

KIT MANUAL 2016 YZF-R6 SS



***RACING
KIT PARTS
YZF-R6***

YEC
RACING PARTS

Introduction

- This manual is intended for persons with knowledge and experience of motorcycles. Please refer to the YZF-R6 service manual, which shall be published from YAMAHA MOTOR CO. LTD., for information on part assembly and maintenance.
- The design of the YZF-R6 racing kit is based on YZF-R6, according to FIM racing rules, but that does not mean the kit conforms to all competitions. When used in races, riders must mount the YZF-R6 racing kit at their own discretion after checking the rules of competition issued by the sponsor.

About Warranty

- Please understand that these parts are not covered by warranty.
- The Manufacturer does not take any responsibility for problems caused by these parts.

Request

- These kit parts are intended exclusively for racing purposes. You are strictly requested not to use them 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.

Parts List Symbols

- The star mark (*) means that the part is included in the kit set and is a genuine Yamaha part. Therefore, you can easily purchase the part at any Yamaha part dealer when necessary.
- The circle mark (°) means that although the part is included in the kit set it can also be purchased individually.

	No.	PART No.	PART NAME	Q'TY	REMARKS
°	1	4C8-11181-70	GASKET, CYLINDER HEAD 1	3	t=0.30mm
*	2	5VY-11351-00	GASKET, CYLINDER 1	3	
*	3	4C8-11603-00	PISTON RING SET	12	
	4	5VY-1165A-01	BOLT, CONNECTING ROD SPECIAL	24	
*				24	

Symbol Marks

Particularly important information is distinguished in this manual by the following notations.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



A WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



A NOTICE indicates special precautions that must be taken to avoid damage to the vehicle or other property.



A TIP provides key information to make procedures easier or clearer.

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1 Engine Specifications

Spec		SSP	STK	STD
Displacement		599cm ³	599cm ³	599cm ³
Bore/Stroke		67.0 × 42.5 mm	67.0 × 42.5 mm	67.0 × 42.5 mm
Maximum engine speed (limiter controlled speed)		15800 rpm	15800 rpm	15800 rpm
Compression ratio (recommended value)		14.5:1 (Depend of head-gasket thickness and cylinder head surface grinding)	13.7:1 (Depending on the thickness of the head gasket)	13.2:1
Valve timing (event angle)	INT.	110°	105°	105°
	EXT.	115°	110°	110°
Squish height (minimum)		0.60 mm	0.60 mm	0.70 mm
Clearance between valve and piston (minimum)	INT.	1.05 mm (ATDC 12°)	1.05 mm (ATDC 12°)	1.15 mm (ATDC 12°)
	EXT.	1.62 mm (BTDC 12°)	1.62 mm (BTDC 12°)	1.80 mm (BTDC 12°)
valve (tappet) clearance	INT.	0.15 – 0.19 mm	0.18 – 0.22 mm	0.18 – 0.22 mm
	EXT.	0.23 – 0.27 mm	0.23 – 0.27 mm	0.23 – 0.27 mm

2 Kit Parts

2-1 Engine Parts

1. Maintenance Set (2C0-MAINT-71)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
°	1	2C0-11181-76	GASKET, CYLINDER HEAD	3	t=0.45mm
*	2	2C0-11603-00	PISTON RING SET	12	
*	3	93450-16159	CIRCLIP	24	
	4	2C0-1165A-00	BOLT, CONNECTING ROD	24	
*	5	90179-07001	NUT	24	
*	6	4SV-12119-00	SEAL, VALVE STEM OIL	48	
*	7	2C0-12213-00	GASKET, TENSIONER	3	
°	8	2C0-13414-70	GASKET, STRAINER	3	ANTI STICK TYPE
°	9	2C0-15451-70	GASKET, CRANKCASE COVER 1	3	ANTI STICK TYPE
°	10	2C0-15461-70	GASKET, CRANKCASE COVER 2	3	ANTI STICK TYPE
°	11	2C0-15456-70	GSKT., 1	3	ANTI STICK TYPE
*	12	93102-35017	SEAL, OIL	3	FOR DRIVE AXLE
*	13	90151-06024	SCREW, CROSSRECESSED COUNTERSUNK	9	FOR BEARING HOUSING

2. Spark Plug Set (5FL-R045Q-70, 13S-R373A-70)

Parts List

Semi surface discharge Type (5FL-R045Q-70)

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	5FL-1119C-70	PLUG, SPARK	4	NGK R0045Q-10

Parts List

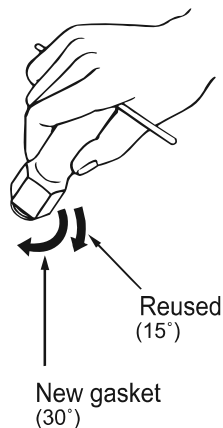
Angled ground strap Type (13S-R373A-70)

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	13S-1119C-70	PLUG, SPARK	4	NGK R0373A-10

TIP

Since these spark plugs have a copper gasket, caution is needed during installation on the following points.

1. The tightening torque is 12 – 15 N•m (1.2 – 1.5 kgf•m).
2. When not checking the torque, tighten by rotating through 30° after manual tightening in the case of new plugs. When reusing plugs, tighten by rotating through 15°.



3. Head Gasket

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2C0-11181-71	GASKET, CYLINDER HEAD	1	t=0.40mm
	2	2C0-11181-76	GASKET, CYLINDER HEAD	1	t=0.45mm
	3	2C0-11181-81	GASKET, CYLINDER HEAD	1	t=0.50mm
	4	2C0-11181-86	GASKET, CYLINDER HEAD	1	t=0.55mm

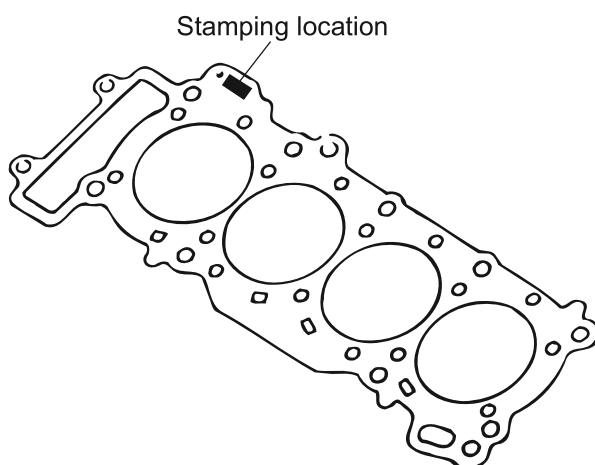
*The thickness of a standard part is t=0.60 mm.

These parts are used to adjust the compression ratio for improving performance by selecting a given gasket (thickness).

Be sure to measure the squish height and choose the appropriate gasket so that it meets the recommended height. (Recommended squish height: 0.6 mm or more)

TIP

Squish height means the gap between the flat portion of the piston and the head cylinder.



Measuring the volume of the cylinder head combustion chamber

TIP

To obtain the highest performance for race use, the four cylinders should be uniform. If you modify the head cylinder (combustion chamber volume), be sure to measure the combustion chamber volume and do the work based on the measured value.

Measure the volume of the combustion chamber of the cylinder head (commonly called the dome volume) as follows.

Measuring equipment

1. Burette
2. Clear plastic plate
3. Oil (3:1 mixture of torque converter oil and white gasoline)
4. Vaseline (to seal the valve and plastic plate)

Measurement method

1. Tighten a regulation spark plug to the regulation torque in the cylinder head to be measured.
2. Set so that the alignment surface of the combustion chamber is level.
3. Apply a thin coat of Vaseline to the valve face and set the IN and EX valves.
4. Apply a thin coat of Vaseline to the combustion chamber alignment surface and set the plastic plate.
5. Add drops of oil from the burette. The total added amount minus the valve back clearance is the volume of the combustion chamber.

4. Piston Set (13S-116A0-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
*	1	13S-11631-00	PISTON	4	
*	2	2C0-11603-00	PISTON RING SET	4	
*	3	2C0-11633-00	PIN, PISTON	4	
*	4	93450-16159	CIRCLIP	8	

Select four pistons so that the difference in their weights does not exceed 0.5g.

5. Connecting Rod Set (13S-1165B-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
*	1	13S-11650-00	CONN. ROD ASSY	4	

Select four connecting rod assemblies so that the difference in their weights does not exceed 2g and combine them so that the small end weights are uniform. (by Yamaha's measuring method)

6. Crankshaft (2C0-11411-70)

Parts List

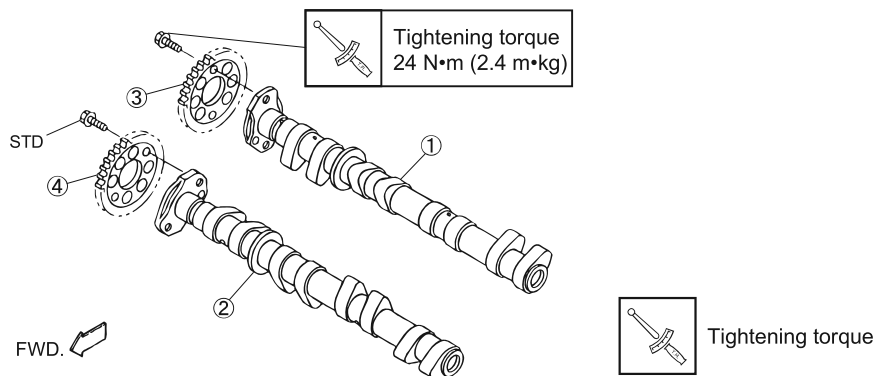
	No.	PART No.	PART NAME	Q'TY	REMARKS
*	1	2C0-11411-00	CRANKSHAFT	1	

Select a crankshaft with good balance.

7. Cam Shaft and Cam Sprocket

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2C0-12171-73	SHAFT, CAM 1	1	INT
	2	2C0-12181-71	SHAFT, CAM 2	1	EXT
	3	2C0-12176-80	SPROCKET, CAM 1	1	INT
	4	2C0-12177-80	SPROCKET, CAM 2	1	EXT



Assembly of Cam Sprocket

By making the assembly holes of the cam sprocket of the racing kit long, the valve timing can be adjusted within the range of -2° to $+6^{\circ}$ (CA) compared with standard timing.

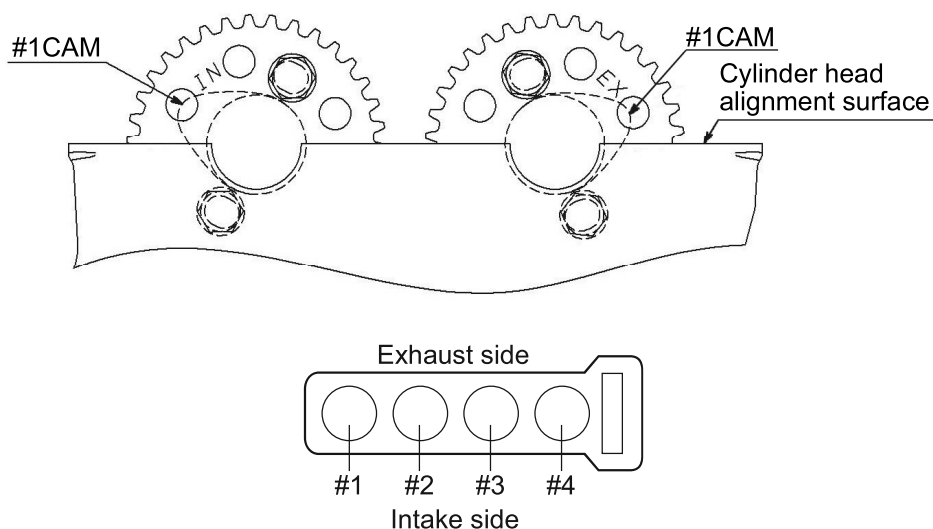
TIP

For valve timing adjustment, refer to the KIT TOOLS MANUAL.

NOTICE

- When fitting the camshaft, use the cam sprockets of the kit and always set the valve timing to match. If otherwise, no intended performance can be expected and more over, the engine may be damaged.
- When using this camshaft, use the valve spring set 2C0-A2110-70.

Sprocket assembly position at top dead center point of #1 cylinder compression



8. Valve Spring Set (2C0-A2110-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2C0-12113-70	SPRING,1	8	For 2C0-12171-71 (INT) Identifying color: Light blue
	2	2C0-12114-70	SPRING,2	8	For 2C0-12181-71 (EXT) Identifying color: Yellow
	3	2C0-12117-70	RET., VALVE SPRING	16	

- This set will be effective in improving the engine performance and durability if it is provided exclusively for the kit cam shaft and used in combination.

NOTICE

When using this valve spring, use the camshafts 2C0-12171-71, 2C0-12171-72, 2C0-12171-73, and 2C0-12181-71.

The set of the camshaft, valve spring, ECU and air funnel must be used in the following combination.

MODEL	CAMSHAFT (IN)	CAMSHAFT (EX)	VALVE SPRING	ECU	AIR FUNNEL SET
2008	2C0-12171-71	2C0-12181-71	2C0-A2110-70	2C0-8591A-80	2C0-A4460-80
2009				2C0-8591A-90	MGC-A300908-00
2010	2C0-12171-72			2C0-8591A-91	MGC-A300908-10
2011	2C0-12171-73			2C0-8591A-92	
2012				2C0-8591A-93	
2013				2C0-8591A-94	
2014					
2015					
2016					

9. Oil Pump (2C0-13300-70)

Parts List

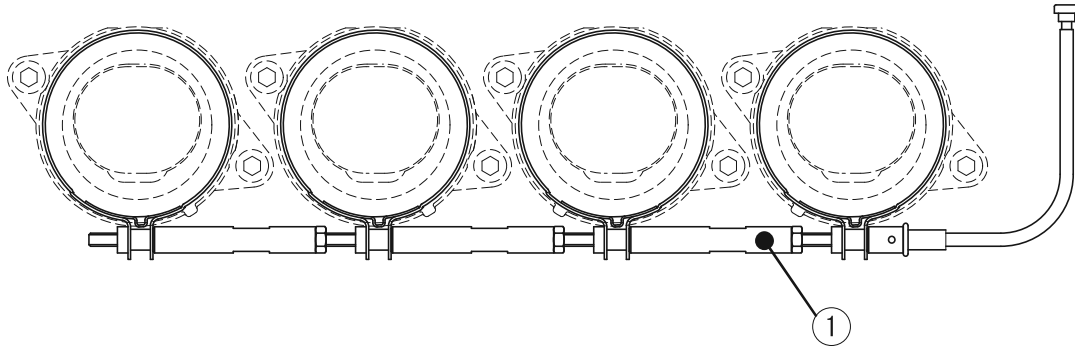
	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2C0-13300-70	OIL PUMP ASSY.	1	

- This pump is capable of a larger discharge than the STD counterpart.

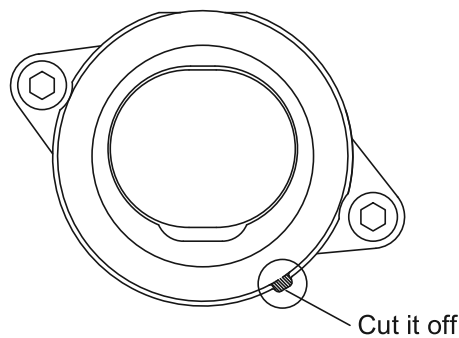
10. Throttle Body Clamp Assembly (2C0-1351A-70)

Parts List

No.	PART No.	PART NAME	Q'TY	REMARKS
1	2C0-1351A-70	THROTTLE BODY CLAMP ASSY.	1	



This part is used to enhance maintenance performance of the throttle body. Before using it, cut off the protrusion for positioning bands at the cabjoint.



The part has a collar to prevent over-tightening. In normal cases, the part will not be tightened till it reaches to the collar. Just manually tighten it.

Make sure to put a new band through a M4 x 0.7 tap before using it.

11. AIS Plug Set (13S-A4890-70)

This plug set is used when the AIS (Air Induction System), an exhaust gas purification system, is removed.

