

CONNECTING ROD SET INSTALLATION MANUAL



NAME OF PRODUCT	CONNECTING ROD SET
PART NUMBER	23004-AN006
APPLICATION	NISSAN GT-R R35
ENGINE	VR38DETT
YEAR	2007/12 -
REMARKS	<p>※ This kit was designed on a JDM vehicle and has not yet been tested in other markets.</p> <ul style="list-style-type: none">• When using the factory pistons with this product, honing the small-end or replacing the bushing may be required.

REVISION OF MANUAL

Rev. Number	Date	Manual Number	Details
3-3.01	2012/09	E13210-N49010	1 st Edition

Published in June, 2010 by HKS Co., Ltd. (Unauthorized reproduction is strictly prohibited.)

NOTICE

This manual assumes that you have and know how to use the tools and equipment necessary to safely perform service operations on your vehicle. This manual assumes that you are familiar with typical automotive systems and basic service and repair procedures. Do not attempt to carry out the operations shown in this manual unless these assumptions are correct. Always have access to a factory service manual. To avoid injury, follow the safety precautions contained in the factory service manual.

PRODUCT FEATURES

- This product was developed to improve engine output to a higher range, and for race use on a closed course, where this kit is highly effective. When the engine output is improved, water temperature and oil temperature will rise, and insufficient oil pressure will occur. Always maintain them for the optimal engine performance.
- To use this product on public roads, follow the necessary procedures and regulations for modified vehicles.

ATTENTION

- This manual indicates items you need to pay attention to in order to install this product safely and lists precautions to avoid any possible damage and/or accidents.
- This product is an automobile part. Do not use for any other purposes.
- HKS will not be responsible for any damage caused by incorrect installation and/or use, or use after modification and/or dismantling of this product.
- This product was designed based on installation onto a specific factory vehicle.
- The specifications of this product are subject to change without notice.
- The instructions are subject to change without notice. Make sure to refer to the most recent instructions.

SAFETY PRECAUTIONS

WARNING



- To prevent explosion and/or fires, always:
 - Work on the vehicle in a well-ventilated area.
 - Handle any flammable objects with care.
- To prevent electrical damage/burns/fires, always:
 - Disconnect the negative terminal of the battery before beginning installation.
 - When disconnecting connectors, take extra care to avoid breaking the connectors.
- Before jacking up the vehicle, always use wheel blocks and position the jack correctly. Also, do not start working under the vehicle without using jack stands.
 - Positioning the jack incorrectly imbalances the vehicle and may damage the vehicle body.
 - Incorrect use of jack stands may result in the vehicle falling causing serious injury or possibly death.

CAUTION

- Do not misuse this product.
 - Misuse of this product may lead to engine damage.
 - Misuse of this product may lead to loss of its original function.
- Prior to installation, make sure the engine bay temperature has cooled to approximately 40°C/104°F
 - Failure to let the engine cool down properly can lead to severe burns.
- Insert clean rags into open piping to prevent contaminants from entering the pipes.
 - If neglected, contaminants in the piping can lead to engine damage.

- Make sure that all of the parts listed in the Parts List are included in the kit.
- Reference the factory service manual when removing factory parts.
- Be careful when handling this product; avoid dropping or subjecting it to excessive impacts. Failure to do so may result in product damage or improper installation.
- Use the proper tools when tightening nuts and bolts. If over-tightened, the bolts may become damaged.
- Keep the removed factory parts in a safe place for ease of reinstallation at a later date (if necessary). It is recommended to mark the positions of the removed factory parts.
- When refilling oil, make sure to use the appropriate type of oil.

PARTS LIST

NO.	DESCRIPTIONS	QT	IMAGE	REMARKS
1	Connecting Rod	6		H-beam Type
2	Installation Manual	1		

REPAIR PARTS LIST

NO.	DESCRIPTIONS	QT	IMAGE	REMARKS
1	Connecting Rod Bolt	1		M9 x 1.0

SPECIFICATIONS

		Factory	HKS
CON'ROD	Small End Diameter (mm)	23	←
	Big End Diameter (mm)	59	←
	Hole Center Distance (mm)	165.1	←

IMPORTANT NOTICE

- Clean connecting rods and bolts before measuring and/or installing the connecting rod. If neglected, measurement or installation may be incorrect.

1. REMOVAL OF FACTORY PARTS

Remove factory parts referring to the factory service manual.

2. Oil Clearance Verification for Bearing

● Designated Oil Clearance

Oil Clearance (mm)	0.055 - 0.068
Limit (mm)	0.088

● Follow the procedures below; make sure the oil clearance is within the designated clearance value.

2-1. Install the Bearings to the big end of the Connecting Rods referring to the section 3.

