

ST-R TypeR RACING CAMSHAFT SET SUZUKI GSX-R1000 【Part No. 210-518-0100】

- Be sure to read this manual carefully before starting to work.
- While in the installation, keep it at hand and proceed by following the procedure.
- This manual must be retained until the product is scrapped.

This product is designed for the racetrack use ONLY. Do not use this product on the public road. When use this product, confirm race regulation before installation.

! DANGER : Indicates a potential hazard that could result in death, injury or engine breakdown.

! CAUTION : Indicates a potential hazard that could result in motorcycle damage.

REFERENCE : Indicates special information for smooth work.

● Applicable Model

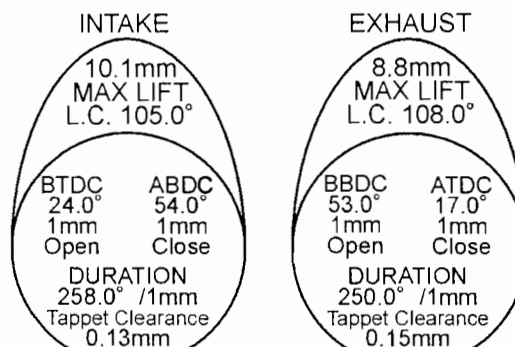
SUZUKI : GSX-R1000 K9

! DO NOT use it for any other models.

● KIT Contents

No.	Part No.	Description	Q'ty
1	210-518-0110	ST-R TypeR Intake camshaft	1
2	210-518-0120	ST-R TypeR Exhaust camshaft	1
3	212-505-0010	Sprocket, camshaft	2
4	09103-07003-000	Bolt, cam sprocket	4

● Specification



* Above data are the designed numbers only. The actual measured numbers may slightly differ from originally design.

● Condition of use

REFERENCE Engine rev limit can be raised up to 14,000rpm by EM Pro.

● Recommended parts

- Valve cotter set [Part No. 222-518-0000]
- Valve retainer set [Part No. 223-518-0000]
- EM Pro [Part No. 490-518-0000]

● Recommended tools

- Cam chain drive sprocket spacer [Part No. A-D4120-614]
- Timing wheel [Part No. 258-000-5150]
- Timing wheel bracket [Part No. 258-000-0000]
- Timing wheel indicator [Part No. 258-567-0000]
- T.D.C. Stopper [Part No. 258-567-0030]
- Valve lifter tool [Part No. 258-567-0040]

! DANGER This product is racing camshaft with adjustable cam sprocket. The valve timing must be adjusted to specified lobe center when installing.

! CAUTION Be careful not to drop any parts into the crankcase. Before installation, disassembled parts should be cleaned and dried well.

● Necessary Parts

REFERENCE

This kit camshaft is designed with 27mm diameter base circle while stock one is 28mm, therefore it is required to add extra tappet shim with approximately 0.5mm thicker.

■ Tappet shim (Purchase the proper tappet shim from the list when adjusting the tappet clearance.)

