

Cam Shaft Bearing Retainer Kits KT275 and KT276 Installation Instructions

L +1 413 233 1888

www.governors-america.com

1 INTRODUCTION

GAC's KT275 and KT276 cam shaft bearing retainer mounting kits (each sold separately) support the actuator installations of GAC 175 and 275 Series actuators on Bosch P3000 and P7000 pumps.

The bearing retainer kits hold the fuel pump camshaft bearing in position and provides an oil-proof seal for the lower part of the injection pump, that would have originally been sealed by the rear main housing of the mechanical governor.

Use the KT275 kit for your Bosch P3000 applications or the KT276 for your Bosch P7000 pump.

After successfully installing the related bearing retainer kit see your actuators installation manual for details on installing the actuator.

2 KIT CONTENTS

Depending upon the fuel pump model, the following items are included in each kit.

KT275 - BEARING RETAINER KIT - FOR BOSCH P3000

ITEM	DESCRIPTION	GAC P/N	QUANTITY
1	PLATE, BEARING RETAINER	PL280	1
2	GASKET	GA283	1
3	STUD M6X45	HW05-500	2
4	CAP SCREW M6x20	HW05-514	2
5	SPRING WASHER M6	HW06-600	4
6	FLAT WASHER M6	HW06-601	2
7	HEX NUT M6	HW07-700	2
8	SEAL, BEARING RETAINER	SE100	1
9	SHIM	SR276-1	2
10	SHIM	SR276-2	2
11	SHIM	SR276-3	2
12	SHIM	SR276-4	1



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KT276 - BEARING RETAINER KIT - FOR BOSCH P7000

ITEM	DESCRIPTION	GAC P/N	QUANTITY
1	PLATE, BEARING RETAINER	PL281	1
2	GASKET	GA282	1
3	STUD M6X45	HW05-500	2
4	CAP SCREW M6x20	HW05-514	2
5	SPRING WASHER M6	HW06-600	4
6	FLAT WASHER M6	HW06-601	2
7	HEX NUT M6	HW07-700	2
8	SEAL, BEARING RETAINER	SE100	1
9	SHIM	SR275-1	2
10	SHIM	SR275-2	2
11	SHIM	SR275-5	2
12	SHIM	SR276-4	1

4 DETERMINING THE RIGHT KIT FOR YOUR PUMP

To determine your pump kit needs, determine which Bosch pump you are working with. The following details the measurements of the mounting holes for each type of pump.

P3000 PUMP BOLT HOLE SPACING

The P3000 pump uses a flat plate on the bottom.

Use the KT275 kit.





P7000 PUMP BOLT HOLE SPACING

The P7000 pump has a series of plugs on the bottom.

Use the KT276 kit.





4 BEFORE YOU START

Before installing the Camshaft Bearing Retainer Kits KT275 for the for the BOSCH P 3000 and the GAC KT276 for the BOSCH P 3000, the existing mechanical governor must be removed. GAC strongly recommends a qualified Bosch Fuel Pump Service Facility removes the mechanical governor assembly.

NOTE

The mechanical governor will release oil during removal.

5 ADDITIONAL REQUIRED ITEMS

The following additional items are needed fort this installation:

- 5 mm ball end hex wrench
- Liquid gasket and Loctite 242 thread locking compound
- Vernier calipers

6 INSTALLATION PROCEDURE

CLEAN PUMP SURFACE

- 1. Once the mechanical governor is removed, remove the mechanical governor housing.
- 2. Clean the pump surface of any grease and/or gasket residue.
- 3. Polish the surface if scratched.
- 4. If present, remove the pump oil drain plug between the fuel rack and the camshaft.



BEARING RETAINER PLATE INSTALLATION

DETERMINE SHIM SIZE NEEDED

- 1. Using a depth gauge, measure the distance that the camshaft bearing protrudes from the pump face and record this depth as dimension "A". This will be used to determine the required thickness of the clearance shims.
- 2. Using a depth gauge, measure the depth from the inner face on the bearing retainer plate to the top of the sealing gasket and record this depth as dimension B. The dimension in the bearing retainer plate will be larger than the bearing dimension "A" on the fuel pump.
- The thickness of the bearing shims plus allowing for gasket compression is determined similar to the following example: Dimension A = 5.20 mm Dimension B = 6.93 mm Dimension C = 0.85 mm (uncompressed thickness of the sealing gasket)
 B - (A + C) = D

B - (A + C) = D6.93 mm - (5.20 mm + 0.85 mm) = 0.88 mm

 Using vernier calipers, select the bearing shims from KT275, items 9-12, until the required total shim thickness (in this example .88 - your needs will differ) is achieved.



The cam shaft end play should be between 0.002 in and 0.008 in [0.05 mm - 0.20 mm]





6 INSTALLATION PROCEDURE (CONTINUED)

BEARING RETAINER PLATE INSTALLATION (CONTINUED)

Failing to remove imperfections on the camshaft may result in damage to the shaft seal on the bearing retainer plate.

INSERT SHIMS

- 5. Insert required shims into the counter bore the bearing support plate.
- 6. Hold the shims in the plate by applying a very small amount of grease.

INSTALL BEARING RETAINER PLATE

- 7. Insert the gasket over the camshaft bearing.
- 8. Before installing the bearing cover plate, visual inspect the fuel pump camshaft and check for any score marks, scratches or dents. Remove any imperfections with a metal polishing block.
- 9. When clean, apply a small amount of grease to the camshaft.
- 10. Align holes on gasket and bearing retainer plate to the mounting holes on the fuel pump.
- 11. Carefully slide the bearing retainer plate assembly over the camshaft. Avoid the shaft seal coming into contact with the camshaft keyway channel by carefully pushing the plate away from the keyway, and then sliding the retainer plate into position.
- 12. Apply a small amount of Loctite 242 thread locking compound to the screw threads.
- 13. Install the two M6 cap screws (KT Item 4) in the lower mounting holes of the pump.
- 14. Thread the shorter ends of the M6 studs (KT Item 3) into the fuel pump. Check to ensure the cam shaft end play is between 0.002 in and 0.008 in [0.05 mm 0.20 mm]
- 15. Using two M6 socket head bolts and two M6 spring retaining washers install the bolts and spring washers in the upper mounting holes.
- 16. Lightly hand-tighten the M6 bolts using a 5 mm hex wrench.





You are now ready to install the GAC 175 or 275 Series actuator. Please see the actuators Installation Manual for next step details.