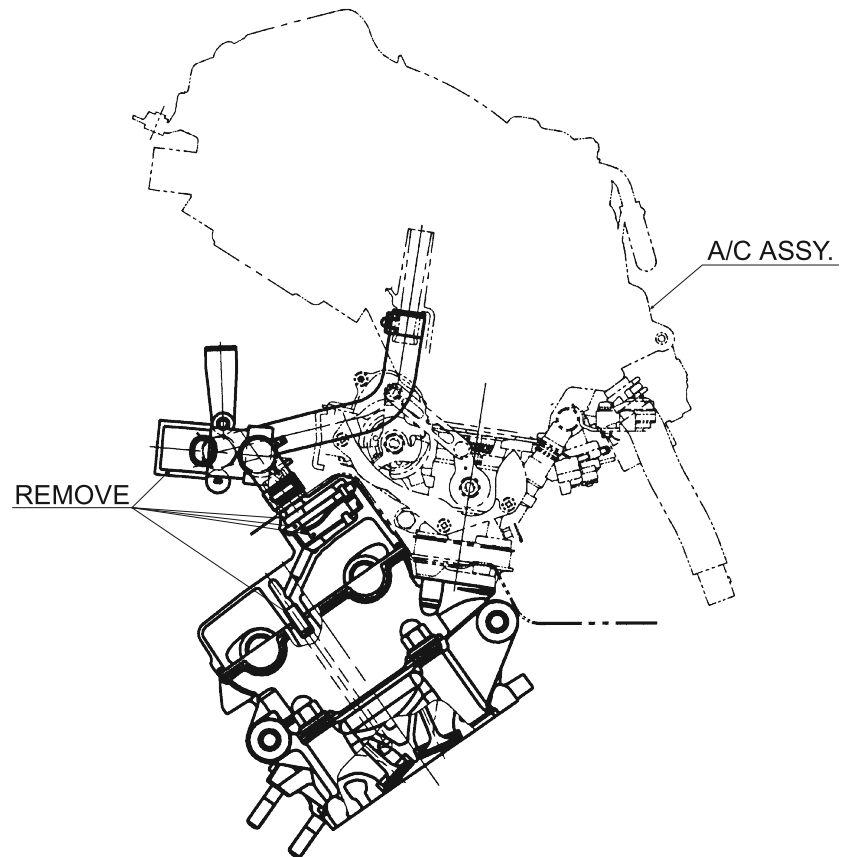
Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	5SL-1482L-70	PLATE, 2	2	
*	2	93608-16M16	PIN, DOWEL	4	
	3	90336-10020	PLUG, TAPER	1	

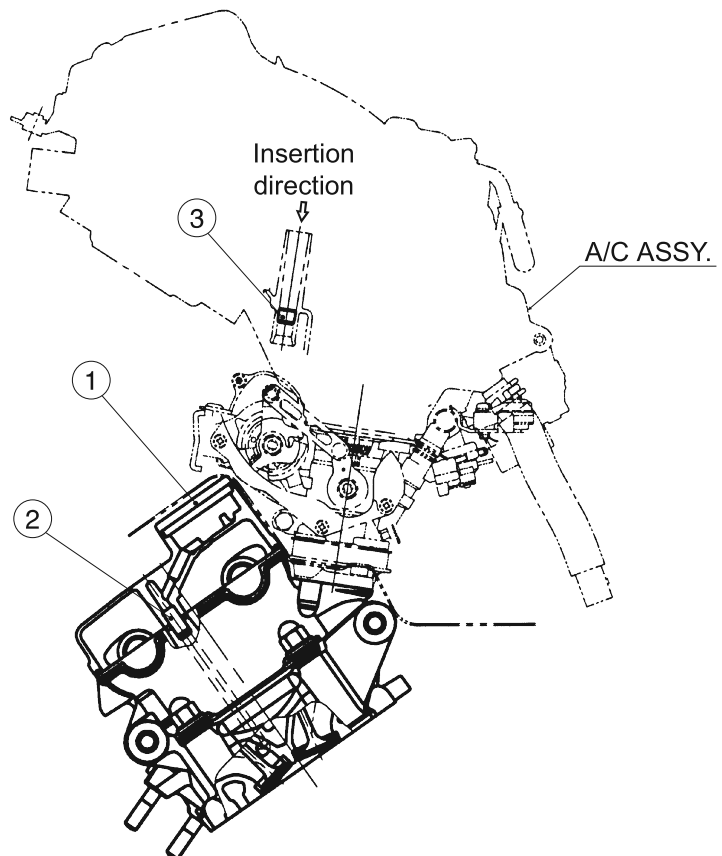
Installation

1. Remove the hose attached to the cylinder head cover and the air cut-off valve assembly accompanying the hose.
2. Remove the cap fitted to the hose and remove the reed valve and plate from the inside.
3. Install the plate (5SL-1482L-70) in replacement of the cap. Apply liquid gasket to the plate.
4. Remove the cylinder head cover and the four collars fitted to the cover. Install the PIN (93608-16M16).
5. After removing the hose connected to the air cleaner case from the air-cut valve assembly, open the upper case of the air cleaner case and insert the PLUG (90336-10020) into the hole where the hose was connected.

STD



KIT

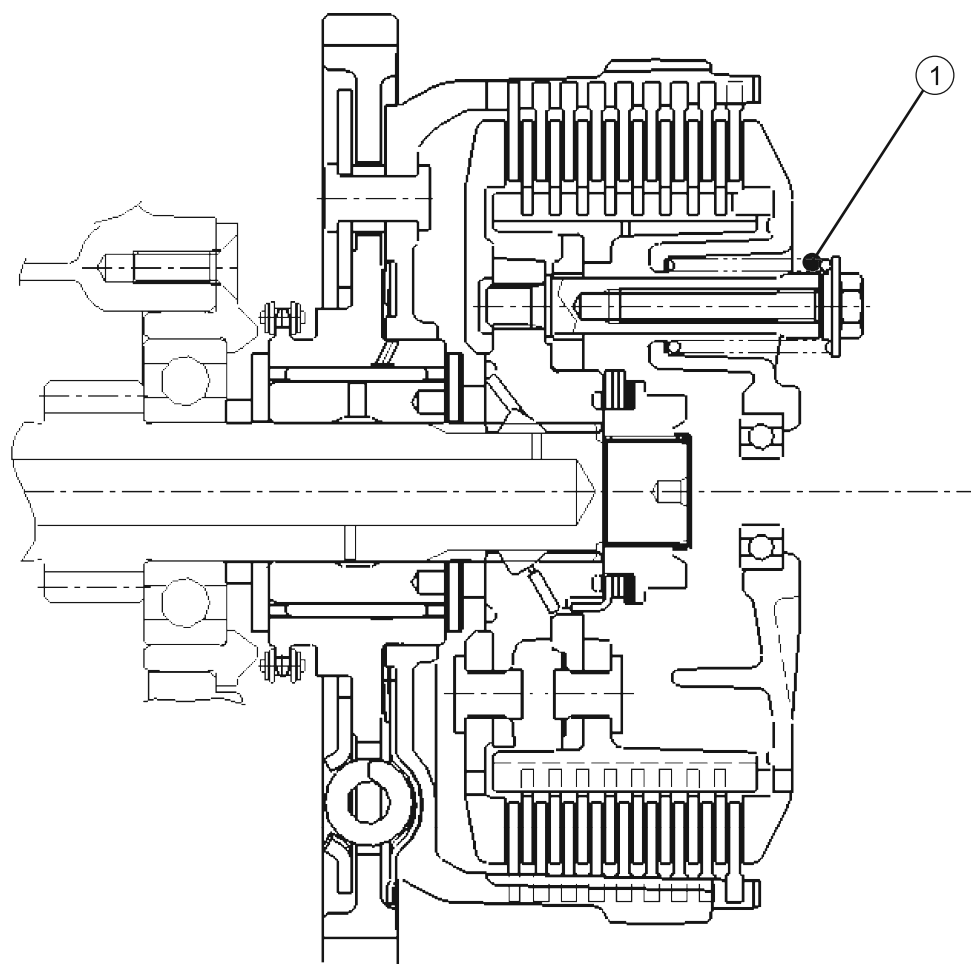


12. Clutch Spring Set (2C0-A6330-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2C0-16334-70	SPRING, CLUTCH 2	6	Identifying color: Green

The clutch spring should have a bigger mounting load than standard.

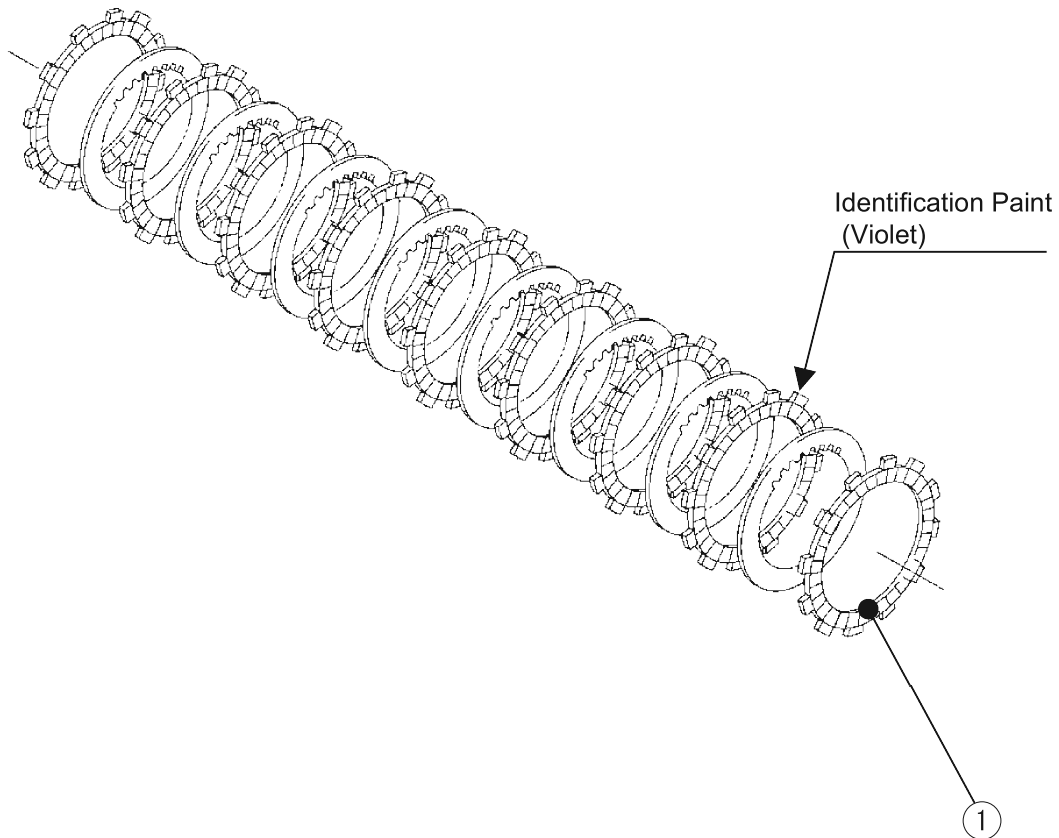


13. Friction Plate Set (2C0-A6321-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	5EB-16321-72	PLATE, FRICTION 1	9	

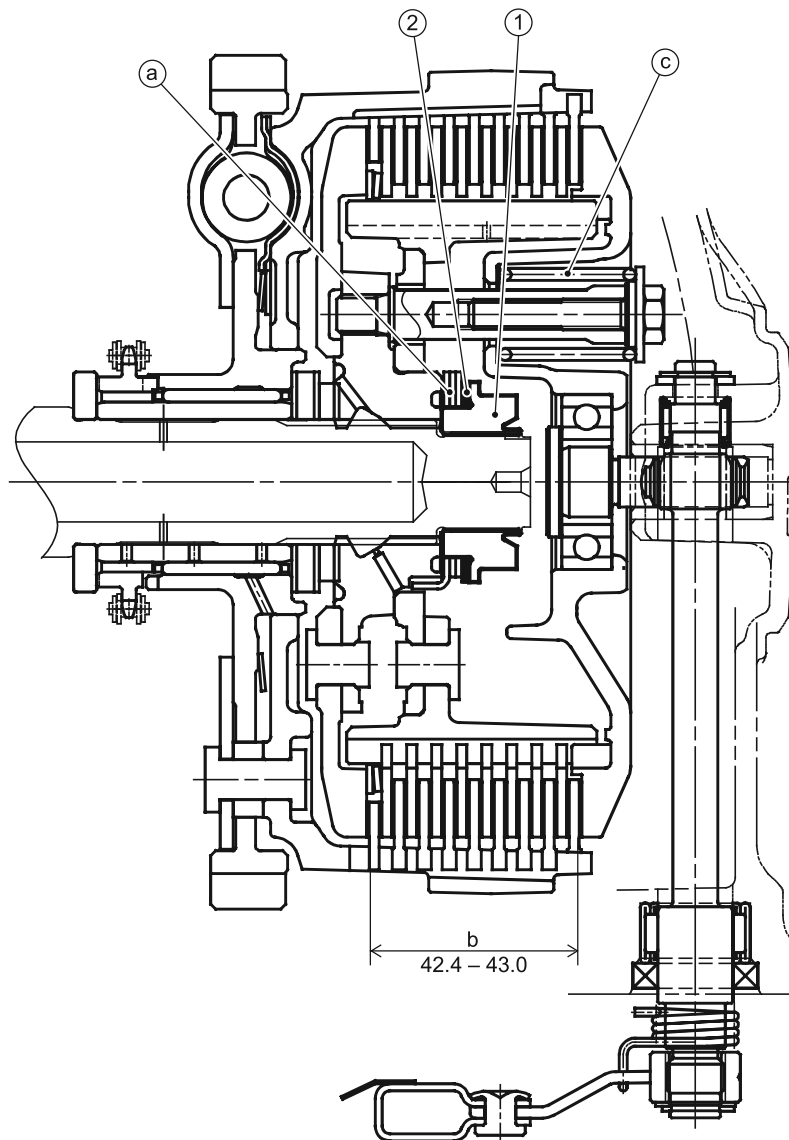
Compared to STD, the friction plate enhances durability and operation.



14. Slipper Clutch Setting Set (4B1-A6377-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
°	1	4B1-16377-70	NUT, LOCK	1	
°	2	4B1-16391-70	SHIM	3	



(Setting of back torque limiter of clutch).

A clutch with a back torque limiter mechanism is installed in the YZF-R6 engines. The operation of the back torque limiter can be adjusted through adjusting: ② the number of SHIMs (set up for the kit); ① the number of springs; ③ the whole thickness of the clutch plate; and the strength of ④ spring (set up for the kit) of the slipper clutch setting set.

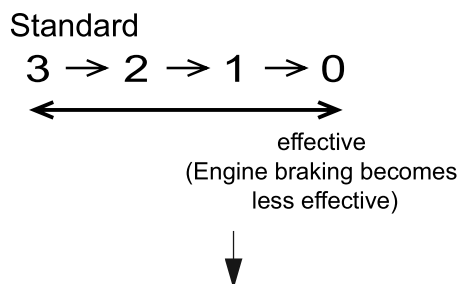
(Recommended setting method)

To begin with, the dimensions of the clutch are re-set to the standard values. (For details, please refer to the service manual published from YAMAHA MOTOR CO. LTD.



If you attach the slipper clutch setting of kit ① ②, make it the same as the standard setting.

When decreasing the number of SHIMs (standard setting is three) of slipper clutch setting set, the back torque limiter tends to be effective (Engine braking becomes less effective).



Further, when decreasing the number of ① spring (the number of standard setting is three) to two, the back torque limiter becomes effective (Engine braking becomes less effective).

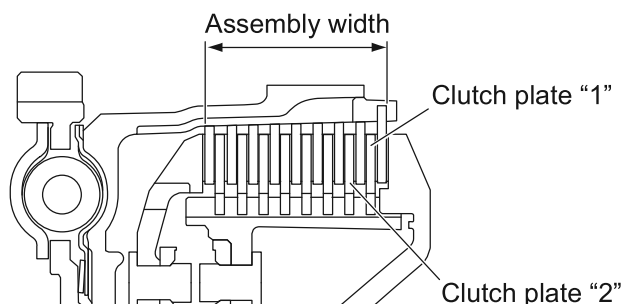
The clutch spring ③ can be either the kit item or the standard item.

If you mount the clutch spring from the kit, the back torque limiter tends to be less effective (the engine brake becomes stronger).

NOTICE

When decreasing the number of ① spring to two, the caution should be taken to surely use three pieces of SHIMs for the slipper clutch setting set. If its number being less than the above, the less load may be supported so as to exert serious influences on driving. Decreasing the number of ① spring to one is not allowed.

(Clutch plate adjustment)



Assembly width adjusted by clutch plate “1” and “2”.

Select the clutch plate from the following table.

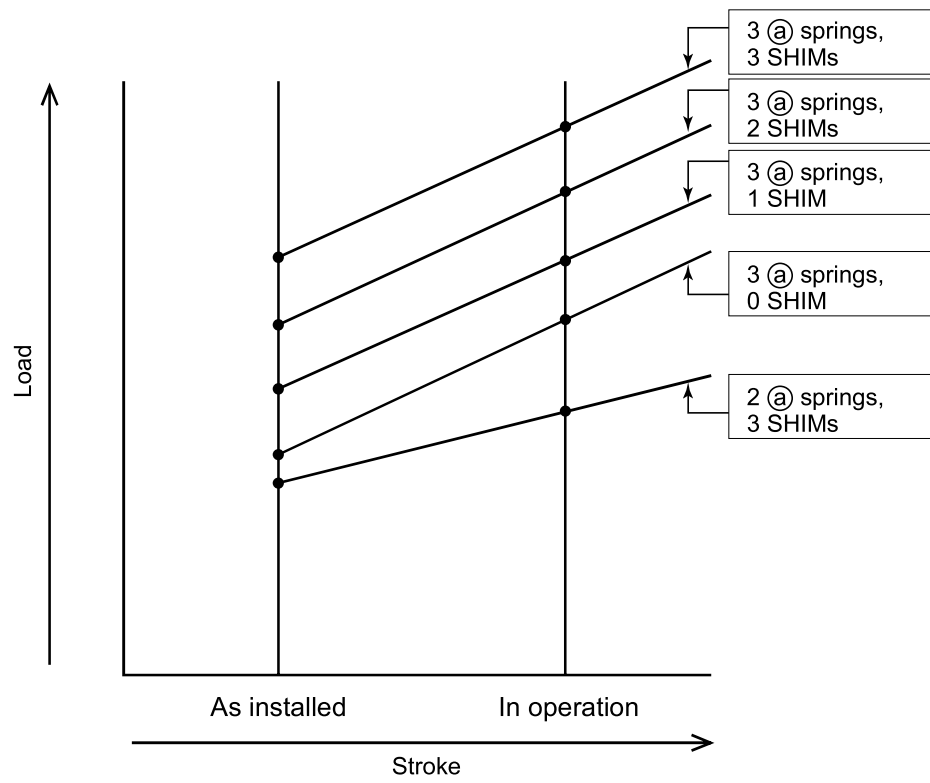
Clutch plate “1”		
PART No.	Thickness	
168-16325-00	1.6 mm (0.063 in)	
3J2-16324-00	2.0 mm (0.079 in)	STD
168-16324-00	2.3 mm (0.091 in)	

Clutch plate “2”		
PART No.	Thickness	
3J2-16324-00	2.0 mm (0.079 in)	STD
168-16324-00	2.3 mm (0.091 in)	

TIP

When adjusting the clutch assembly width [by replacing the clutch plate(s)], be sure to replace the clutch plate “1” fast.

