⑥ at 2 places on front left, starting from the rear of the body. (Tightening torque: 45Nm, 4.5 m·kg)
6. Tighten to specification the engine adjust bolts ③ toward the engine from the lower one. (Tightening torque: 7Nm, 0.7 m·kg) Make sure that the engine and the seating surfaces of the adjust bolts are in contact.
7. Apply grease or engine oil to the threaded portions of the bolts ④ and ⑤, and tighten the nuts ⑦ to specification from the lower one. (Tightening torque: 45Nm, 4.5 m·kg) Attach the plugs ⑧ to the upper holes.
8. Finally, tighten to specification the 2 bolts ② at the right front from the rear of the body. (Tightening torque: 45Nm, 4.5 m·kg)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-21270-00	ENGINE SPT.ASSY.	1	
2	90110-10008	BOLT,HEX.SOCKET	5	
3	5EB-21495-00	BOLT,ADJUSTING	2	
4	90105-106A2	BOLT,FLG.	1	
5	90105-10042	BOLT,FLG.	1	
6	90110-10007	BOLT,HEX.SOCKET	1	
7	90179-10696	NUT	2	
8	90338-27007	PLUG	2	

To dismount the engine, reverse the steps.



3-5 Rear Arm Installation Procedure

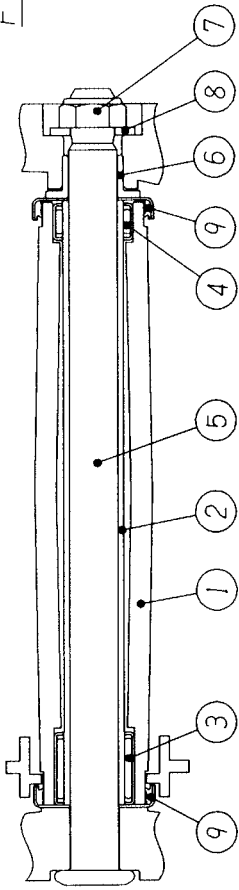
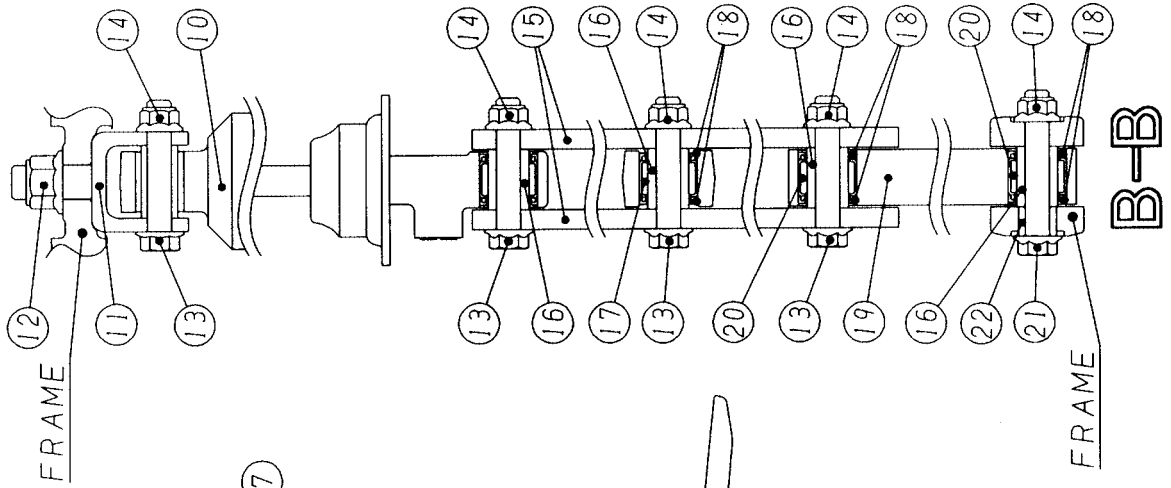
1. Tighten to specification beforehand the bracket ⑪ using the bolt ⑬ and nut ⑭ on top of the shock absorber ⑩. (Tightening torque: 44 Nm, 4.4 m·kg)
2. Tighten to specification the shock absorber ⑩ to the frame, using the nut ⑫. (Tightening torque: 52 Nm, 5.2 m·kg)
3. Attach the adjust bolt ⑥ on the right inside of the frame and lightly tighten it.
4. Mount the rear arm ① to the frame, insert the shaft ⑤ from the left, and tighten to specification the bolt ⑥ toward the rear arm. (Tightening torque: 6 Nm, 0.6 m·kg)
 - Apply grease to the inner surface of the bearing ③ and to the bush portion of the bearing ④.
 - Apply grease to the outer surface of the shaft ⑤.
 - Fill in grease for the lip and bearing inside the cover ⑨.
5. Tighten the nut ⑦ and washer ⑧ to specification. (Tightening torque: 95 Nm, 9.5 m·kg)
6. By referring to Fig. B-B, install the rear arm and the shock absorber to the frame.
 - Insert the bolt ⑬ from the left of the vehicle.
 - Install the nut ⑭ to the specified torque. (Tightening torque: 44 Nm, 4.4 m·kg)
 - Install the relay arms ⑮ with the characters "5SL" visible from the left of the vehicle.
 - Apply grease to the outer surface of the collar ⑯ with the character side outward.
 - Install the oil seal ⑰ with the character side outward.