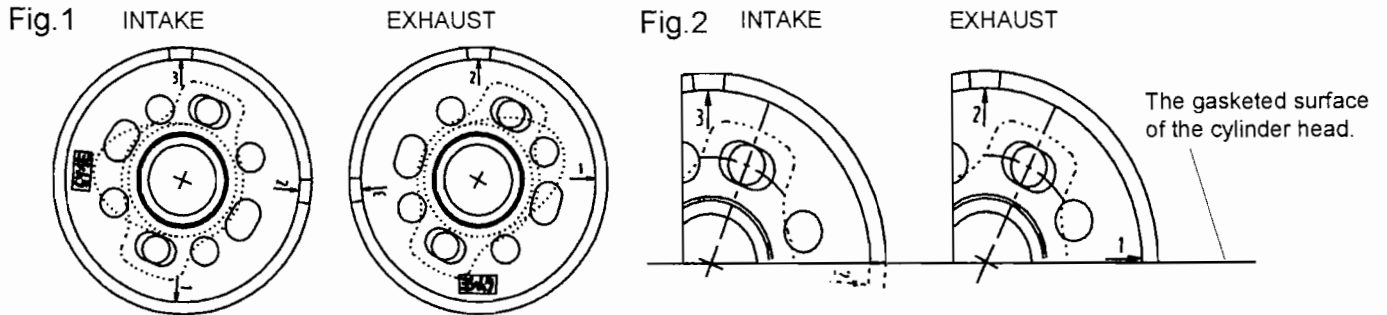
Tappet shim (t=2.00).....	[SUZUKI GENUINE Part No. 12892-05C00-200]
"	[HONDA GENUINE Part No. 14933-KT7-013]
Tappet shim (t=2.05).....	[SUZUKI GENUINE Part No. 12892-05C00-205]
"	[HONDA GENUINE Part No. 14935-KT7-013]
Tappet shim (t=2.10).....	[SUZUKI GENUINE Part No. 12892-05C00-210]
"	[HONDA GENUINE Part No. 14937-KT7-013]
Tappet shim (t=2.15).....	[SUZUKI GENUINE Part No. 12892-05C00-215]
"	[HONDA GENUINE Part No. 14939-KT7-013]
Tappet shim (t=2.20).....	[SUZUKI GENUINE Part No. 12892-05C00-220]
"	[HONDA GENUINE Part No. 14941-KT7-013]
Tappet shim (t=2.25).....	[SUZUKI GENUINE Part No. 12892-05C00-225]
"	[HONDA GENUINE Part No. 14943-KT7-013]
Tappet shim (t=2.30).....	[SUZUKI GENUINE Part No. 12892-05C00-230]
"	[HONDA GENUINE Part No. 14945-KT7-013]
Tappet shim (t=2.35).....	[SUZUKI GENUINE Part No. 12892-05C00-235]
"	[HONDA GENUINE Part No. 14947-KT7-013]
Tappet shim (t=2.40).....	[SUZUKI GENUINE Part No. 12892-05C00-240]
"	[HONDA GENUINE Part No. 14949-KT7-013]
Tappet shim (t=2.45).....	[SUZUKI GENUINE Part No. 12892-05C00-245]
"	[HONDA GENUINE Part No. 14951-KT7-013]
Tappet shim (t=2.50).....	[SUZUKI GENUINE Part No. 12892-05C00-250]
"	[KAWASAKI GENUINE Part No. 92180-0167]
Tappet shim (t=2.55).....	[SUZUKI GENUINE Part No. 12892-05C00-255]
"	[KAWASAKI GENUINE Part No. 92180-0169]
Tappet shim (t=2.60).....	[SUZUKI GENUINE Part No. 12892-05C00-260]
"	[KAWASAKI GENUINE Part No. 92180-0171]
Tappet shim (t=2.65).....	[SUZUKI GENUINE Part No. 12892-05C00-265]
"	[KAWASAKI GENUINE Part No. 92180-0173]
Tappet shim (t=2.70).....	[SUZUKI GENUINE Part No. 12892-05C00-270]
"	[KAWASAKI GENUINE Part No. 92180-0175]
Tappet shim (t=2.75).....	[SUZUKI GENUINE Part No. 12892-05C00-275]
"	[KAWASAKI GENUINE Part No. 92180-0177]
Tappet shim (t=2.80).....	[SUZUKI GENUINE Part No. 12892-05C00-280]
"	[KAWASAKI GENUINE Part No. 92180-0179]
Tappet shim (t=2.85).....	[SUZUKI GENUINE Part No. K9218-00181]
"	[KAWASAKI GENUINE Part No. 92180-0181]
Tappet shim (t=2.90).....	[SUZUKI GENUINE Part No. 12892-05C00-290]
"	[KAWASAKI GENUINE Part No. 92180-0183]
Tappet shim (t=2.95).....	[SUZUKI GENUINE Part No. K9218-00185]
"	[KAWASAKI GENUINE Part No. 92180-0185]
Tappet shim (t=3.00).....	[SUZUKI GENUINE Part No. 12892-05C00-300]
"	[KAWASAKI GENUINE Part No. 92180-0187]

Installation Steps

Each parts removal and installation should be done in accordance with the SUZUKI genuine service manual.