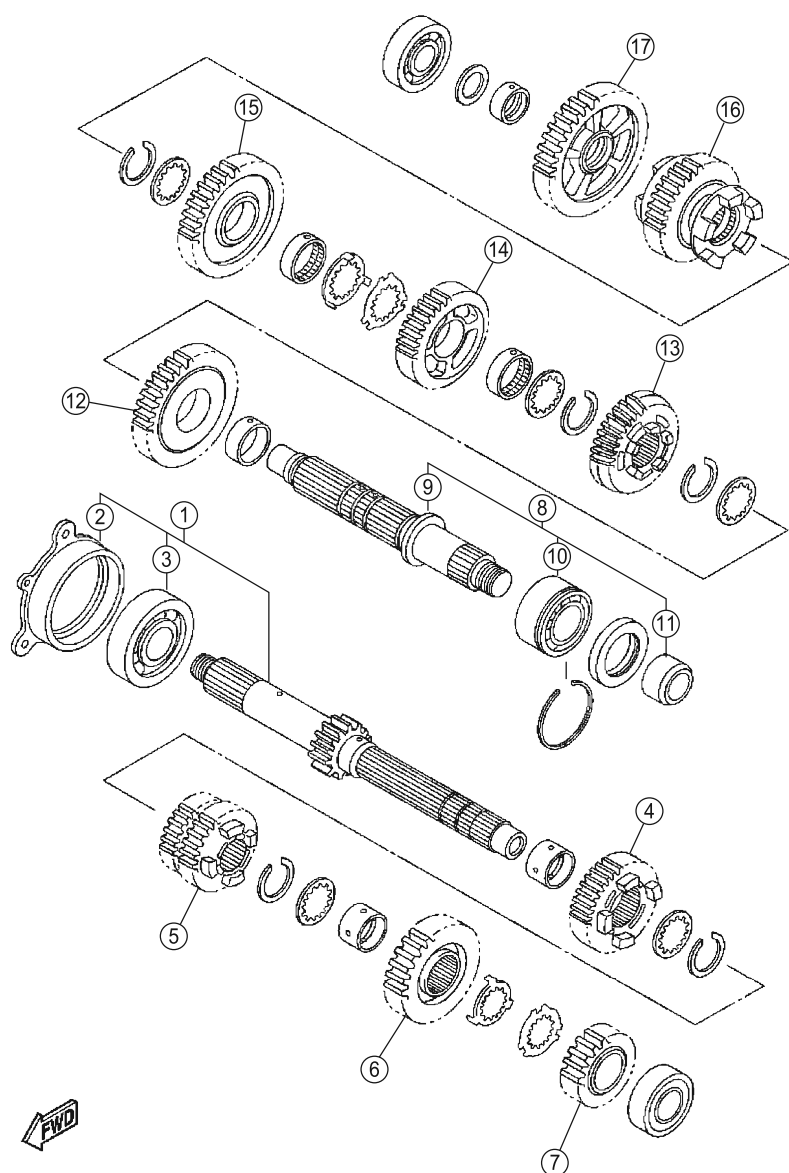
After replacing the clutch plate “1”, if specifications cannot be met, replace the clutch plate “2”.



15. Transmission Gear

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2C0-17411-80-A	AXLE, MAIN	1	A
	1	2C0-17411-90-B	AXLE, MAIN	1	B
*	1	2C0-17411-00	AXLE, MAIN	1	C
*	2	2C0-15163-00	HSG., BEARING	1	
*	3	93306-20562	BRG.	1	
	4	2C0-17151-71-A	GEAR, 5TH PINION	1	A
	4	2C0-17151-80-B	GEAR, 5TH PINION	1	B
	4	2C0-17151-90-C	GEAR, 5TH PINION	1	C
	5	2C0-17131-80-A	GEAR, 3RD PINION	1	A
	5	2C0-17131-71-B	GEAR, 3RD PINION	1	B
	5	2C0-17131-90-C	GEAR, 3RD PINION	1	C
	6	2C0-17161-70-A	GEAR, 6TH PINION	1	A
*	6	2C0-17161-00	GEAR, 6TH PINION	1	B
	6	2C0-17161-90-C	GEAR, 6TH PINION	1	C
	7	2C0-17121-80-A	GEAR, 2ND PINION	1	A
	7	2C0-17121-90-B	GEAR, 2ND PINION	1	B
*	7	2C0-17121-00	GEAR, 2ND PINION	1	C
	8	2C0-17402-70	DRIVE, AXLE ASSY.	1	
*	9	2C0-17421-00	AXLE, DRIVE	1	
*	10	93305-20509	BRG.	1	
*	11	90387-25016	COLLAR	1	
	12	2C0-17221-81-A	GEAR, 2ND WHEEL	1	A
	12	2C0-17221-90-B	GEAR, 2ND WHEEL	1	B
*	12	2C0-17221-00	GEAR, 2ND WHEEL	1	C
	13	2C0-17261-71-A	GEAR, 6TH WHEEL	1	A
	13	2C0-17261-80-B	GEAR, 6TH WHEEL	1	B
	13	2C0-17261-90-C	GEAR, 6TH WHEEL	1	C
	14	2C0-17241-80-A	GEAR, 4TH WHEEL	1	A
	14	2C0-17241-70-B	GEAR, 4TH WHEEL	1	B
	14	2C0-17241-90-C	GEAR, 4TH WHEEL	1	C
	15	2C0-17231-80-A	GEAR, 3RD WHEEL	1	A
	15	2C0-17231-70-B	GEAR, 3RD WHEEL	1	B
	15	2C0-17231-90-C	GEAR, 3RD WHEEL	1	C
	16	2C0-17251-71-A	GEAR, 5TH WHEEL	1	A
	16	2C0-17251-80-B	GEAR, 5TH WHEEL	1	B
	16	2C0-17251-90-C	GEAR, 5TH WHEEL	1	C
	17	2C0-17211-80-A	GEAR, 1ST WHEEL	1	A
	17	2C0-17211-90-B	GEAR, 1ST WHEEL	1	B
*	17	2C0-17211-00	GEAR, 1ST WHEEL	1	C



- Gear Ratio

	std	A	B	C
1st	31/12 (2.583)	37/16 (2.313)	42/17 (2.471)	31/12 (2.583)
2nd	32/16 (2.000)	39/21 (1.857)	39/20 (1.950)	32/16 (2.000)
3rd	30/18 (1.667)	36/23 (1.565)	29/18 (1.611)	30/18 (1.667)
4th	26/18 (1.444)	25/18 (1.389)	26/18 (1.444)	28/19 (1.474)
5th	27/21 (1.286)	33/26 (1.269)	30/23 (1.304)	27/20 (1.350)
6th	23/20 (1.150)	25/22 (1.136)	23/20 (1.150)	26/22 (1.182)

NOTICE

- No gear can be used for the kit transmission except for the specified STD gear.
- There is no compatibility with the '06 model transmission set (2C0-A7400-70).

YZF-R6 Mission ratio

GEAR	PLAN	Ratio	Pinion gear			Wheel gear		
			Part number	The number of teeth	Stamp	Part number	The number of teeth	Stamp
1ST	A	2.313	2C0-17411-80-A	16	A	2C0-17211-80-A	37	A
	B	2.471	2C0-17411-90-B	17	B	2C0-17211-90-B	42	B
	C	2.583	2C0-17411-00	12		2C0-17211-00	31	
2ND	A	1.857	2C0-17121-80-A	21	A	2C0-17221-81-A	39	A
	B	1.950	2C0-17121-90-B	20	B	2C0-17221-90-B	39	B
	C	2.000	2C0-17121-00	16		2C0-17221-00	32	
3RD	A	1.565	2C0-17131-80-A	23	A	2C0-17231-80-A	36	A
	B	1.611	2C0-17131-71-B	18	B	2C0-17231-70-B	29	B
	C	1.667	2C0-17131-90-C	18	C	2C0-17231-90-C	30	C
4TH	A	1.389	2C0-17131-80-A	18	A	2C0-17241-80-A	25	A
	B	1.444	2C0-17131-71-B	18	B	2C0-17241-70-B	26	B
	C	1.474	2C0-17131-90-C	19	C	2C0-17241-90-C	28	C
5TH	A	1.269	2C0-17151-71-A	26	A	2C0-17251-71-A	33	A
	B	1.304	2C0-17151-80-B	23	B	2C0-17251-80-B	30	B
	C	1.350	2C0-17151-90-C	20	C	2C0-17251-90-C	27	C
6TH	A	1.136	2C0-17161-70-A	22	A	2C0-17261-71-A	25	A
	B	1.150	2C0-17161-00	20		2C0-17261-80-B	23	B
	C	1.182	2C0-17161-90-C	22	C	2C0-17261-90-C	26	C

Make sure that the pinion and wheel gear are combined for use according to the chart plan.

YZF-R6 Speed List

Engine speed (rpm)

Tire radius (mm) 315 perimeter (m)

Primary reduction ratio	41	85	2.073
Secondary reduction ratio	41	85	2.073
Overall reduction ratio	41	85	2.073

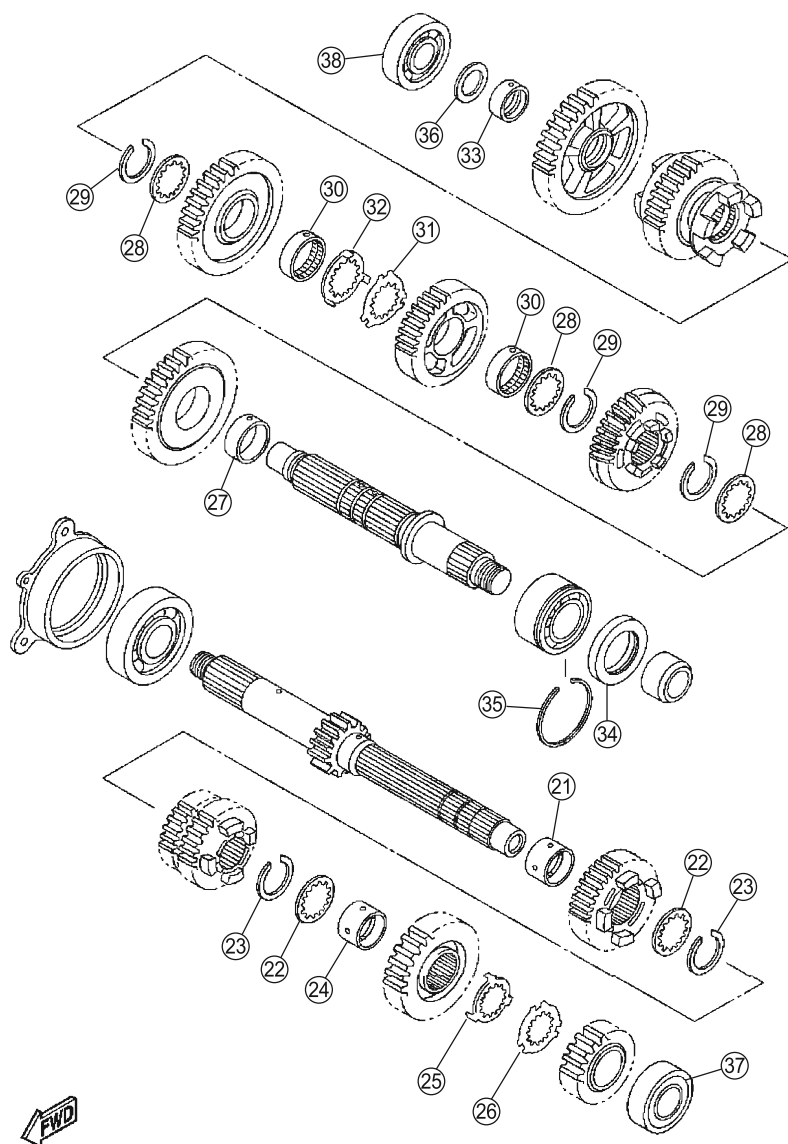
GEAR	PLAN	The number of teeth		Ratio	16																Engine side	Secondary reduction ratio (Sprocket)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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- Values in the speed table may vary slightly according to tire manufacturer and size.

- Select after referring to the value in the speed table.

16. Mission Maintenance Set (2C0-A7000-70)**Parts List**

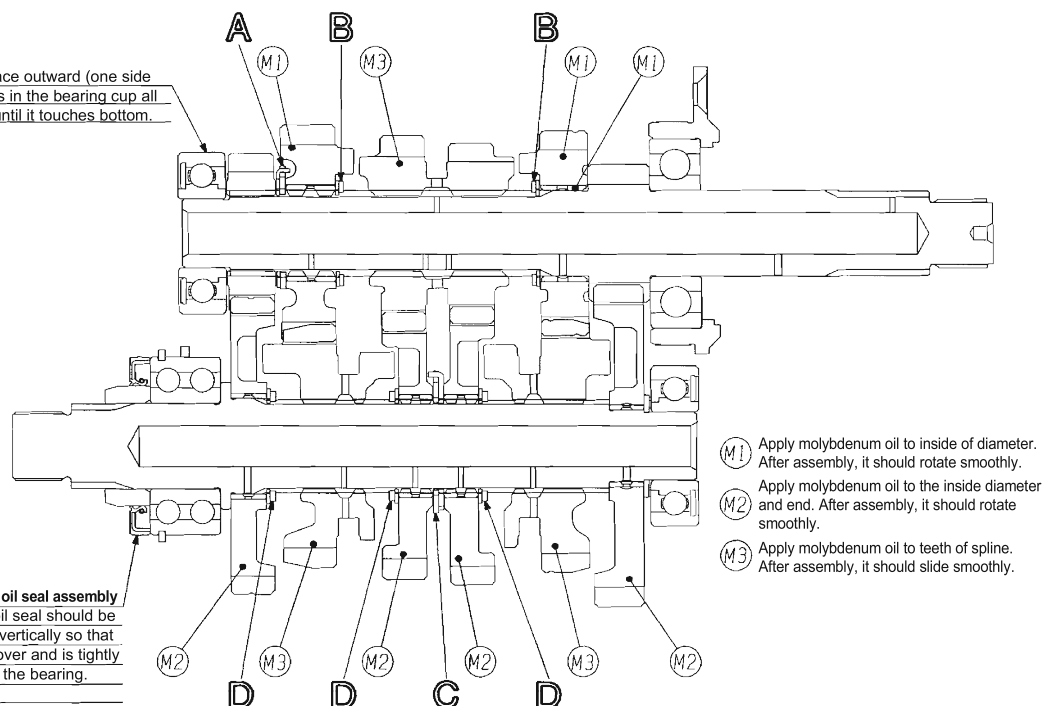
	No.	PART No.	PART NAME	Q'TY	REMARKS
*	21	90387-250R3	COLLAR	3	
*	22	90209-21332	WASHER	6	
*	23	93440-25186	CIRCLIP	10	
*	24	90387-21003	COLLAR	3	
*	25	90209-22352	WASHER	3	
*	26	90209-21351	WASHER	3	
*	27	90387-28011	COLLAR	3	
*	28	90209-25011	WASHER	9	
*	29	93440-28184	CIRCLIP	15	
*	30	90387-25015	COLLAR	6	
*	31	90214-25004	WASHER, CLAW	3	
*	32	90214-25003	WASHER, CLAW	3	
*	33	90387-21004	COLLAR	3	
*	34	93102-35017	SEAL, OIL	3	
*	35	93440-52014	CIRCLIP	5	
*	36	90201-20278	WASHER, PLAIN	3	
*	37	93306-20464	BRG.	3	
*	38	93306-20464	BRG.	3	



Transmission Assembly

The seal side should face outward (one side seal bearing) and press in the bearing cup all the way into the case until it touches bottom.

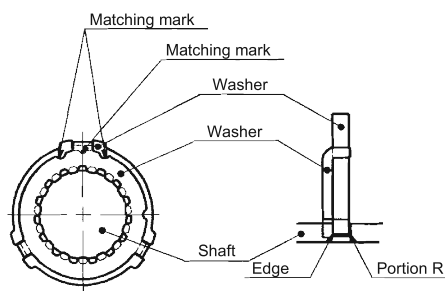
Points to be careful of the oil seal assembly
The convex part on the oil seal should be put into the case groove vertically so that the oil seal does not fall over and is tightly fit into the bearing cup of the bearing.
(Apply grease to the lip.)



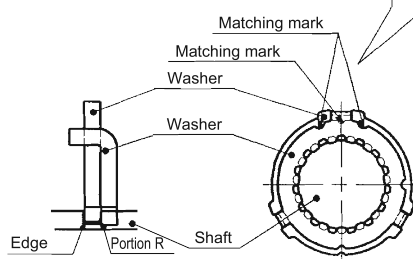
- (M1) Apply molybdenum oil to inside of diameter. After assembly, it should rotate smoothly.
- (M2) Apply molybdenum oil to the inside diameter and end. After assembly, it should rotate smoothly.
- (M3) Apply molybdenum oil to teeth of spline. After assembly, it should slide smoothly.

TIP

- Always use a new circlip.
- Do not mistake the washer and circlip directions.
(See drawing below.)

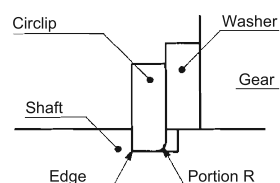


A Detail of installation of washer

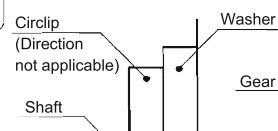


C Detail of installation of washer

Rotate washer so that its teeth meet axle-spline teeth on the axle, and then lock with washer's claw.
Assemble washer with putting together their matching mark.



B Detail of installation of circlip



D Detail of installation of circlip

Position the abutment joint of the circlip right between the splines.

Position the abutment joint of the circlip right between the splines.

17. Drive Sprocket

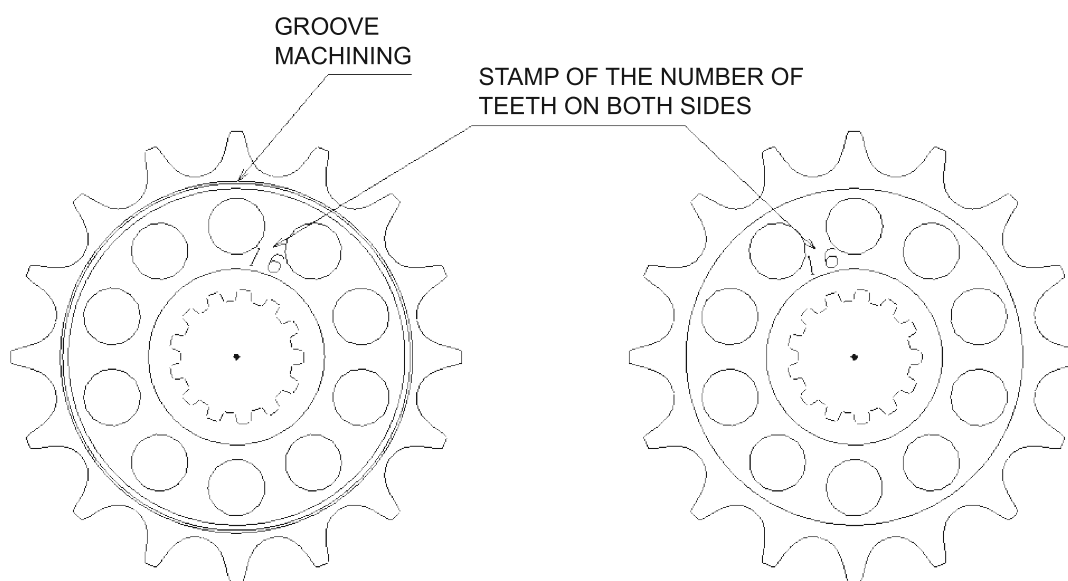
Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2C0-17460-74	SPROCKET, DRIVE	1	14T
	2	2C0-17460-75	SPROCKET, DRIVE	1	15T
	3	2C0-17460-76	SPROCKET, DRIVE	1	16T

These parts are for 520 chains (STD=525 chain).