Parts List

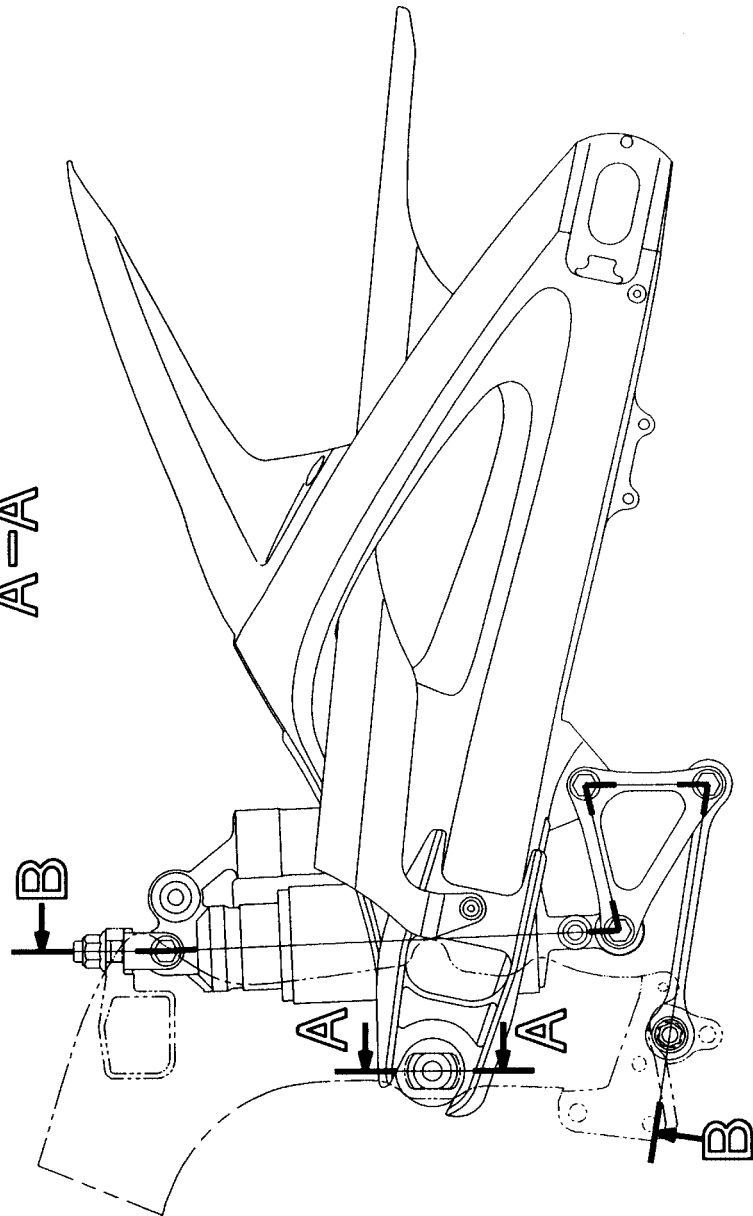
No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-22110-01	RR.ARM COMP.	1	
2	5EB-22184-00	BUSH	1	
3	93317-42550	BRG.	1	
4	93315-42536	BRG.	1	
5	4FN-22141-00	SHAFT,PIVOT	1	
6	5PW-22125-00	BOLT	1	
7	90185-18104	NUT,SELF-LOCKING	1	
8	90201-186M4	WASHER,PLAIN	1	
9	5JJ-22128-00	COVER,1	2	
10	5SL-22210-00	SHOCK ABSORBER	1	
11	5SL-22219-00	BRKT.,UPR.	1	
12	95607-14200	NUT,U FLANGE	1	
13	90105-10017	BOLT,FLG.	4	
14	95607-10200	NUT,U FLANGE	5	
15	5SL-2217A-00	ARM,RELAY 1	2	
16	90387-1012A	COLLAR	4	
17	93315-41762	BRG.	1	
18	93109-17071	SEAL,OIL	6	
19	5SL-2217M-00	ARM,1	1	