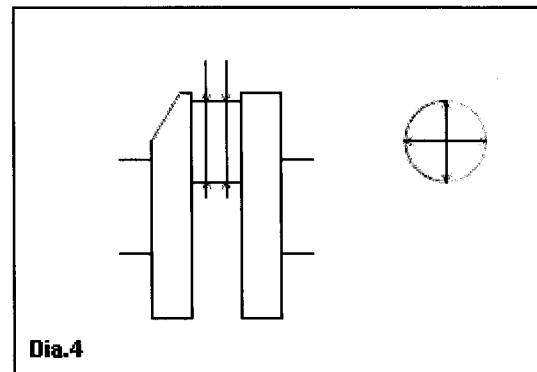
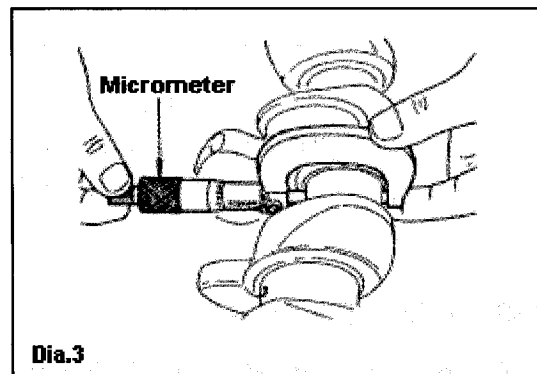
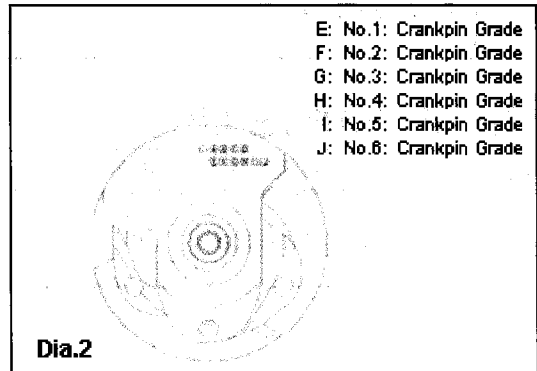
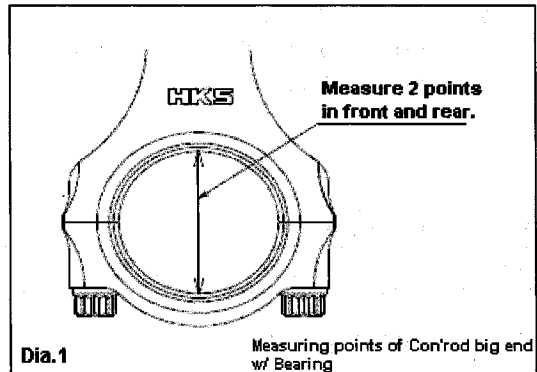
2-2. Measure the I.D of the big ends including the Bearings with the cylinder gauge as shown in the diagram 1. Measure at least 2 points on the front and back. (Use the smaller value to calculate the oil clearance.)

2-3. Confirm the pin O.D. class number on the front side of the crankshaft's counter weight. If the class number cannot be confirmed, measure the crank pin.

2-4. Measure the crankshaft's pin diameter using a micrometer. Measure 4 points, and use the larger value to calculate the oil clearance.

2-5. Calculate the oil clearance based on the Bearing's I.D. measured in 2-1 and 2-2, or the crank pin diameter measured in 2.5. Use the formula below, and select the Bearings so the oil clearance can be within the designated clearance value.

$$\text{Oil Clearance} = \text{Bearing I.D.} - \text{Crank Pin O.D.}$$



CAUTION

- The optimal performance cannot be guaranteed if the oil clearance is not within the designated value.
- As exception, the oil clearance must be adjusted depending on the type of the race. Using this product for racing may shorten the product life.

3. Installing Connecting Rods

- 3.1 Install the Bearings to the Connecting Rods and Connecting Rod Caps. (Diagram 5) Before installing the Bearings, clean the back of the bearings and inside of the Connecting Rod's big ends. Do not use the engine oil and any lubricant to clean the Bearings and Connecting Rods.
- 3.2 Align the tabs on the Bearings with the tab grooves in the Connecting Rods; then install the Connecting Rods.
- 3.3 Apply clean engine oil to inside the Connecting Rod Bearings; then tilt the Connecting Rods as shown in Diagram 6, and insert the rods. Make sure each Connecting Rod does not come in contact with the oil jet and/or inside the cylinder when inserting the rod.
 - The HKS logo must come to the front when installing the rod.
- 3.4 Install the Connecting Rod Caps as instructed above after applying clean engine oil. Make sure each cap was installed to the correct Connecting Rod in correct direction.
- 3.5 Tighten the Connecting Rod Bolts following the procedures below. (Do not reuse the Connecting Bolt.)

- (1) Apply clean engine oil to the thread and seat of the Connecting Rod Bolts; then install the bolts.
- (2) Tighten the bolts in 3 steps using the torque wrench.