Use the nuts for the kit to mount the drive sprocket.

These sprockets are manufactured to be compatible with new and old models.



2C0 ('06 and after YZF-R6)

Install with the grooved surface facing outside of the chassis.

5SL ('05 and previous YZF-R6)

Install with the grooved surface facing inside of the chassis.

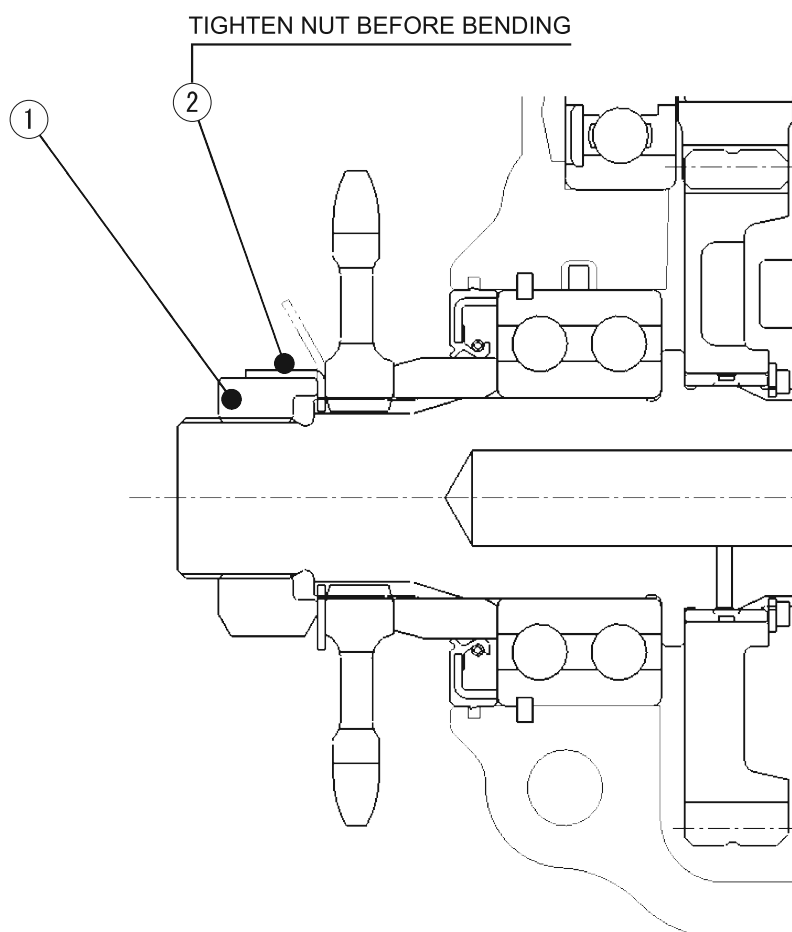
NOTICE

Take care not to install the sprocket in the wrong direction. If it is installed in the wrong direction, it will cause the misalignment of the drive and rear sprockets, leading to the loss of power.

18. Sprocket Nut Set (2C0-A7463-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	90179-20005	NUT, SPROCKET	1	
*	2	90215-21256	WASHER, TONGUED	1	



19. ACM Set (2C0-F1400-71)

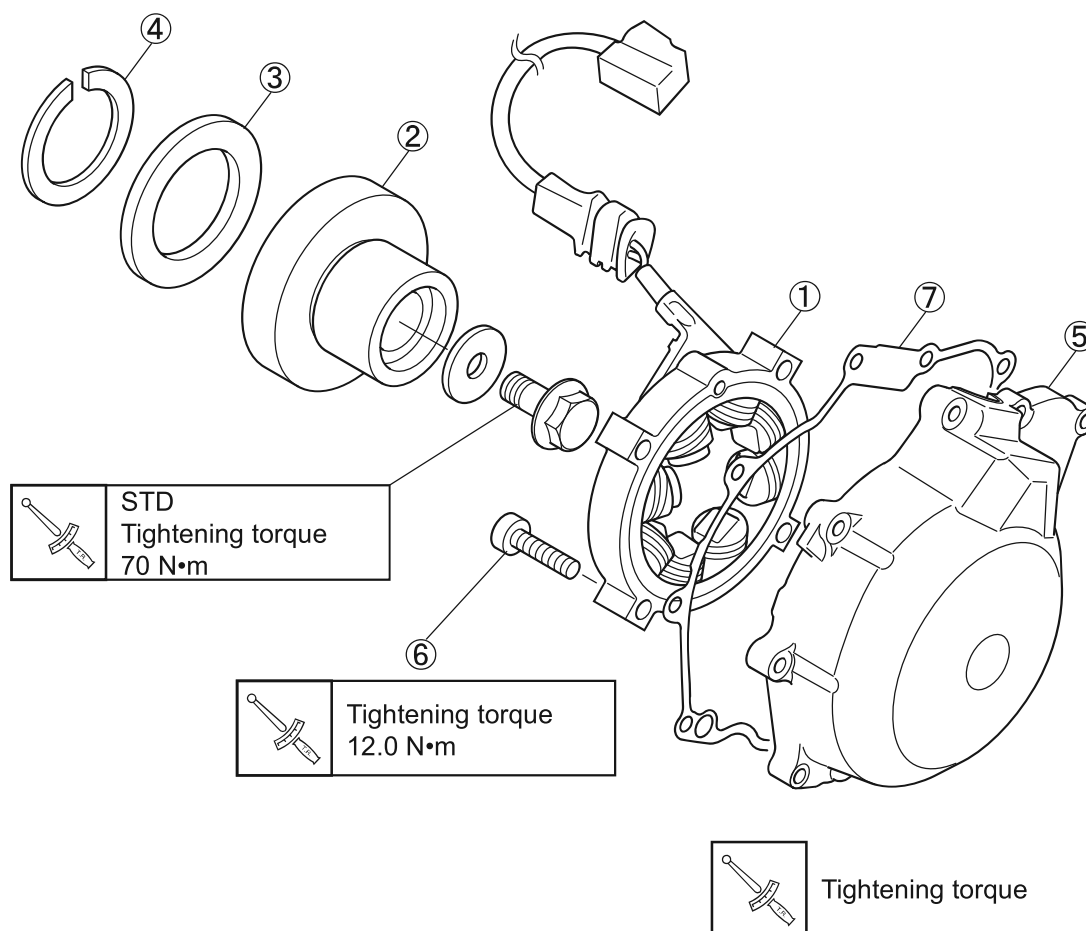
Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2C0-81410-70	STATOR ASSY.	1	
	2	2C0-81450-70	ROTOR ASSY.	1	
*	3	2C0-15580-00	STARTER CLUTCH OUT. ASSY.	1	
*	4	2C0-15536-00	CLIP, STARTER	1	
	5	2C0-15411-71	COVER, CRANKCASE 1	1	
*	6	90149-06080	SCREW	3	With screw lock
	7	2C0-15451-70	GSKT., CRANKCASE COVER 1	1	ANTI STICK TYPE

TIP

Regarding Assembly

1. Remove grease from the taper surfaces of both rotor and crank before assembling them.
2. Apply engine oil on the thread and flange of mounting bolts before using them.



20. Wire Harness Set (13S-F2590-71)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	13S-82590-71	WIRE HARNESS ASSY	1	
*	2	5GF-83976-00	SW. HANDLE 1	1	PIT ROAD LIMITER
	3	14B-83976-70	SW. HANDLE 1	1	MAP SELECT
	4	2C0-2128A-70	BRKT.,REGULATOR 1	1	
	5	2C0-82509-70	WIRE SUB-LEAD	1	
	6	4C8-82188-70	RESISTOR ASSY.	1	Linked to wire harness
*	7	90480-13003	GROMMET	2	
*	8	90560-06201	SPACER	2	
*	9	90111-06051	BOLT, HEX. SOCKET BUTTON	4	
*	10	92907-06200	WASHER, PLAIN	1	

NOTICE

- Do not remove the AC generator but leave it to function. Use on the battery alone will make the machine unable to run in a short time.
- The wire harness will not function if it is not assembled with the ECU (2C0-8591A-80, 90, 91, 92) of the kit.
- The combination of this wire harness and ECU cannot be used with '07 models.

- Map select switches Map 1 and Map 2 of the YMS "Comp. FUEL."

NOTICE

When switching to Map 1 or Map 2 using "Map Select" while riding, check that proper riding is possible even when using either map.

- You can use Map Select and Pit Road Limiter with the switches (2 types) included with this set. (See diagram 1.)

(Diagram 1)



- Use the 3-prong coupler in front with the red wire attached as the main switch. (See diagram 2.)
Fitting it turns the power on and removing it turns the power off.

NOTICE

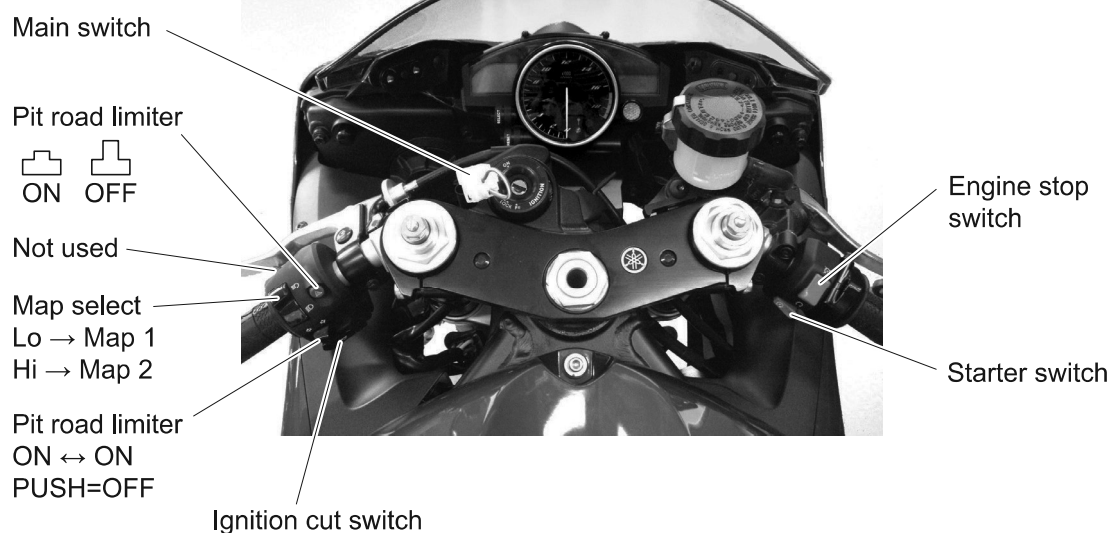
Be careful not to pull the wire too strongly.

(Diagram 2)



- The switch installed to the STD machine may be used as is. (See diagram 3.)

(Diagram 3)



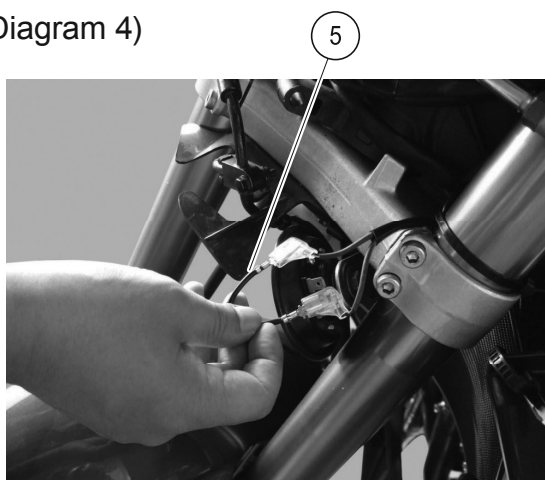
- The ignition cut switch function can be used by combining the harness and kit ECU.
 1. To use the STD switch (left side) to function as the ignition cut switch, connect the wire sub-lead that was packaged with this set to the terminal that is normally connected to the left side horn. (See diagram 4.) If you remove the resistor assy. at the tail side, the ignition cut switch may malfunction in wet weather. (See diagram 5.)

NOTICE

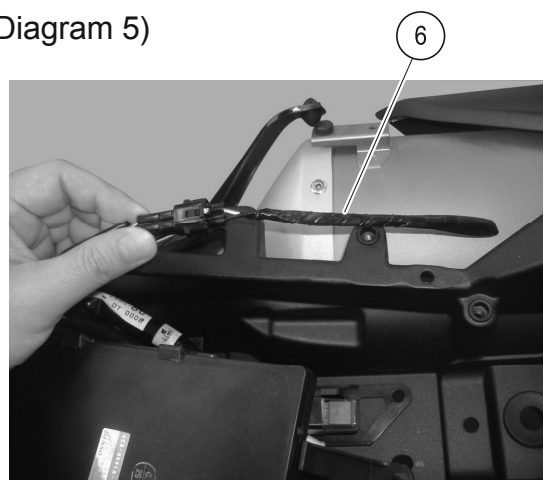
Do not bend the resistor assembly. It will cease to function if it is bent.

2. Install the switch to the 2-pin black coupler underneath the fuel tank. Turning the switch ON cuts the ignition.

(Diagram 4)



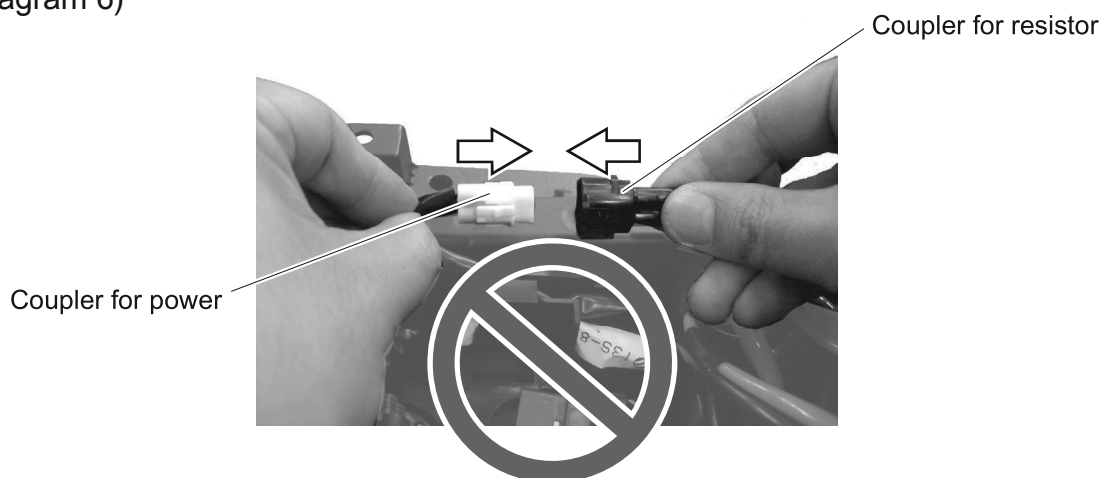
(Diagram 5)



NOTICE

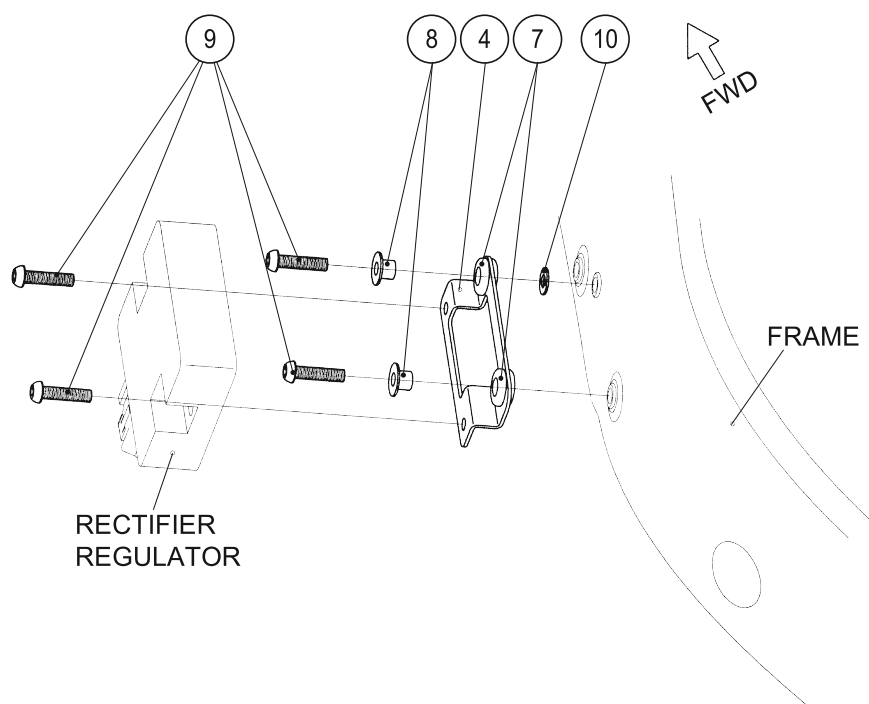
Do not connect the coupler for resistor (black, 2-prong) and the coupler for power (white, 2-prong). Connecting them may cause a malfunction. (See diagram 6.)