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
20	93315-31758	BRG.	2	
21	90105-10018	BOLT,FLG.	1	
22	90387-1013U	COLLAR	1	



A-A

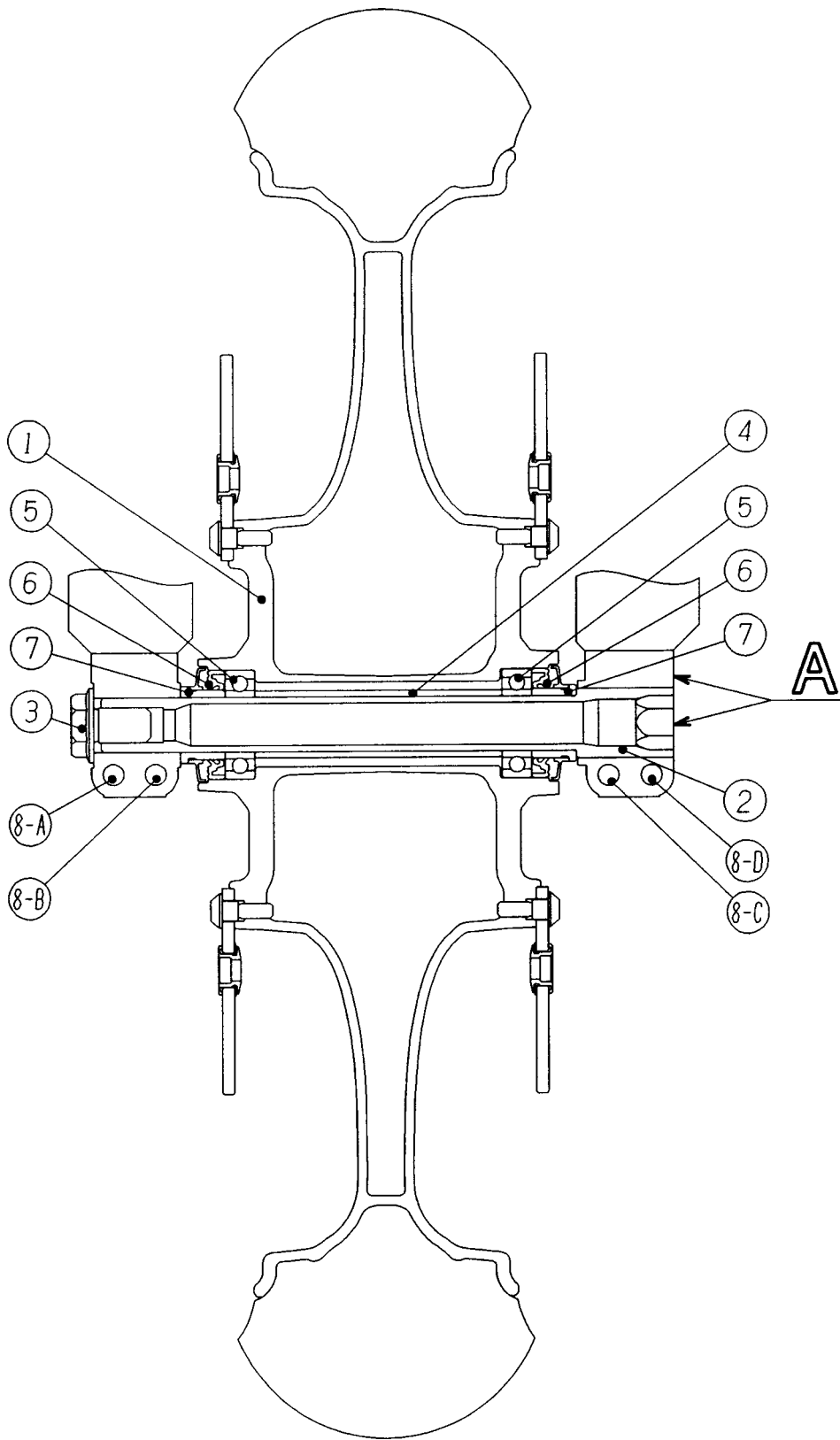


3-6 Front Wheel Installation Procedure

1. Insert the wheel axle ② from the left of the vehicle, and tighten the bolt ③ to specification on the right. (Tightening torque: 80 Nm, 8.0 m·kg) Apply grease to the contact surface of the bolt ③.
2. Without temporary fitting, tighten to specification the bolts ⑧ in order of B and A and back to B again. (Tightening torque: 17 Nm, 1.7 m·kg)
3. Make sure that the end surface of the wheel axle ② is flush with the end surface on the front fork side (the portions A). If not, make them flush by hand or with a rubber mallet.
4. Without temporal fitting, tighten the bolts ⑧ in order of D and C and back to D again. (Tightening torque: 17 Nm, 1.7 m·kg)

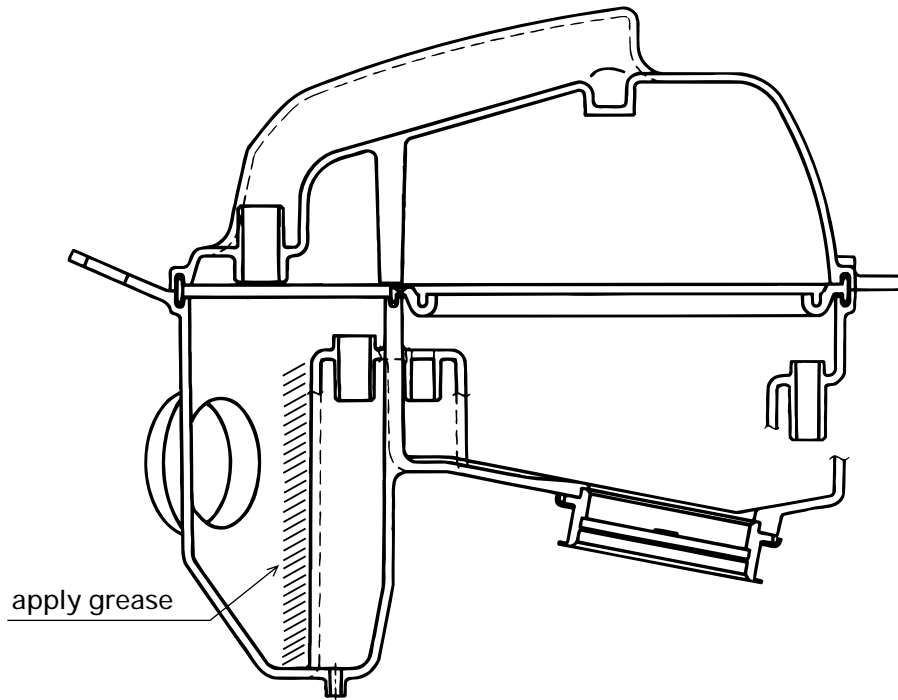
Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	5SL-25168-00	CAST WHEEL ASSY	1	
2	5SL-25181-00	AXLE,WHEEL FR.	1	
3	90105-14002	BOLT,FLG	1	
4	4XV-25117-00	SPACER,BRG.	1	
5	93306-00420	BRG.	2	
6	93106-28043	SEAL,OIL	2	
7	5SL-2510C-00	COLLAR,ASSY.	2	
8	91314-08040	BOLT	4	



3-7 Please apply grease on the wall in AIR CLEANER CASE.

This grease will catch some dusts.



4 R6 Front Fork Manual (basic information)

ADJUSTMENT

The adjustment of your front fork can be changed by following factors:

- Spring rate
- Preload on the spring
- Oil level
- Viscosity and quality of the oil
- Compression damping
- Rebound damping

The combined working of these factors will influence the working of the front fork and the balance of the bike. The standard adjustments are based on several years of experience and are in most of the cases the best adjustment.

Spring rate

The spring rate, which is mounted in the front fork, is determining for an exact starting point of an optimal spring behavior. The standard mounted spring is good in most of the cases. Exceptions can be explained by the weight or riding style of the rider.