Torque Spec.:

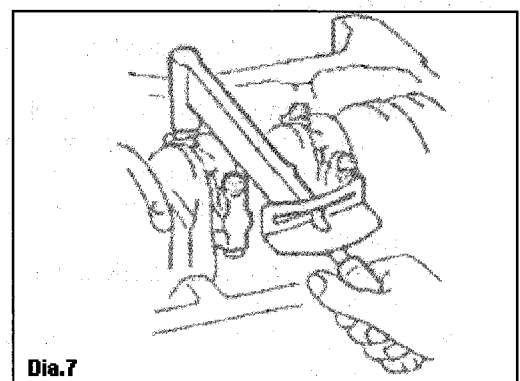
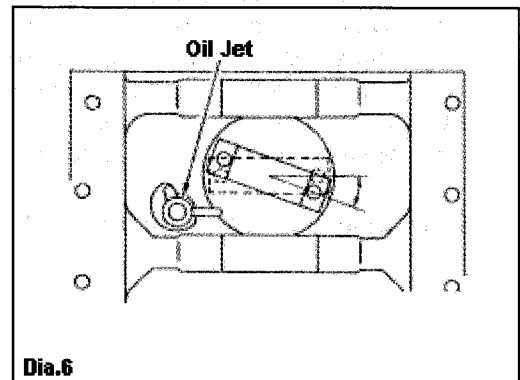
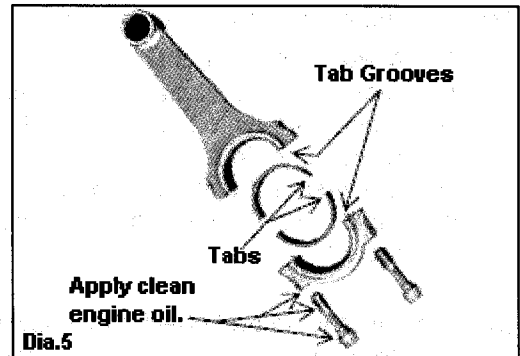
- 1st : 24.8 N·m (2.9kgf·m)
- 2nd: 0 N·m (0 kgf·m)
 - * Completely loosen the bolt.
- 3rd: 24.5 N·m (2.5kgf·m)

- (3) Tighten further to 120°.

[NOTE]

When tightening the bolts to the specified angle, use the angle wrench (Nissan P/N: KV10112100). Do not confirm the angle visually. Always use the appropriate tool.

- (4) Make sure the crankshaft can be rotated smoothly after installing the Connecting Bolts.



CAUTION

- Do not reuse the Connecting Bolts. If the bolts are reused, the bolt may be broken.
- If the Connecting Bolts are re-tightened more than 4 times, it is recommended to replace the bolt with new ones.

Confirm After Installation

(1) Check the following before starting the engine:

- Make sure pipes and hoses are routed and connected correctly.
- Make sure hoses are not twisted or bent.
- Make sure the negative cable terminal is securely attached to the battery.
- Make sure the engine oil level is between H - L.
- Make sure all bolts and nuts are tightened.
- Make sure all installed components do not come in contact with any other parts.

(2) Start the engine and check the following:

- Make sure air is not leaking.
- Make sure oil, coolant, and/or fuel are not leaking.
- Make sure air, oil, and/or coolant are not leaking after revving the engine 2-3 times while in neutral.
- Make sure the installed parts do not come in contact with any other parts.
- Make sure the installed parts are performing properly. (Confirm visually and use the proper tools.)

(3) Stop the engine and check the following:

- ※ Do not raise the engine RPM right after the engine is started. (Let it idle.)
- Make sure all bolts and nuts are tightened.
- Make sure all installed components do not come in contact with any other parts.
- Make sure all installed parts are properly secured.
- Make sure the engine oil level is between H - L.
- Make sure air is not leaking.
- Make sure oil, coolant, and/or fuel are not leaking.

※Reinstall all necessary factory parts removed before installation.

MAINTENANCE

Proper maintenance of this product is necessary in order to maintain the safety, reliability, and function of this product.

- Maintenance is the responsibility of the driver/owner.
- If work needs to be performed outside the scope of this manual, consult a professional.
- In order to maintain the performance of the kit, routine filter replacement is necessary. (Recommended replacement intervals: Every 3,000-5,000km/2,000-3,200miles or every 3-6 months.)
- When upgrading spark plugs, choose the appropriate heat range applicable to the engine. Consult a professional for more details.
- For optimal performance, it is recommended to replace the engine oil every 3,000km or every 6 months.

ATTENTION

- Idling must be done before driving the vehicle.
- Before the engine bay temperature warm up, rapid acceleration and/or revving the engine 2-3 times while in neutral must be avoided. Even after the engine bay temperature has warmed up, excessive revving should be avoided to protect the engine.

TROUBLESHOOTING

WARNING

- Do not start the engine when oil and/or water leakage is noticed.
- Stop driving if you experience an abnormal drop in oil pressure; oil may be leaking. Do not restart the engine if oil is leaking.
 - Explain the source of the leak to a professional and have the repairs performed by a professional.
 - If oil leakage is serious, ask a professional how to temporarily repair and conduct the repair by yourself to prevent further damage.
 - Always follow the instructions given by a professional.If neglected, oil leakage can lead to a vehicle fire.

- If the vehicle gets damaged, have the repairs performed by a professional.
- If you experience any abnormal noises, scents, or vibrations from the vehicle while driving, reference the factory service manual.

FOR SUBSEQUENT OWNERS

- If this product is re-sold, please give this Instruction Manual to the new owner.
- Consult a professional when removing this product from the vehicle.