(Diagram 6)



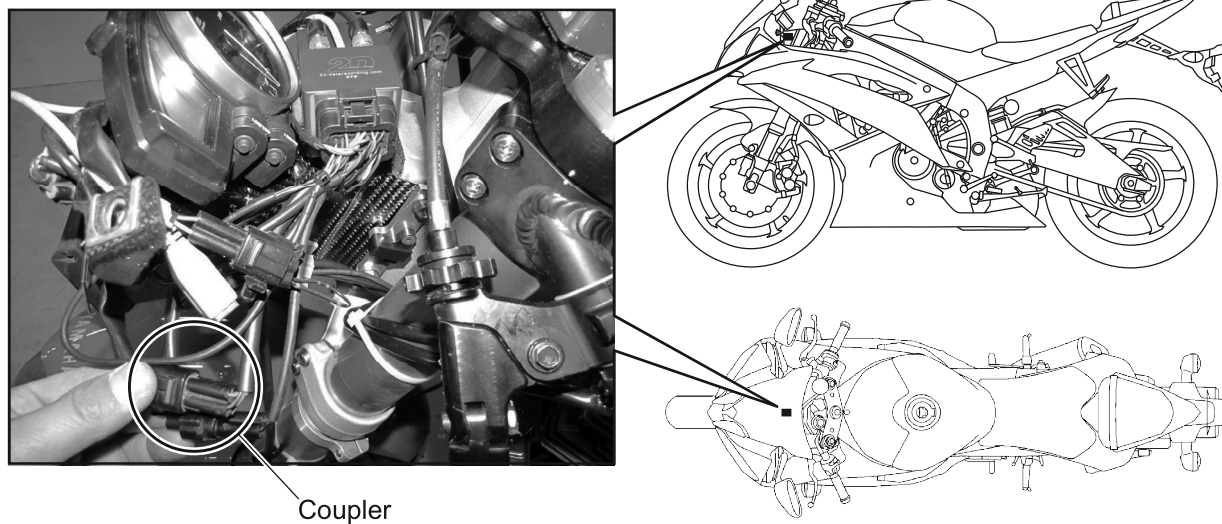
- The bracket regulator provided with this set is for use when fitting a regulator in the position illustrated in Diagram 7, such as when not using a standard radiator.

(Diagram 7)



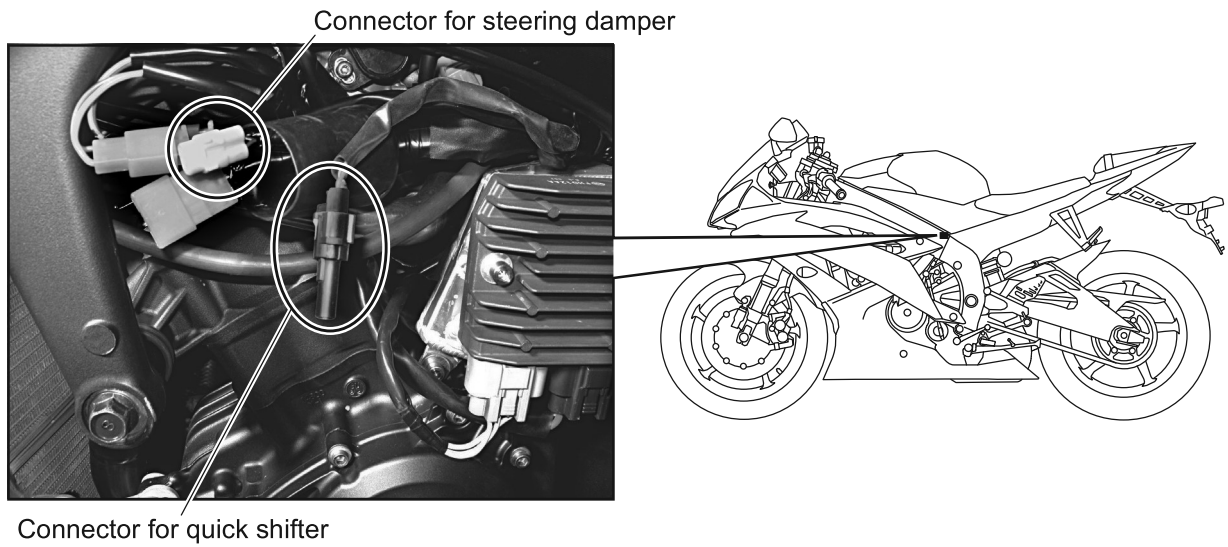
- This harness has a coupler that connects to the 2D made data logger. (See diagram 8.)
For details of the specifications of the data logger, please access the website.
Web <http://www.2d-kit-system.com/>

(Diagram 8)



- This harness comes with a coupler (black 2-pole, plug) for use with a quick shifter.
(Connection diagram ⑦④ E/G STP SW) (Diagram 9)
You can use any quick shifter product.

(Diagram 9)



21. ECU Set (2C0-8591A-94)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2C0-8591A-94	ECU	1	
	2	13S-2818Y-85	CD	1	YMS, MANUAL

- Use of this set and a wire harness included in the kit enables regulation (or setting) of fuel injection and ignition timing, etc.
- For details as to how to regulate (or set) fuel injection and ignition timings, etc., refer to the manual in the CD-ROM that comes with the set.
- There are two types of basic control data for the ECU included in this set: SS (Super Sports) and ST (Stock Sports). They can be switched over and vice versa. To make it in the ST specification, just remove two couplers located at the lower left of the kit harness fuel tank. (See the figure below.)

<Setting-up Details>

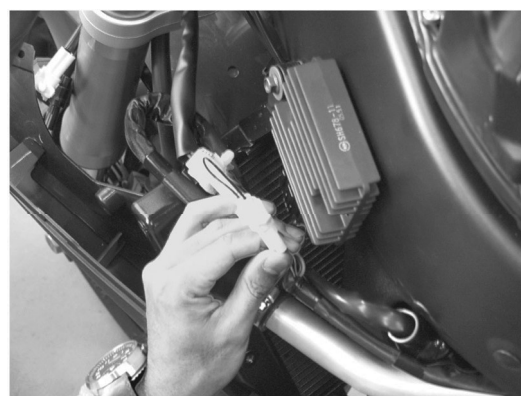
SS specification: Kit cam shaft and *Recommended muffler

ST specification: *Recommended muffler

* Recommended muffler

Made by Akrapovic (For details of the specification, please access the website.)

Web <http://www.akrapovic-exhaust.com/>



MODEL	ECU	WIRE HARNESS ASSY.	THROTTLE BODY ASSY.
2006	2C0-8591A-70	2C0-82590-70	2C0-13750-00
2007	2C0-8591A-71	2C0-82590-80	
2008	2C0-8591A-80 2C0-8591A-90 2C0-8591A-91 2C0-8591A-92 2C0-8591A-93 2C0-8591A-94	13S-82590-70 13S-82590-71	13S-13750-00
2009			
2010			
2011			
2012			
2013			
2014			
2015			
2016			

* 2008 to 2016 models allow any combination of ECU and wire harness. Other models only allow the combinations shown in the table.

22. Cable Interface (13S-8533A-71)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	13S-8533A-71	CABLE, INTERFACE	1	USB
	2	13S-N81CD-81	CD	1	USB driver

- This cable connects the kit wire harness to the personal computer on which YEC FI Matching System (YMS) is installed.
- Please see the YMS manual for instructions on how to use YMS.
- When connecting the cable to the PC for the first time, it is necessary to install the USB driver. Refer to the USB Driver Installation Manual provided on the CD for details on how to install the USB driver.
- The product vendor ID and product ID are provided by the Hamamatsu TOA Electronics, Inc.

Vendor ID: 6837

Product ID: 9001

Diagnosis Functions

- Use of the ECU in the kit and the harness allows functioning of the following codes in the STD diagnosis.

* YMS-Monitor: YEC FI Matching System also allows functioning of the code shown below.

CODE	Contents	*YMS-Monitor
01	Throttle sensor	TPS 1 (deg)
02	Atmospheric pressure sensor	Atmospheric (kPa)
03	Intake pressure sensor 1	Intake Air (kPa)
05	Intake temperature sensor	Air Temp. (°C)
06	Water temperature sensor	Water Temp. (°C)
07	Vehicle speed sensor	Speed Signal (--)
08	Overturn sensor	Lean Angle Signal (V)
09	Monitor voltage	System Voltage (V)
13	Throttle sensor 2	TPS 2 (deg)
14	Accelerator sensor 1	APS 1 (deg)
15	Accelerator sensor 2	APS 2 (deg)
21	Neutral switch	Neutral SW
30	Ignition coil #1	—
31	Ignition coil #2	—
32	Ignition coil #3	—
33	Ignition coil #4	—
36	Injector (primary) #1	—
37	Injector (primary) #2	—
38	Injector (primary) #3	—
39	Injector (primary) #4	—
40	Injector (secondary) #1	—
41	Injector (secondary) #2	—
42	Injector (secondary) #3	—
43	Injector (secondary) #4	—
46	Intake funnel	—
50	Main relay	—
70	Program version	—

Self-Diagnosis Functions

- The ECU and harness in the kit provide the functions for the following codes of standard self-diagnosis:

CODE	Description
00	All functions normally.
11	Cam angle sensor malfunctions.
12	Crank angle sensor malfunctions.
13	Intake pressure sensor malfunctions (open circuit / short circuit).
14	Intake pressure sensor malfunctions (piping system).
15	Throttle opening sensor malfunctions (open circuit / short circuit / ETV).
20	Intake pressure sensor or atmospheric pressure sensor malfunctions.
21	Water temperature sensor malfunctions (open circuit / short circuit).
22	Intake temperature sensor malfunctions (open circuit / short circuit).
23	Atmospheric pressure sensor malfunctions (open circuit / short circuit).
33	Ignition coil #1 malfunctions (open circuit).
34	Ignition coil #2 malfunctions (open circuit).
35	Ignition coil #3 malfunctions (open circuit).
36	Ignition coil #4 malfunctions (open circuit).
39	Injector (primary) malfunctions (open circuit).
40	Injector (secondary) malfunctions (open circuit).
43	Battery voltage monitor malfunctions (power source for fuel system).
46	Power source for vehicle malfunctions.
59	Accelerator opening sensor malfunctions (open circuit / short circuit).
60	Throttle motor malfunctions (drive system).

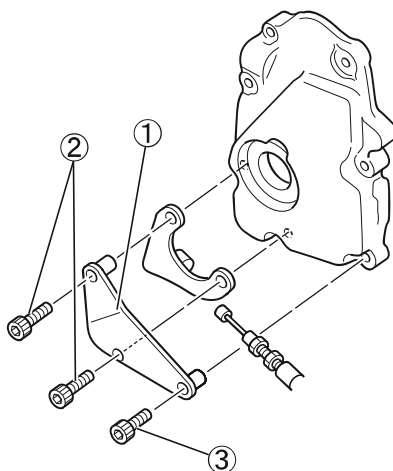
2-2 Vehicle Accessories

23. Engine Protector Set (2C0-A5491-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2C0-15491-70	PROTECTOR	1	
*	2	91314-06025	BOLT, HEX. SOCKET HEAD	2	
*	3	91314-06020	BOLT, HEX. SOCKET HEAD	1	

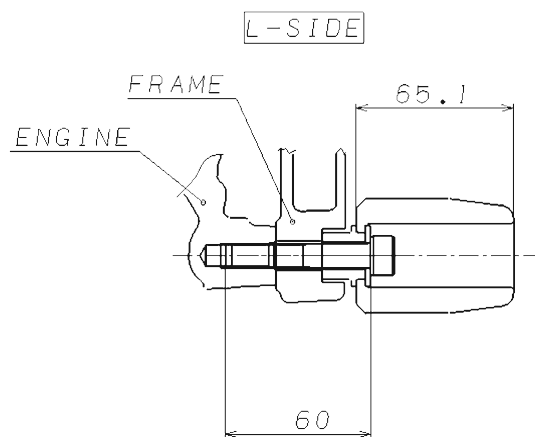
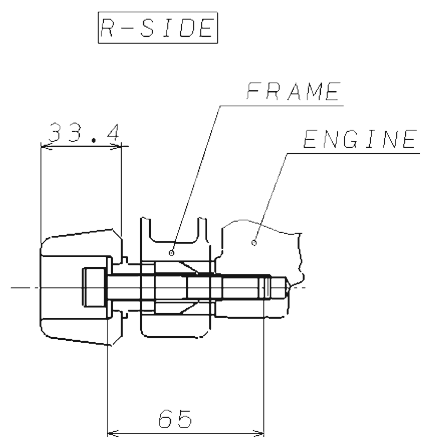
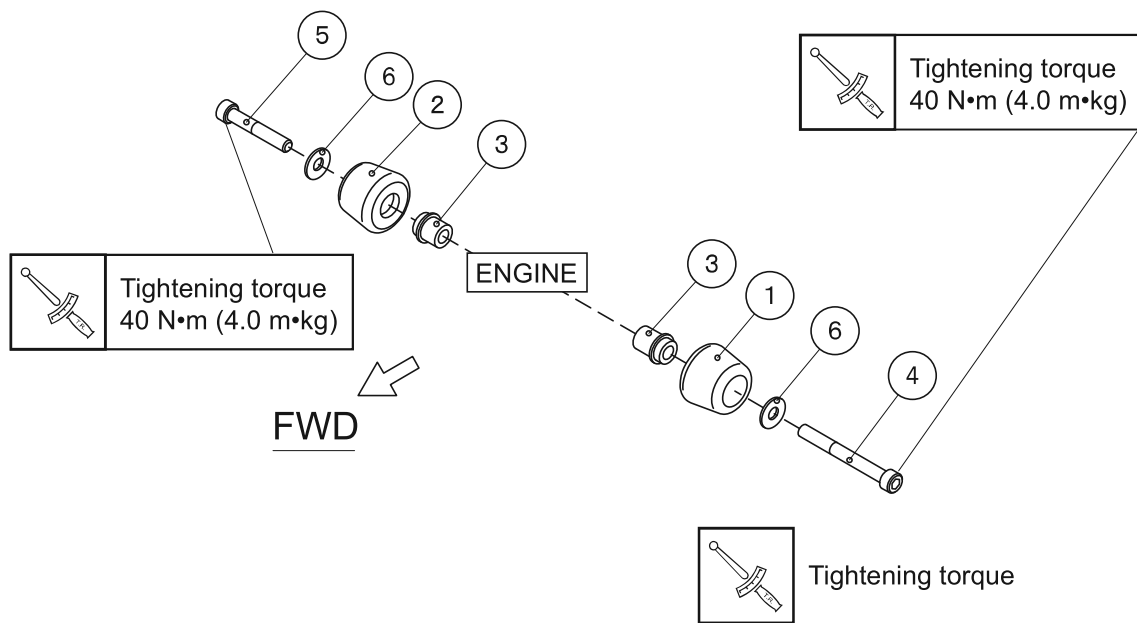
These parts protect the chassis as well as alleviating damage caused by overturning.



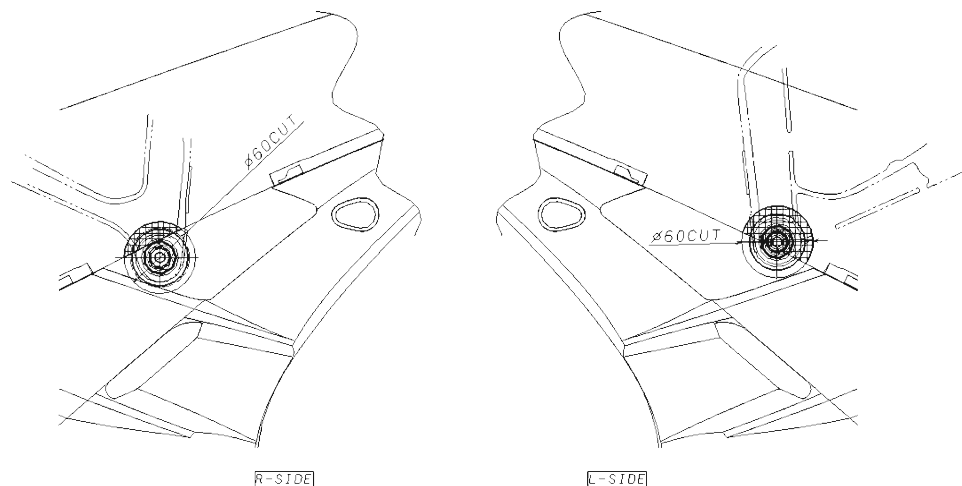
24. Chassis Protector Set (2C0-C117G-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2C0-2117G-70	PROTECTOR (LH LONG)	1	
	2	2C0-2117G-90	PROTECTOR (RH SHORT)	1	
	3	2C0-21472-70	COLLAR, PROTECTOR	2	
*	4	91317-10060	BOLT, HEX. SOCKET HEAD	1	
	5	91314-10065	BOLT, HEX. SOCKET HEAD	1	
*	6	90201-10136	WASHER, PLAIN	2	



Before mounting the protector, cut the cowling so that the protector can fit against the chassis.
As a rough guide, cut by $\phi 60$ centered on the engine mount. See the figures below.