Preload on the spring

The preload on the spring mounted in the front fork is determining for the balance of the bike. The standard fitted spring preload is good in most of the cases. The spring preload can be adjusted according to the weight and riding style of the rider.

Oil level

The oil level is important for the lubrication and the general function of the front fork and has the biggest influence on the end of the stroke. We advise to use the original advised oil level.

Adjustment of compression damping

The compression refers to the hydraulic damping when the front fork moves in. The compression can be changed by the compression adjuster which is located on the bottom of the fork. The compression damping fixes the speed of the front fork moving in.

Before you want to change the compression, it is essential to know the standard set up. The best set up for different circuits/roads can be obtained by adjusting the compression and rebound damping to your personal feeling.

The compression damping has about 13 positions:

- The minimum compression damping is position 13 (screw completely turned out)
- The maximum compression damping is position 1 (screw completely turned in)

PS: Never force to turn the screw completely in.

By doing so you can damage the adjustment needle.

Adjustment of rebound damping

The rebound refers to the hydraulic damping when the front fork moves out. The rebound can be changed by the rebound adjuster which is located on the top of the fork. The rebound damping fixes the speed of the front fork moving out. Before you want to change the rebound, it is essential to know the standard set up. The best set up for different circuits/roads can be obtained by adjusting the compression and rebound damping to your personal feeling.

The rebound damping has about 14 positions:

- The minimum rebound damping is position 14 (screw completely turned out)
- The maximum rebound damping is position 1 (screw completely turned in)

PS: Never force to turn the screw completely in.

By doing so you can damage the adjustment needle.

Guidelines for the adjustment

The working of the front fork is dependent of different factors like:

- Type of spring (linear or progressive)
- Preload on the spring
- Spring rate
- Oil level
- Viscosity of the oil
- Compression and rebound damping

It is not always easy to ascribe a problem or a certain behavior of the front fork to one of these factors. The working of the front fork is determined by the cooperation of these different factors. The list below just gives you an indication of the consequences on the changes of these adjustments.

Spring/Spring preload

- The spring is too hard or too much preload: the bike stays too high in front and even on extreme hard braking a part of the stroke is used
- The spring is too soft or too little preload: the bike stays low in front and is bottoming easy on extreme hard braking
- Standard springs are mounted in the front fork. The spring rate and/or spring preload can be changed according to the weight and riding style of the rider

Oil level

- The oil level is necessary for the lubrication and the overall function of the front fork and has most of its influence at the end of the stroke. We advise to use the standard oil level
- Respect the maximum and minimum values

Compression damping

- Standard adjustment
- Not enough damping: - the front fork is bottoming easy
- Too much damping: - the front fork feels had and harsh
 - the full stroke has not been used
 - the front is not absorbing the small bumps

Rebound Damping

- Standard adjustment
- Not enough damping: - the front fork feels springy (feels like not enough hydraulic damping)
 - the front is coming out to quickly
 - the bike feels riding high in front
- Too much damping: - the front fork feels harsh over small bumps and is not absorbing the bike feels low in front

Suspension Settings R6	WP R6	Ohlins R6
Front fork	STD	STD
Damping unit (Cartridge)	WP	Ohlins
Spring rate	0.90	0.85
Preload	6 mm	12 mm
Oil level	110 mm	110 mm
Oil	SAE 5	SAE 5
Protrusion (from top triple clamp)	30 mm ±5	30 mm ±5

Standard specification (2003 model)

Spring rate	0.85 kgf/mm (8.33 N/mm)
Preload	9.0 mm (6.5 mm – 21.5 mm)
Oil level (capacity)	106 mm (490 cc)
Oil	YAMAHA suspension oil 01 (Same as SAE 0W)
Compression adjuster position	7 click out (Min.13 click out)
Rebound adjuster position	9 click out (Min.14 click out)

KIT

Spring rate	0.90 kgf/mm (8.82 N/mm)
Preload	0.0 mm (0.0 mm to 15.0 mm)
Oil level (capacity)	106 mm (490 cc)
Oil	YAMAHA suspension oil 01
Compression adjuster position	7 click out (Min.13 click out)
Rebound adjuster position	9 click out (Min.14 click out)