● **Camshaft and sprocket installation**

- Refer to Fig.1 and adjust the positions of the camshafts and the arrow marks on the cam sprockets.
- Refer to Fig.2 and adjust the position of a camshaft's bolt-hole so that it comes to the center of cam sprocket bolt-hole.
- Preinstall a cam sprocket bolt.
- Confirm that the opposite camshaft bolt-hole is at the center of the another cam sprocket bolt-hole. If it is not at the right position, repeat the procedure.
- Tighten preinstalled cam sprocket bolt to prevent any slants from the center.
- Confirm the center of the opposite cam sprocket bolt-hole again and then preinstall the other cam sprocket bolt.
- Tighten both bolts to the specified torque. [Tightening torque : 25N · m (2.5kgf · m)]



● **Inspection**

■ Items

- Valve retainers, valve cotters, valve springs, spring seats and tappets for wear or damage.
- Valves and valve guides for looseness, wear or damage.
- Camshaft journal surfaces for wear or damage.

* Items other than above mentioned should be checked in accordance with the SUZUKI genuine service manual.



DANGER Parts checking and consumable replacement must be done correctly. If neglect, engine damage could occur.

● **Tappet clearance adjustment**

- Specification (When cold)
 - INTAKE : 0.11 - 0.15mm
 - EXHAUST : 0.13 - 0.17mm



The tappet clearance must be adjusted every time camshaft is installed.

REFERENCE

This kit camshaft is designed with 27mm diameter base circle while stock one is 28mm, therefore it is required to add extra tappet shim with approximately 0.5mm thicker.

● **Valve timing inspection and adjustment**

- Intake side valve timing at 1mm of valve lift
 - IN Open : BTDC 24.0 degrees
 - IN Close : ABDC 54.0 degrees
 - Lobe center : 105.0 degrees
- Exhaust side valve timing at 1mm of valve lift
 - EX Open : BBDC 53.0 degrees
 - EX Close : ATDC 17.0 degrees
 - Lobe center : 108.0 degrees



After inspection and adjusting the valve timing, take the measurement for the piston to valve clearance and confirm it is in the specified range.

Piston to valve clearance INTAKE : More than 0.9mm
 EXHAUST : More than 1.4mm



Thread lock " Thread Lock 1342" [SUZUKI part No.99000-32050] must be applied to the cam sprocket bolts.

Cam sprocket bolt torque specification : 25N · m(2.5kgf · m) must be followed.

Break-in

1. Change the engine oil and pour engine oil to the specified quantity.

Recommended engine oil : Higher than API,SF grade and SAE10W-40 - 15W-50

2. Remove the spark plugs and spinning the engine by starter motor to lubricate the surroundings of the camshafts well.



CAUTION

Starter motor must be run intermittently for 2 or 3 seconds. for twice or more.
Continuous run may result in burnout of starter motor.

3. Let it stand for several minutes, and then check the oil level. Add oil if the level is low.

4. Install the spark plugs.

5. Start the engine, check for engine oil leakage and let it warm up the engine until the oil temperature rises sufficiently.

6. For 100km - 200km of running, the engine rpm should be keep below 5,000rpm.

7. For 200km - 300km of running, the engine rpm should be keep below 6,000rpm.



CAUTION

During the break-in, avoid heavy loadings such as sudden starts and rapid accelerations.

8. When break-in is completed, adjust the tappet clearance and check that there is no abnormal noise. If any abnormal noise are heard, disassemble and inspect the engine again.



CAUTION

When the engine is started to run, warm up must always be done until the oil temperature rises sufficiently even break-in is completed.

Quality control is implemented to all the products. If, however, any failure was found, please notify Yoshimura Japan through the selling dealer. Necessary technical service or replacement will be made. Due to improvement, the specifications and prices of the products are subjected to be changed without notice.

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