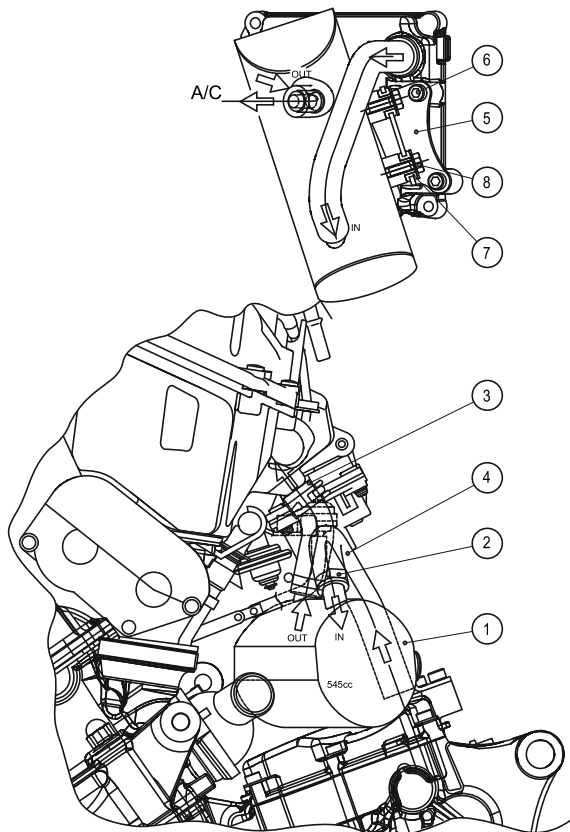


25. Oil Catch Tank Set (2C0-C1707-81)

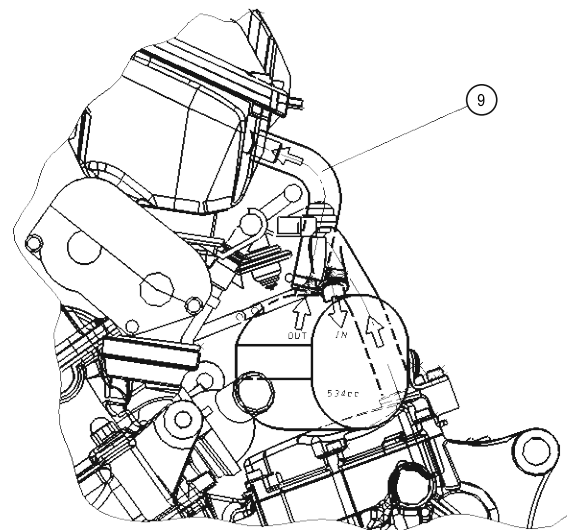
Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2C0-21707-70	OIL TANK COMP.	1	
*	2	90450-25037	HOSE CLAMP ASSY.	4	
	3	13S-15373-70	PIPE, BREATHER	1	
	4	2C0-15393-70	PIPE, BREATHER 2	1	
*	5	2C0-2419F-00	BRKT.	1	
*	6	91317-06020	BOLT, HEX.SOCKET HEAD	2	
*	7	90480-13018	GROMMET	2	
*	8	90119-06044	BOLT, HEX. W/WASHER	2	
	9	2C0-15373-70	PIPE, BREATHER	1	For 2006 and 2007 models

This oil tank has the effective capacity of 540 cc.



For 2008 and 2009 models



For 2006 and 2007 models

26. Rear Shock Spring

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2CX-22222-7B	SPRG., Rr. SHOCK	1	93 N/mm Identifying stamp: 162.8-55-93
	2	2CX-22222-7A	SPRG., Rr. SHOCK	1	98 N/mm Identifying stamp: 162.8-55-98
	3	2CX-22222-70	SPRG., Rr. SHOCK	1	103 N/mm Identifying stamp: 162.8-55-103
	4	2CX-22222-75	SPRG., Rr. SHOCK	1	108 N/mm Identifying stamp: 162.8-55-108
	5	2CX-22222-80	SPRG., Rr. SHOCK	1	113 N/mm Identifying stamp: 162.8-55-113
	6	2CX-22222-85	SPRG., Rr. SHOCK	1	118 N/mm Identifying stamp: 162.8-55-118

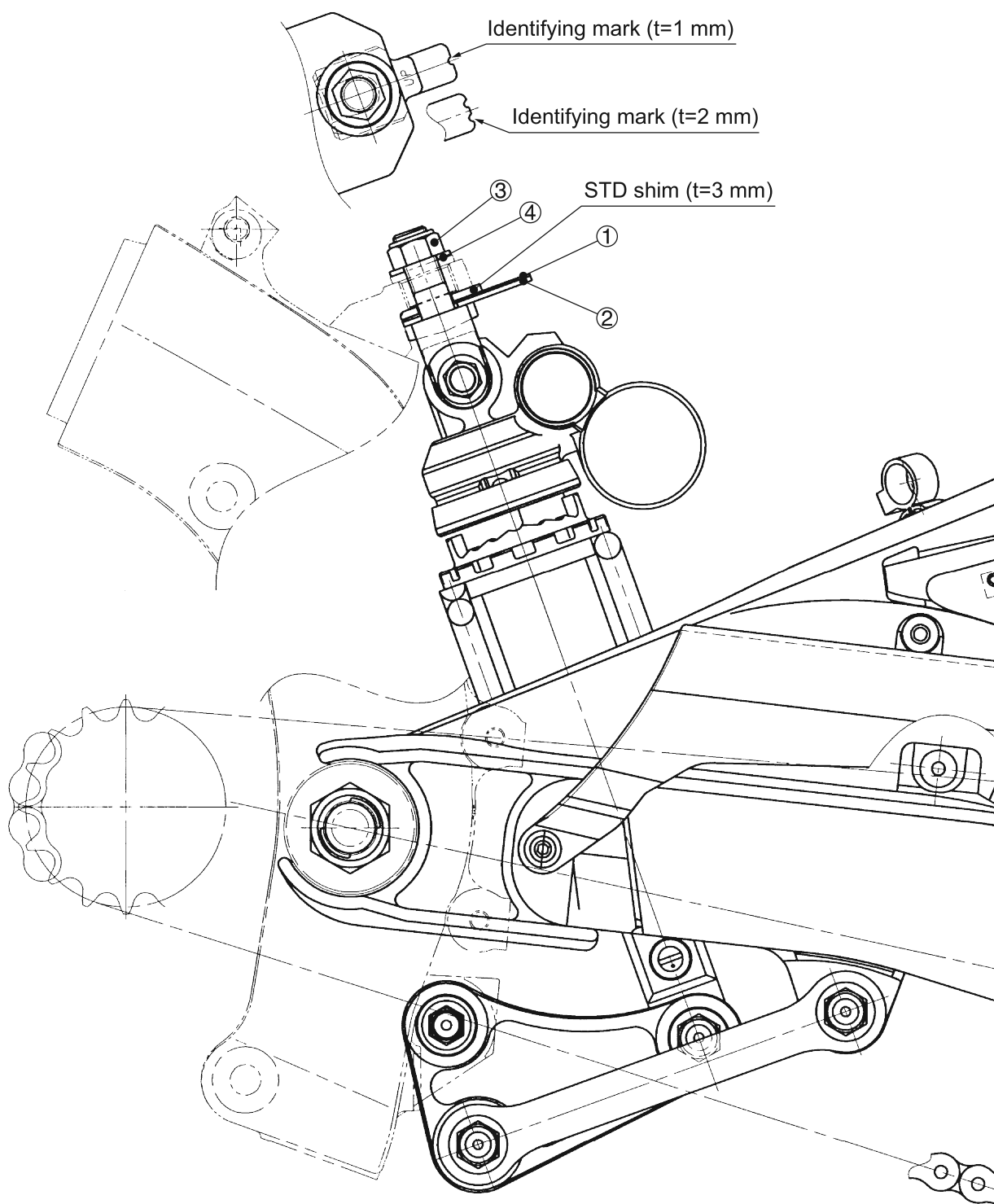
- These springs can be used with the standard absorbers.
- There is a stamp on the side of the springs for rate identification.
- The stamp number indicates the length, diameter and rate.
- For spring replacement, see the 2CX STD. Service Manual.
- The spring rate of the standard rear suspension is 103 N/mm.

27. Machine Height Adjustment Shim Set (13S-C2127-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	13S-22127-70	SHIM	1	t=1.0mm
	2	13S-22127-80	SHIM	1	t=2.0mm
*	3	90185-14010	NUT, SELF-LOCKING	1	
*	4	90201-14020	WASHER, PLAIN	1	

Use a 1 mm or 2 mm shim according to the settings. You can also use two shims together. In addition, you can use a kit shim with a STD shim (t = 3 mm) either attached or detached.



28. Front Fork Spring

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2CX-23151-70	SPRG., Fr. FORK	1	9.0 N/mm Identifying slits 1
	2	2CX-23151-75	SPRG., Fr. FORK	1	9.5 N/mm Identifying slits 2
	3	2CX-23151-80	SPRG., Fr. FORK	1	10.0 N/mm Identifying slits 3
	4	2CX-23151-85	SPRG., Fr. FORK	1	10.5 N/mm Identifying slits 4

- There are slits at the ends of the spring for rate identification.
- The number of slits indicates the rate as shown above.
- These springs are not compatible with the standard fork of 13S ('08 to '15 models) or 2C0 ('06 and '07 models).

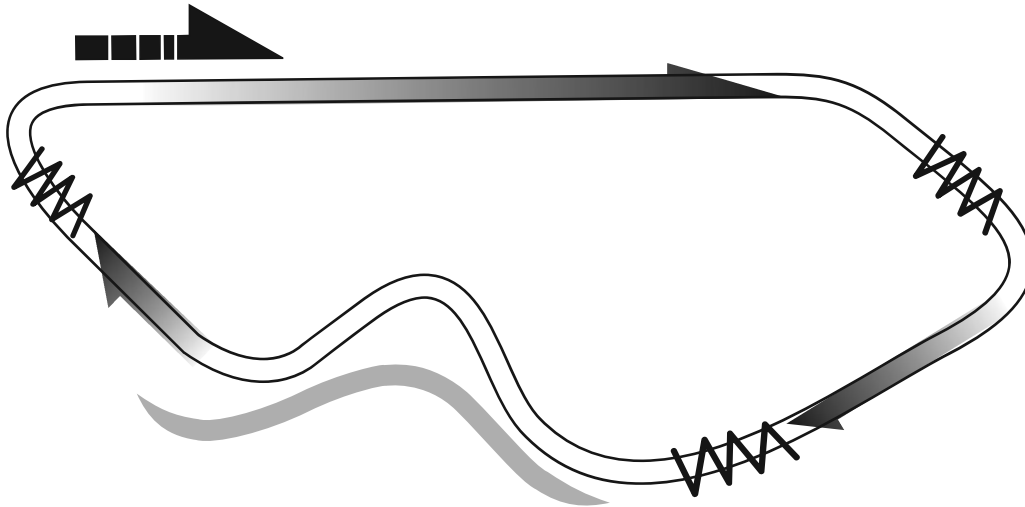


TIP

Use Yamaha M1 suspension oil.

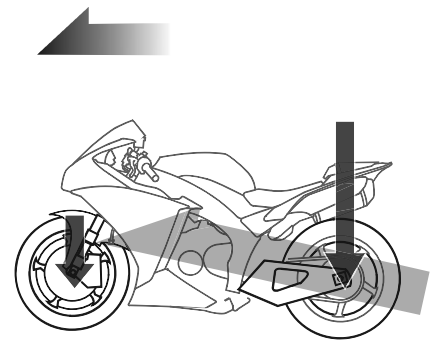
References

Front and rear load changes and front and rear suspension movement in different scenarios.



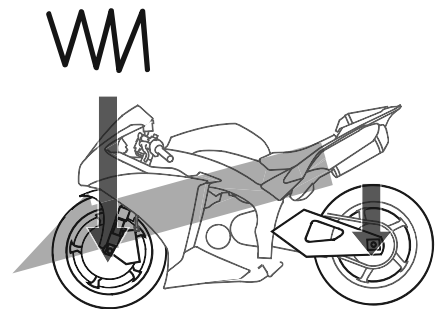
Accelerating

- Load change
The wider the throttle is opened, the more the load is concentrated on the rear.
- Front fork
Reaches nearly maximum extended stroke.
- Rear cushion
Up to 20 to 30 mm stroke displacement, depending on conditions.



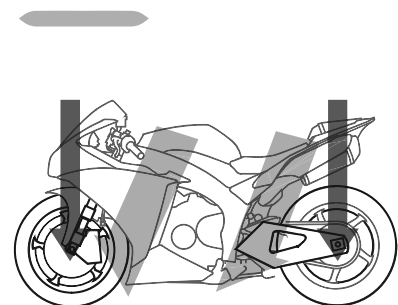
Braking

- Load change
The harder the brake is applied, the more the load is concentrated on the front.
- Front fork
Displaces until stroke has almost bottomed.
- Rear cushion
Reaches nearly maximum extended stroke.



Cornering

- Load change
Increases the load on the front fork and rear cushion on both sides.
- Front fork
Up to 30 to 90 mm stroke displacement depending on the size of the corner.
- Rear cushion
Up to 25 to 40 mm stroke displacement, depending on conditions.

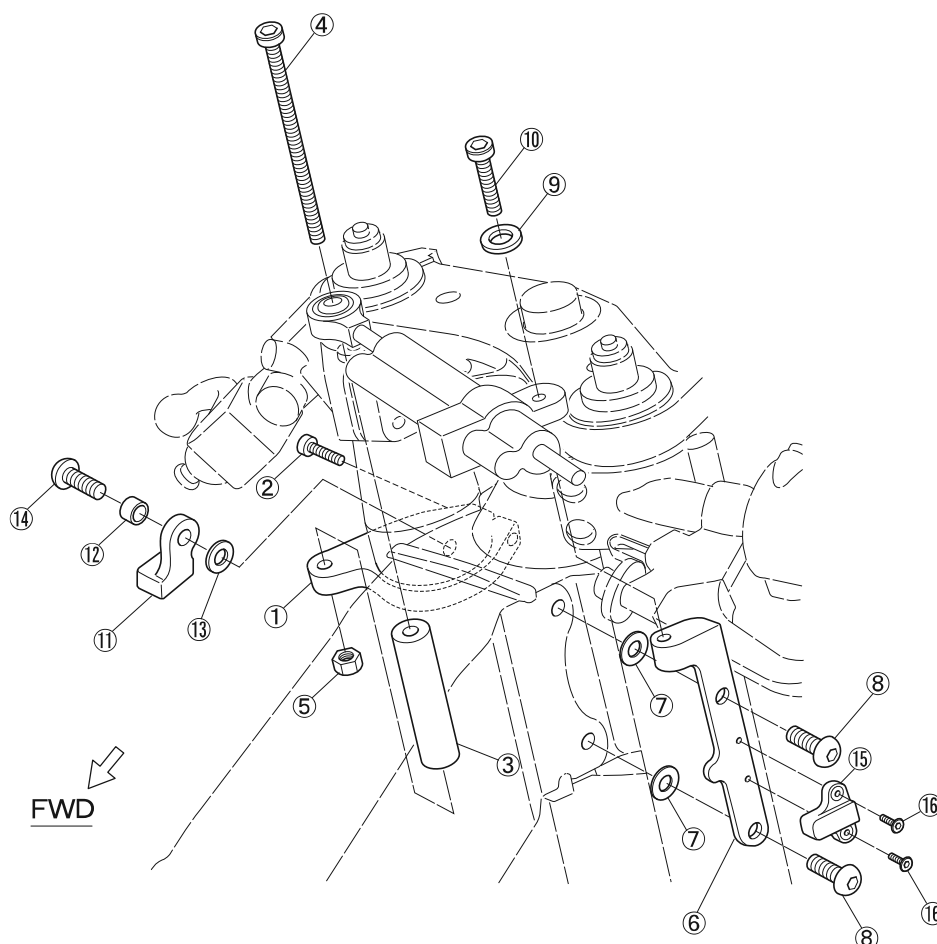


29. Steering Damper Stay Set (2C0-C3495-80)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2C0-23495-80	STAY, DAMPER	1	
*	2	91317-06025	BOLT, HEX. SOCKET HEAD	1	
	3	2C0-23488-80	SPACER	1	
*	4	90111-08074	BOLT, HEX. SOCKET BUTTON	1	
	5	95607-08100	NUT, U	1	
	6	2C0-2349T-80	BRKT., DAMPER	1	
*	7	90201-07081	WASHER, PLAIN	2	
*	8	90149-06302	SCREW	2	
	9	5VY-26398-00	WASHER, SPECIAL	1	
*	10	91317-08025	BOLT, HEX. SOCKET HEAD	1	
	11	2C0-23439-71	STOPPER, STRG. 2	1	
	12	90387-06105	COLLAR	1	
*	13	90201-07081	WASHER, PLAIN	1	
*	14	90149-06302	SCREW	1	
	15	2C0-23429-70	STOPPER	1	
*	16	90151-04002	SCREW, CROSSRECESSED COUNTERSUNK	2	

For the steering damper, use [OHLINS SD121 STROKE 68 mm].



30. Seat Cushion (13S-24713-70)

Parts List

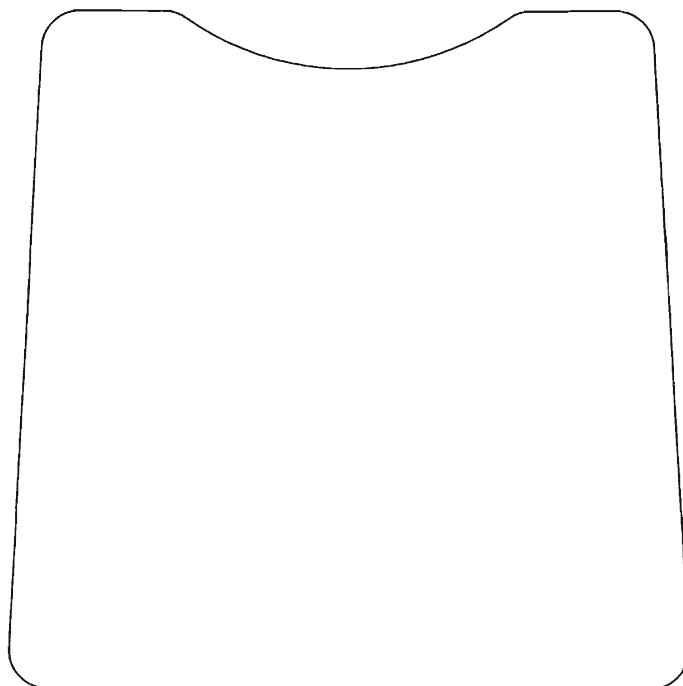
	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	13S-24713-70	CUSHION SEAT	1	

Anti slip seat.

Cut to any size for use.



FWD



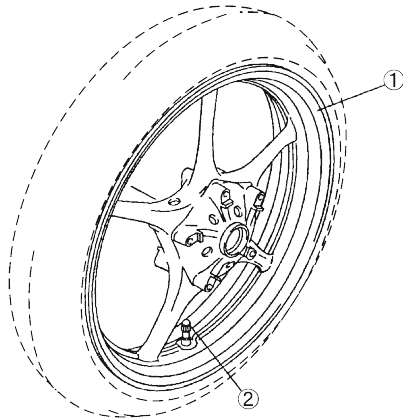
31. Front Spare Wheel Assembly (2C0-25100-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2C0-25160-00	CAST WHEEL ASSY.	1	
*	2	93900-00030	VALVE, RIM	1	

*This kit does not include a tire.