SOLVING PROBLEMS

Place	Terrain	Problem	Adjustment
Straight line	Small bumps	1. Springy	Increase rebound
			Decrease preload
		2. Feels hard, stiff	A: decrease compression
			B: decrease rebound
			C: decrease preload
		3. Not reacting to bumps	A: decrease rebound
			B: decrease compression
			C: decrease preload
		Corners	Heading into a turn
B: raise oil level			
C: increase preload			
D: increase compression			
2. Head shakes when braking	A: increase spring rate		
	B: raise oil level		
3. Harsh when braking	C: increase compression		
	A: decrease oil level		
	B: decrease compression		
Accelerating out of turns	Head shakes		C: decrease preload
		Increase rebound	
G-forces		1. Bottoms	A: increase compression
			B: increase preload
			C: raise oil level
		2. Springs back	A: increase rebound
			B: decrease compression
			C: decrease preload
			D: decrease spring rate

Place	Terrain	Problem	Adjustment
Uphill	Under acceleration	Head shakes	Increase rebound
	Consecutive small bumps	Feels harsh	A: decrease spring rate
			B: decrease preload
			C: decrease rebound
			D: decrease compression
		Feels high	A: decrease spring rate
			B: raise outer tubes in clamps
	Downhill		Feels low
B: lower outer tubes in clamps			
C: increase compression			
D: increase preload			
Other		1. Too soft	A: increase spring rate
			B: increase compression
			C: increase preload
		2. Heavy feeling	Decrease rebound
		3. Too stiff	A: decrease compression
			B: decrease spring rate
C: decrease preload			

5 R6 Shock Absorber Manual (basic information)

ADJUSTMENT

Following factors can change the adjustment of a shock:

- spring rate
- preload on the spring
- compression damping
- rebound damping

The combined working of these factors will influence the working of the shock and the balance of the bike. The standard adjustments are based on several years of experience and are the best adjustments for general use. Adjustment is possible for extreme wishes of circuit of rider (weight).

Spring rate

The spring rate and the adjustable preload of the spring, mounted on the shock are determining for an exact starting point of optimal spring behavior.

Preload on the spring

We can change the preload of the spring in two different ways:

- a. with the shock mounted on the bike
turn the preload nut in the way you want to adjust, softer or harder
- b. with the shock removed of the bike
mount the shock in a vice and turn the preload nut in the way you want to adjust, softer or harder

Adjustment of compression damping

The compression refers to the hydraulic damping when the shock moves in. The compression can be changed by the compression adjuster which is located above the nitrogen tank.

The compression damping fixes the speed of the shock moving in.

The compression damping also makes sure that the shock doesn't bottom at heavy impact.

Before you want to change the compression, it is essential to know the standard set up. The best set up for different circuits, rider's style (with or without passenger) can be obtained by adjusting the compression and rebound damping to your personal feeling.

The compression damping has about 13 positions.

- The minimum compression damping is position 13 (screw completely turned out)
- The maximum compression damping is position 1 (screw completely turned in)

PS: Never force to turn the screw completely in.

By doing so you can damage the adjustment needle.

Adjustment of rebound damping

The rebound refers to the hydraulic damping when the shock moves out. The rebound can be changed by the rebound adjuster which is located on the bottom of the shock. The rebound damping fixes the speed of the shock moving out.

Before you want to change the rebound, it is essential to know the standard set up. The best set up for different circuits, rider's style (with or without passenger) can be obtained by adjusting the compression and rebound damping to your personal feeling.

The rebound damping has about 14 positions.

- The minimum rebound damping is position 14 (screw completely turned out)
- The maximum rebound damping is position 1 (screw completely in)

PS: Never force to turn the screw completely in.

By doing so you can damage the adjustment needle.

GUIDE-LINES FOR THE ADJUSTMENT

The working of a shock is dependent of different factors like:

- type of spring (linear or progressive)
- spring rate
- preload on the spring
- nitrogen pressure in the tank
- viscosity of the oil
- compression and rebound damping

It is not always easy to ascribe a problem or a certain behavior of the shock to one of these factors. The working of the shock is determined by the cooperation of these different factors. The list below just gives you an indication on the consequences on the changes of these adjustments.

Spring

- the spring is too hard: it is easy to turn, but the rear wheel is nervous on roughness
- the spring is too soft: the bike feels oversteering in fast corners
- a standard spring is mounted on the shock. You can change the spring rate according to the weight of the rider. Standard spring for rider of ± 80 kg.

Preload of the spring

- set the preload of the spring, depending on the weight, habits and the skill of the rider

Compression damping

- standard adjustment
- not enough compression: - the shock is bottoming easy
 - the bike sits low
 - the bike turns difficult
- too much compression: - the bike is feeling hard and stiff
 - the bike feels high
 - the shock is not using complete stroke
 - the shock just hits the bumps and is not absorbing these

Rebound damping

- standard adjustment
- not enough rebound: - the shock feels springy (feels like no hydraulic damping)
 - the shock moves out too quickly, kicks up
 - the bike feels high
- too much rebound - the shock feels stiff over a series of small bumps and is not absorbing (not following) these
 - the bike has little traction
 - the bike feels low

Rear shock Brand	WP	Ohlins
Spring rate	9.5	9.5
Preload	10 mm	11 mm
Shock length (bold to bold)	305 mm	305 mm

Standard specification (2003 model)

Spring rate	10.0 kgf/mm (98.00 N/mm)
Preload	11.0 mm (8.0 mm to 16.0 mm)
Compression adjuster position	7 click out (Min. 13 click out)
Rebound adjuster position	9 click out (Min. 14 click out)
Free length	295 mm (+2 mm, -1 mm)

KIT

Spring rate	10.7 kgf/mm (104.86 N/mm)
Preload	10.5 mm (7.5 mm to 15.5 mm)
Compression adjuster position	7 click out (Min. 13 click out)
Rebound adjuster position	9 click out (Min. 14 click out)
Free length	295 mm (+2 mm, -0.1 mm)

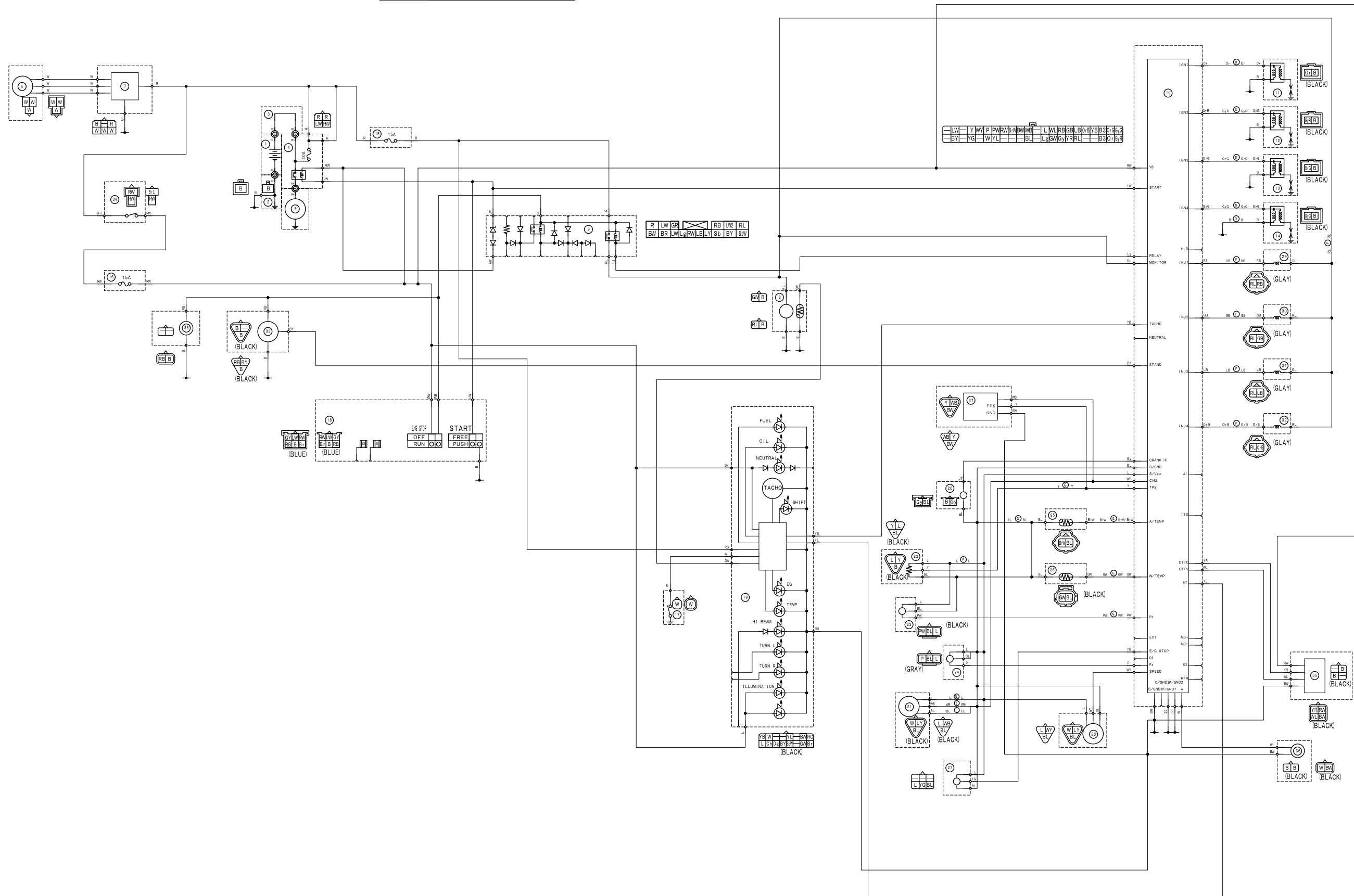
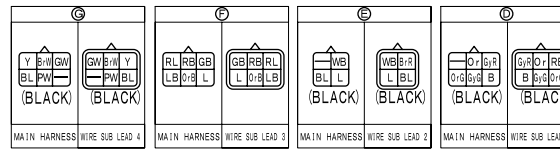
SOLVING PROBLEMS