This part is an assembly of bearings, spacers and an air valve in a STD wheel.



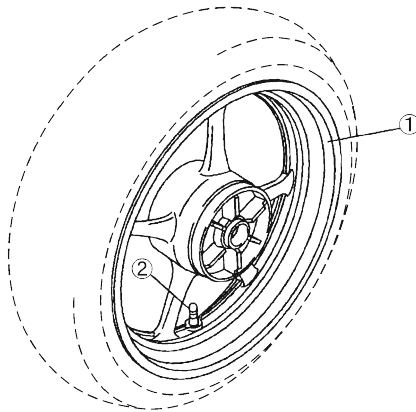
32. Rear Spare Wheel Assembly (2C0-25300-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
	1	2C0-25370-00	CAST WHEEL ASSY.	1	
*	2	93900-00030	VALVE, RIM	1	

*This kit does not include a tire.

This part is an assembly of bearings, spacers and an air valve in a STD wheel.

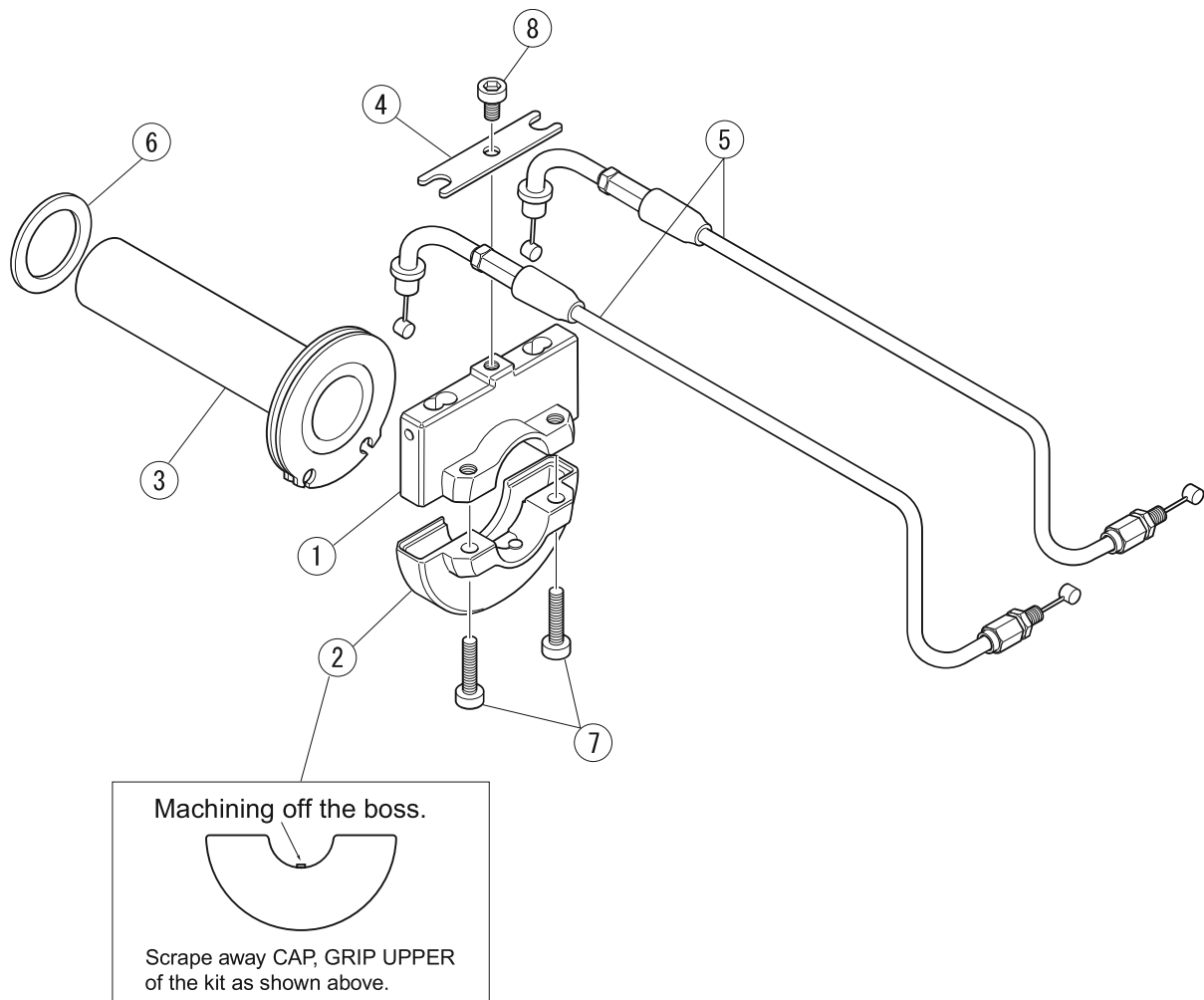


33. Throttle Set (13S-C6300-70)

Parts List

	No.	PART No.	PART NAME	Q'TY	REMARKS
°	1	2C0-26281-70	CAP, GRIP UPPER	1	
*	2	5FL-26282-00	CAP, GRIP UNDER	1	
°	3	5SL-26243-71	TUBE, GUIDE	1	
°	4	2C0-26391-70	CLIP, WIRE 1	1	
°	5	13S-26302-70	THROTTLE WIRE ASSY.	2	Common use for pulling back.
*	6	90201-261L1	WASHER, PLAIN	1	
*	7	91314-05020	BOLT, HEX. SOCKET HEAD	2	
*	8	91314-05008	BOLT, HEX. SOCKET HEAD	1	

In this throttle set the working angle of the throttle grip turning is made smaller for quicker response to the throttle opening.



3 Tightening Torque List

Engine

To be tightened	Part No.	Part Name	Screw dia. x pitch	Tightening torque N•m (kgf•m)	Q'ty	Remarks
CAP, CAMSHAFT x HEAD	90105-06027	BOLT, FLANGE	M6 x 1.0	10.0±2 (1.0±0.2)	20	CAM SHAFT SHALL TURN LIGHTLY.
Embedded in HEAD	95612-08625	BOLT, STUD	M8 x 1.25	15.0±3 (1.5±0.3)	8	
Tighten HEAD.	90179-10006	NUT	M10 x 1.25	Tighten in sequence to 25±2 (2.5±0.2) and then tighten in sequence to 42±2 (4.2±0.2).	10	APPLY OIL BOTH TO THREAD AND BEARING SUR- FACE. SEE page 60 FOR DETAILS.
Tighten HEAD.	90176-10075	NUT, CAP	M10 x 1.25	Tighten in sequence to 30±2 (3.0±0.2) and then tighten in sequence to 60±2 (6.0±0.2).	2	APPLY OIL BOTH TO THREAD AND BEARING SUR- FACE. SEE page 60 FOR DETAILS.
Tighten HEAD on side of CAM CHAIN compartment.	90110-06094	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	12.0±2 (1.2±0.2)	2	WITH WASHER
SPARK PLUG	5FL-1119C-70 13S-1119C-70	PLUG, SPARK	M10S x 1.0	12 – 15 (1.2 – 1.5)	4	SEE page 3 FOR DETAILS.
HEAD COVER x HEAD	90109-066F0	BOLT	M6 x 1.0	10.0±2 (1.0±0.2)	6	
Plug for sand drain hole	90340-18002	PLUG, STRAIGHT SCREW	M18 x 1.5	42±4 (4.3±0.4)	3	APPLY LOCK- ING AGENT (LOCKTITE®).
Check bolt for oil passage	95022-08012	BOLT, FLANGE, SMALL HEAD	M8 x 1.25	15.0±2 (1.5±0.2)	1	
Tighten AI CAP.	90110-06175	BOLT HEXAGON SOCKET HEAD	M6 x 1.0	10.0±2 (1.0±0.2)	4	
CAMSHAFT x SPROCKET	90105-07004	BOLT, FLANGE	M7 x 1.0	24.0±2 (2.4±0.2)	4	
JOINT, CARBURETOR 1 x HEAD	91312-06016	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	10.0±2 (1.0±0.2)	8	

Engine

To be tightened	Part No.	Part Name	Screw dia. x pitch	Tightening torque N•m (kgf•m)	Q'ty	Remarks
CON ROD x CAP, CON ROD	2C0-11654-00	BOLT, CON ROD	M7 x 0.75		8	APPLY MOLYB-DENUM DISULFIDE OIL TO THREAD
	2C0-1165A-00	BOLT, CON ROD	M7 x 0.75		8	APPLY MOLYB-DENUM DISULFIDE OIL TO THREAD
	90179-07001	NUT	M7 x 0.75	14.7±1.47 (1.5±0.15) +180°±5°	8	APPLY MOLYB-DENUM DISULFIDE OIL TO BEARING SURFACE
ACM ROTOR x CRANKSHAFT	90105-126A8	BOLT, FLANGE	M12 x 1.25	70±5 (7.0±0.5)	1	DEGREASE TAPERED SUR- FACE. APPLY OIL BOTH TO BOLT BEARING SURFACE AND THREAD AND TO BOTH SIDES OF WASHER. USE MORI- COATED WASHER.
TENSIONER ASSY x CYLINDER	90110-06106	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	12.0±2 (1.2±0.2)	2	INSTALL TEN- SIONER ASSY.
Install COVER, THERMOSTAT.	91312-06020	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	12.0±2 (1.2±0.2)	2	
Install JOINT.	90105-06082	BOLT, FLANGE, SMALL HEAD	M6 x 1.0	10.0±2 (1.0±0.2)	2	
Install WATER PUMP.	90110-06140	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	12.0±2 (1.2±0.2)	2	
OIL PUMP ASSY x CRANKCASE 2	95812-06030	BOLT, FLANGE	M6 x 1.0	12.0±2 (1.2±0.2)	2	
OIL PUMP ASSY x CRANKCASE 2	95812-06080	BOLT, FLANGE	M6 x 1.0	12.0±2 (1.2±0.2)	1	
COVER, STRAINER x CRANKCASE 2	90109-06015	BOLT	M6 x 1.0	12.0±2 (1.2±0.2)	13	

Engine

To be tightened	Part No.	Part Name	Screw dia. x pitch	Tightening torque N•m (kgf•m)	Q'ty	Remarks
DRAIN BOLT for COVER, STRAINER	90340-14132	PLUG, STRAIGHT SCREW	M14 x 1.5	43.0±4 (4.3±0.4)	1	DRAIN BOLT
Tighten UNION BOLT for FILTER.	90401-20145	BOLT, UNION	M20 x 1.5	70.0±5 (7.0±0.5)	1	
ELEMENT, OIL FILTER	5GH-13440- 20	OIL CLEANER ASSY	M20 x 1.5	17.0±2 (1.7±0.2)	1	APPLY GREASE TO O-RING.
HOLDER x CRANKCASE 2	90110-06161	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	12.0±2 (1.2±0.2)	2	
PIPE, OIL x CRANKCASE 2	90110-06161	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	12.0±2 (1.2±0.2)	2	
OIL COOLER x CRANKCASE 2	5EB-12822- 00	BOLT, UNION	M20 x 1.5	63.0±3 (6.3±0.3)	1	APPLY OIL TO THREAD AND BEARING SUR- FACE.
UPPER CASE x CAP CASE ASSY	92012-06020	BOLT, BUTTON HEAD	M6 x 1.0	5.0±0.5 (0.5±0.05)	4	
UPPER CASE x LOWER CASE	98902-05020	SCREW, CROSS RECESS BINDING	M5 x 0.8	2.0±0.5 (0.2±0.05)	10	
ELEMENT x UPPER CASE	98902-05020	SCREW, CROSS RECESS BINDING	M5 x 0.8	2.0±0.5 (0.2±0.05)	1	
JOINT, CARBURETOR 1 x THROTTLE	90450-56007	HOSE CLAMP ASSY	M5 x 0.8	2.0 – 2.5 (0.2 – 0.25)	4	CONTACT-FIT COLLAR OR TORQUE CON- TROL
THROTTLE x FUNNEL	90109-05011	BOLT	M5 x 0.8	3.4 – 5 (0.34 – 0.5)	6	
LOWER FILTER CASE x FUNNEL (SUPPORT UNIT)	90159-05035	SCREW, WITH WASHER	M5 x 0.8	2.5±0.5 (0.25±0.05)	2	
Install THROTTLE WIRE	13S-26302- 00	THROT- TLE WIRE ASSY.	M6 x 1.0	3.5 – 5.5 (0.35 – 0.55)	2	

Engine

To be tightened	Part No.	Part Name	Screw dia. x pitch	Tightening torque N•m (kgf•m)	Q'ty	Remarks
NUT, RING x HEAD	90179-08410	NUT	M8 x 1.25	20.0±2 (2.0±0.2)	8	TIGHTEN EXHAUST PIPE & HEAD.
STAY, MUFFLER 1, 2 x MUFFLER	91314-08035	BOLT, HEXAGON SOCKET HEAD	M8 x 1.25	20.0±2 (2.0±0.2)	2	INSTALL EXHAUST PIPE.
STAY, MUFFLER 2 x BRACKET, MUFFLER 1	90105-08054	BOLT, FLANGE (SMALL HEAD)	M8 x 1.25	34.0±4 (3.4±0.4)	1	INSTALL DAMPER.
Tighten BAND, MUFFLER.	91314-06030	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	10.0±2 (1.0±0.2)	1	
SILENCER x FOOT REST	90110-08099	BOLT, HEXAGON SOCKET HEAD	M8 x 1.25	20.0±2 (2.0±0.2)	1	
Install WIRE PULLEY.	13S-1133E-00 13S-1133F-00	WIRE, PULLEY, 1 WIRE, PULLEY, 2	M6 x 1.0	5 – 7 (0.5 – 0.7)	1 1	
PULLEY x GEARED MOTOR	90110-05028	BOLT, HEXAGON SOCKET HEAD	M5 x 0.8	6.5±1.5 (0.65±0.15)	1	
BRACKET 7 x FRAME	95827-06014	BOLT, FLANGE (SMALL HEAD)	M6 x 1.0	6 – 10 (0.6 – 1.0)	2	
BRACKET 7 x SERVOMOTOR	95027-06025	BOLT, FLANGE (SMALL HEAD)	M6 x 1.0	5 – 8 (0.5 – 0.8)	2	
Install MUFFLER PROTECTOR.	90111-06071	BOLT, HEXAGON SOCKET BUTTON	M6 x 1.0	8.0±1.5 (0.8±0.15)	1	
Install MUFFLER PROTECTOR.	90111-06099	BOLT, HEXAGON SOCKET BUTTON	M6 x 1.0	6.5±1.5 (0.65±0.15)	2	
EXHAUST VALVE SUB ASSY	90179-06063	NUT	M6 x 1.0	6.5±1.5 (0.65±0.15)	1	
CRANKCASE 1 x CRANKCASE 2	90119-08083	BOLT, HEXAGON WITH WASHER	M8 x 1.25	See page 61 for details.	8	APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE.

Engine

To be tightened	Part No.	Part Name	Screw dia. x pitch	Tightening torque N•m (kgf•m)	Q'ty	Remarks
CRANKCASE 1 x CRANKCASE 2	90119-08084	BOLT, HEXAGON WITH WASHER	M8 x 1.25	See page 61 for details.	2	APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE.
CRANKCASE 1 x CRANKCASE 2	90109-06100	BOLT	M6 x 1.0	10.0±2 (1.0±0.2)	2	APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE.
CRANKCASE 1 x CRANKCASE 2	95812-06055	BOLT, FLANGE	M6 x 1.0	10.0±2 (1.0±0.2)	7	APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE.
CRANKCASE 1 x CRANKCASE 2	95812-08065	BOLT, FLANGE	M8 x 1.25	24±2 (2.4±0.2)	2	APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE.
CRANKCASE 1 x CRANKCASE 2	95812-06065	BOLT, FLANGE	M6 x 1.0	10.0±2 (1.0±0.2)	3	APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE.
CRANKCASE 1 x CRANKCASE 2	95812-06045	BOLT, FLANGE	M6 x 1.0	10.0±2 (1.0±0.2)	3	APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE.
CRANKCASE 1 x CRANKCASE 2	95812-06030	BOLT, FLANGE	M6 x 1.0	10.0±2 (1.0±0.2)	1	APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE.
Install COVER, CRANKCASE 1.	90109-06015	BOLT	M6 x 1.0	12.0±2 (1.2±0.2)	9	
Install COVER, CRANKCASE 2.	90109-06031	BOLT	M6 x 1.0	12.0±2 (1.2±0.2)	7	
Install COVER, CRANKCASE 2.	90110-06156	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	12.0±2 (1.2±0.2)	2	
Install COVER 1.	90109-06014	BOLT	M6 x 1.0	12.0±2 (1.2±0.2)	5	
COVER 1 x HOLDER, CLUTCH	90109-06015	BOLT	M6 x 1.0	12.0±2 (1.2±0.2)	2	
COVER 1 x BOLT	92014-08014	BOLT, BUTTON HEAD	M8 x 1.25	15.0±2 (1.5±0.2)	1	

Engine

To be tightened	Part No.	Part Name	Screw dia. x pitch	Tightening torque N•m (kgf•m)	Q'ty	Remarks
COVER 1 x PLUG, STRAIGHT	90340-32004	PLUG, STRAIGHT SCREW	M32 x 1.5	CLOSE CON- TACT WITH BEARING SUR- FACE	1	
PLATE, BREATHER x C/ C1	90149-06082	SCREW	M6 x 1.0	12.0±2 (1.2±0.2)	3	
COVER, CRANKCASE 1 x STATOR ASSY	90149-06080	SCREW	M6 x 1.0	10.0±2 (1.0±0.2)	3	
PLUG WITH COMMUNICATION HOLE x CRANKCASE 1	90149-06082	SCREW	M6 x 1.0	12.0±2 (1.2±0.2)	1	
Install COVER, CHAIN CASE.	90110-06060	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	10.0±2 (1.0±0.2)	3	
Install M GALLERY PLUG.	36Y-15189- 00	PLUG	M16 x 1.5	8.0±2 (0.8±0.2)	2	TAKE CARE NOT TO OVER- TIGHTEN
COVER, CRANKCASE 1 x CLAMP	90149-06082	SCREW	M6 x 1.0	10.0±2 (1.0±0.2)	1	STATOR LEAD
Install COVER.	90109-06015	BOLT	M6 x 1.0	12.0±2 (1.2±0.2)	5	
Install OIL PIPE (OUTSIDE)	90110-06161	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	12.0±2 (1.2±0.2)	2	
CRANKCASE 2 x PICKUP	90110-06168	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	10.0±2 (1.0±0.2)	2	
Embedded in CRANKCASE x STUD, EMBEDDED	90116-1002*	BOLT, STUD	M10 x 1.25	(HEIGHT 68.2±1)	10	
Install PRESSURE PLATE.	90159-06024	SCREW, W/W	M6 x 1.0	8.0±2 (0.8±0.2)	6	
BOSS, CLUTCH x MAIN AXLE	4B1-16377- 70	NUT, LOCK	M20 x 1.0	115.0±5 (11.5±0.5)	1	CRIMP AND APPLY OIL BOTH TO THREAD AND BEARING SUR- FACE.

Engine

To be tightened	Part No.	Part Name	Screw dia. x pitch	Tightening torque N•m (kgf•m)	Q'ty	Remarks
BOSS, PRESSURE PLATE x BOLT, STUD	2C0-16374-00	BOLT, STUD	M8 x 1.25	25.0±2 (2.5±0.2)	6	
Install SPROCKET, DRIVE.	90179-20005	NUT	M20 x 1.0	85.0±5 (8.5±0.5)	1	WITH LOCK WASHER
HOUSING, BEARING	90151-06024	SCREW, CROSS- RECESSED COUNTER- SUNK	M6 x 1.0	12.0±2 (1.2±0.2)	3	CRIMP.
Install STOPPER, SHAFT BAR.	90110-06182	BOLT, HEXAGON	M6 x 1.0	10.0±2 (1.0±0.2)	2	
STOPPER embedded in CRANKCASE	1D7-18127-00	STOPPER, SCREW	M8 x 1.25	22.0±2 (2.2±0.2)	1	
Install ARM, SHIFT.	95822-06020	BOLT, FLANGE	M6 x 1.0	10.0±2 (1.0±0.2)	1	CHECK FOR SERRATION TIGHTENING UP.
Install ROTOR, PICKUP.	90105-08113	BOLT, FLANGE	M8 x 1.25	35.0±5 (3.5±0.5)	1	
Install STARTER MOTOR.	90105-06083	BOLT, FLANGE (SMALL HEAD)	M6 x 1.0	10.0±2 (1.0±0.2)	2	
NEUTRAL SWITCH ASSY	3GB-82540-01	NEUTRAL S/W ASSY	M10 x 1.25	17.0±2 (1.7±0.2)	1	OVERTIGHTEN- ING LEADS TO DAMAGE.
Install OIL LEVEL SENSOR.	95022-06016	BOLT, FLANGE (SMALL HEAD)	M6 x 1.0	10.0±2 (1.0±0.2)	2	APPLY GREASE TO O-RING.
SPEED SENSOR x C/C	91312-06016	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	10.0±2 (1.0±0.2)	1	
CAM SENSOR x COVER H/C	90110-06175	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	7.5±1.5 (0.75±0.15)	1	
WIRE HARNESS (NEGATIVE LEAD WIRE)	91380-06012	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	10.0±2 (1.0±0.2)	1	

Engine

To be tightened	Part No.	Part Name	Screw dia. x pitch	Tightening torque N•m (kgf•m)	Q'ty	Remarks
Install O2 SENSOR.	13S-8592A- 00	O2 SEN- SOR	M18 x 1.5	45.0±5 (4.5±0.5)	1	
Install THERMO- SENSOR.	8CC-85790- 01	THERMO- SENSOR ASSY	M12 x 1.5	17.6±2 (1.8±0.2)	1	

Body

To be tightened	Part No.	Part Name	Screw dia. x pitch	Tightening torque N•m (kgf•m)	Q'ty	Remarks
HANDLE, CROWN & OUTER TUBE	91314-08030	BOLT, HEXAGON SOCKET HEAD	M8 x 1.25	23 – 28 (2.3 – 2.8)	2	
HANDLE, CROWN & STEERING SHAFT	90170-28419	NUT, HEXAGON	M28 x 1.0	100 – 125 (10.2 – 12.7)	1	
HANDLE & OUTER TUBE	91314-08030	BOLT, HEXAGON SOCKET HEAD	M8 x 1.25	28 – 35 (2.8 – 3.6)	2	
STEERING SHAFT and RING NUT	90179-30691	NUT	M30 x 1.0	12 – 15 (1.2 – 1.5)	1	
OUTER TUBE & UNDER BRACKET	91314-08030	BOLT, HEXAGON SOCKET HEAD	M8 x 1.25	20 – 25 (2.0 – 2.5)	4	
E/G BRACKET, FRONT	95024-10040	BOLT, FLANGE (SMALL HEAD)	M10 x 1.25	35 – 45 (3.6 – 4.6)	2	
E/G BRACKET, REAR UPPER	90105-12228	BOLT, FLANGE	M12 x 1.25		1	
	90179-12004	NUT	M12 x 1.25	58 – 70 (5.9 – 7.1)	1	
E/G BRACKET, REAR UNDER	90105-12228	BOLT, FLANGE	M12 x 1.25		1	
	90179-12004	NUT	M12 x 1.25	58 – 70 (5.9 – 7.1)	1	
MAIN FRAME & REAR FRAME	13S-2585H-00	SCREW	M10 x 1.25	33 – 40 (3.3 – 4.1)	4	
PIVOT SHAFT & FRAME	2C0-22141-10	SHAFT, PIVOT	M32 x 1.5	12 – 19 (12.2 – 1.9)	1	
ARM, RELAY 1 & FRAME	90105-10211	BOLT	M10 x 1.25		1	SCREW IN FROM THE LEFT SIDE
	95602-10200	NUT, U FLANGE	M10 x 1.25	31 – 49 (3.2 – 5)	1	
ARM, RELAY 1 & ARM 1	90105-12081	BOLT	M12 x 1.25		1	SCREW IN FROM THE LEFT SIDE
	90185-12011	NUT, SELF LOCKING	M12 x 1.25	31 – 49 (3.2 – 5)	1	

Body

To be tightened	Part No.	Part Name	Screw dia. x pitch	Tightening torque N•m (kgf•m)	Q'ty	Remarks
ARM 1 & REAR ARM	90105-12081	BOLT	M12 x 1.25		1	SCREW IN FROM THE LEFT SIDE
	90185-12011	NUT, SELF LOCKING	M12 x 1.25	31 – 49 (3.2 – 5)	1	
REAR CUSHION & ARM, RELAY 1	90105-12082	BOLT	M12 x 1.25		1	SCREW IN FROM THE LEFT SIDE
	90185-12011	NUT, SELF LOCKING	M12 x 1.25	31 – 49 (3.2 – 5)	1	
CHAIN PULLER ADJUST NUT	95604-08200	NUT, U FLANGE	M8 x 1.25	12 – 19 (12.2 – 1.9)	2	
SHAFT, PIVOT & LOCK NUT	2C0-22252- 00	NUT 2	M32 x 1.5	75 – 115 (7.6 – 11.7)	1	
SHAFT, PIVOT & U NUT	90185-22009	NUT SELF LOCKING	M22 x 1.5	55 – 85 (5.6 – 8.7)	1	
FUEL PUMP & FUEL TANK	90110-05028	BOLT, HEXAGON SOCKET HEAD	M5 x 0.8	3 – 5 (0.3 – 0.5)	6	
FRONT STAY for FUEL TANK & FRAME	90111-06030	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	5 – 8 (0.5 – 0.8)	1	
Mid portion of FUEL TANK & STAY	91312-06016	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	7 – 10 (0.7 – 1.0)	2	
BRACKET, TANK (rear) & FUEL TANK	91312-06090	BOLT, HEXAGON SOCKET HEAD	M6 x 1.0	5 – 8 (0.5 – 0.8)	1	
BRACKET, TANK (rear) & REAR FRAME	90111-06071	BOLT, HEXAGON SOCKET BUTTON	M6 x 1.0	5 – 8 (0.5 – 0.8)	4	
FRONT WHEEL SHAFT & FR FORK	90105-14002	BOLT, FLANGE	M14 x 1.5	70 – 111 (7.0 – 11.1)	1	
REAR WHEEL SHAFT & NUT	90185-24008	NUT, SELF LOCKING	M24 x 1.5	90 – 130 (9.2 – 13.3)	1	
FR CALIPER & FR FORK	90105-10397	BOLT, UNION	M10 x 1.25	30 – 40 (3.1 – 4.1)	4	
DISC BRAKE & FR WHEEL	90149-06043	SCREW	M6 x 1.0	14 – 22 (1.4 – 2.2)	10	APPLY LOCK- ING AGENT (LOCKTITE®).
DISC BRAKE & RR WHEEL	90149-08009	SCREW	M8 x 1.25	23 – 37 (2.3 – 3.8)	5	APPLY LOCK- ING AGENT (LOCKTITE®).

Body

To be tightened	Part No.	Part Name	Screw dia. x pitch	Tightening torque N•m (kgf•m)	Q'ty	Remarks
REAR WHEEL SPROCKET & CLUTCH HUB	90185-10009	NUT, SELF LOCKING	M10 x 1.25	90 – 109 (9.2 – 11.1)	6	
SPLIT BOLT for FRONT AXLE	91314-08040	BOLT, HEXAGON SOCKET HEAD	M8 x 1.25	18 – 23 (1.8 – 2.3)	4	

Tightening the Cylinder Head

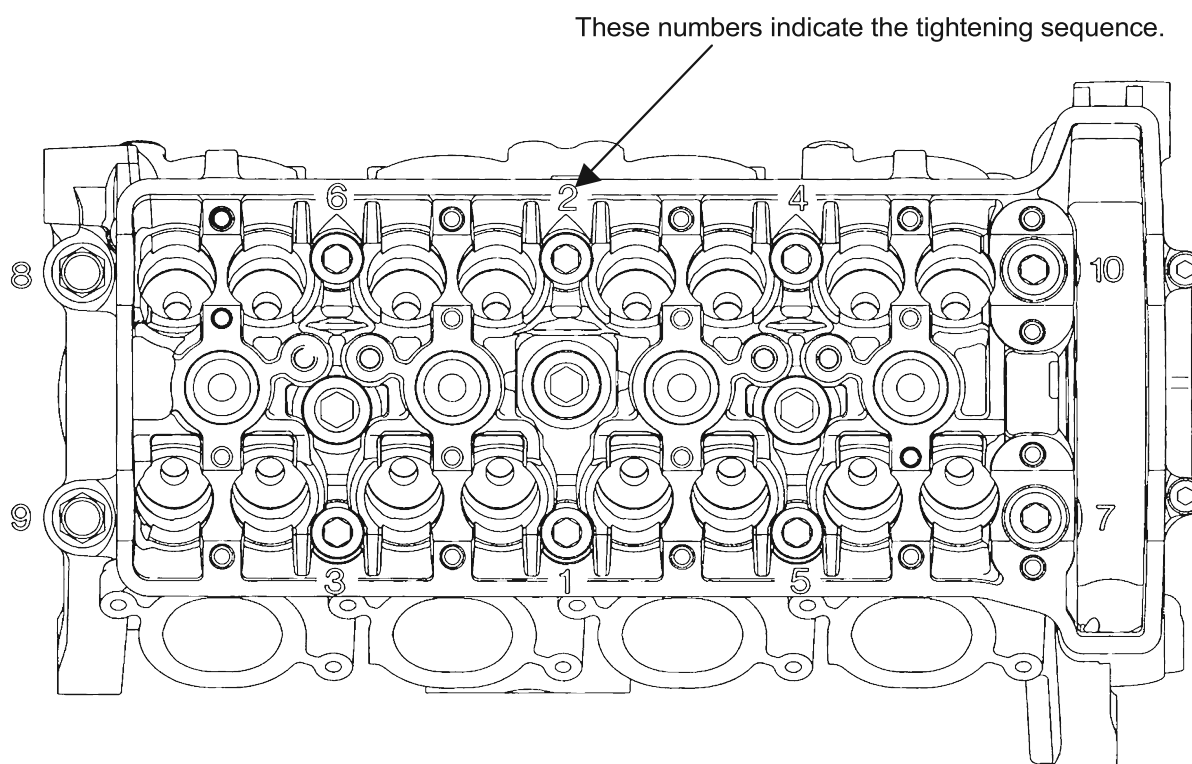
Tightening the Cylinder Head

1. In the sequence 1 to 10, tighten 1 to 7 and 10 to a torque of 25 N•m (2.5 kgf•m) and tighten 8 and 9 to a torque of 30 N•m (3.1 kgf•m).
2. Next, in sequence, tighten 1 to 7 and 10 to a torque of 42 N•m (4.2 kgf•m) and tighten 8 and 9 to a torque of 60.0 N•m (6.1 kgf•m).

TIP

The numbers 1 to 10 show the sequence in which the bolts are tightened.

Apply engine oil to the bolt threads, contact surfaces, and washers.



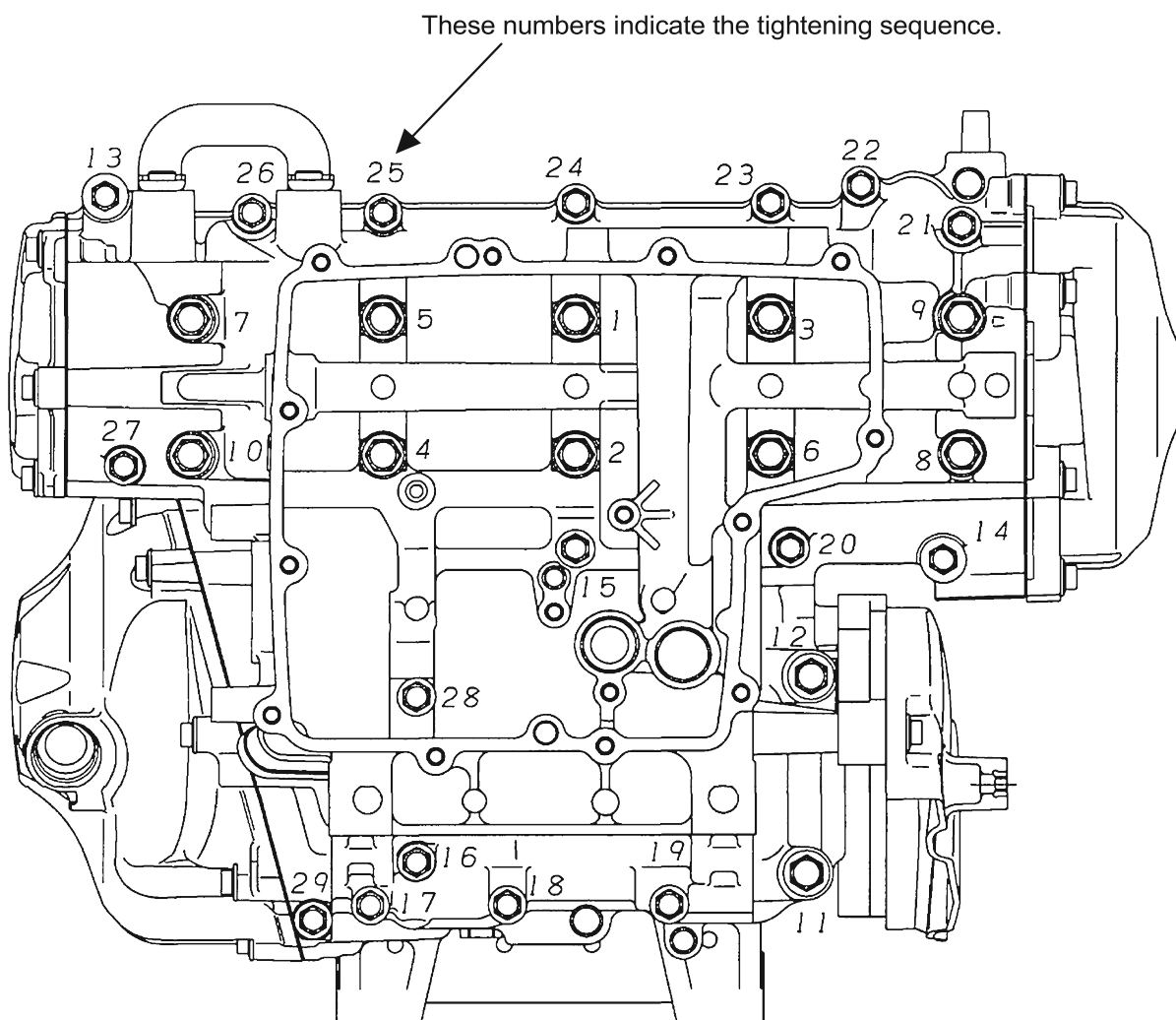
Installing the Crankcase

Tightening the bolts

1. Tighten the bolts in the tightening sequence of 1 to 10 to 20 N•m (2.0 kg•m).
2. After loosening the bolts once in the tightening sequence of 1 to 10, retighten them one by one to 12 N•m (1.2 kg•m).
3. Retighten the bolts in the tightening sequence of 1 to 7 to a turn-of-nut angle of $50^{\circ}\pm 5^{\circ}$.
4. Retighten the bolts in the tightening sequence of 8 and 9 to a turn-of-nut angle of $75^{\circ}\pm 5^{\circ}$.
5. Retighten the bolt in the sequence of 10 to a turn-of-nut angle of $50^{\circ}\pm 5^{\circ}$.
6. Tighten the bolts in the tightening sequence of 11 and 12 to 24 ± 2 N•m (2.4 ± 0.2 kgf•m).
7. Tighten the bolts in the tightening sequence of 13 to 29 to 10 ± 2 N•m (1.0 ± 0.2 kgf•m).

TIP

The numbers 1 to 29 show the sequence in which the bolts are tightened.
Apply engine oil to the bolt threads and both sides of the washers.



4 YZF-R6 Wiring Diagram