Place	Terrain	Problem	Adjustment
In straight line	Small bumps	1. Springy	Increase rebound
		2. Feels heavy	Decrease rebound
		3. Lack of traction	Decrease rebound
Corners	Heading into a turn	1. Springs back	A: decrease spring rate
			B: decrease spring preload
			C: increase rebound
			D: decrease compression
	Accelerating out of a turn	1. Lack of traction	A: decrease spring rate
			B: decrease rebound
Accelerating out of a turn	2. Squats	A: increase spring preload	
		B: increase spring rate	
		C: increase compression	
G-Loads		1. Bottoms	A: increase spring rate
			B: increase compression
		2. Kicks out	A: increase spring rate
	B: decrease compression		
	3. Springs back	Increase rebound	
	Uphill		1. Springs back
B: increase rebound			
2. Bottoms, kicks out in whoops			Decrease rebound
Downhill		1. Stiff	A: decrease spring rate
			B: decrease spring preload
			C: decrease compression
		2. Springs back	A: decrease spring rate
			B: decrease spring preload
			C: decrease compression
			D: increase rebound

Place	Terrain	Problem	Adjustment
Other		1. Too stiff overall	A: decrease spring rate
			B: decrease compression
		2. Feels springy	A: decrease compression
		3. Feels like it's not using enough stroke	A: decrease spring rate
			B: decrease compression

2003 YZF-R6 Wiring Diagram

MARK	EXPLANATION
R, B, G, W, ...	COLOR CORD
⊥	CONNECTING WITH GND. WIRE
⊥	GND.
⊙ ⊙ ⊙	CONNECTOR MARK (BETWEEN MAIN & SUB HARNESS)
⊞	CONNECTOR SYMBOL



No.	COMPONENTS
1	BATTERY
2	WIRE MINUS LEAD
3	WIRE PLUS LEAD
4	STARTER RELAY
5	STARTER MOTOR
6	ACM
7	REC/REGU
8	FUEL PUMP
9	RELAY ASSY
10	ECU
11	IG COIL 4
12	IG COIL 3
13	IG COIL 2
14	IG COIL 1
15	FUSE (EFI)
16	FUSE (IGNITION)
17	OIL LEVEL GAUGE
18	SW HANDLE R
19	METER
20	CRANK SHAFT SENSOR
21	CAM SHAFT SENSOR
22	TPS
23	PRESSURE SENSOR (P _b)
24	PRESSURE SENSOR (P _a)
25	AIR TEMP. SENSOR
26	WATER TEMP. SENSOR
27	EG STOP SW
28	SPEED SENSOR
29	INJECTOR 1
30	INJECTOR 2
31	INJECTOR 3
32	INJECTOR 4
33	ENGINE KILL SWITCH
34	MAIN SW.
35	COMMUNICATION TOOL
36	SELECTIVE SW.
37	MEASUREMENT TOOL
38	POWER SUPPLY

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