



## 18SP670 – EPA07 MBE 4000 Turbocharger Wastegate Actuator Service Kit (P/N: A0001400269)

### KIT DESCRIPTION

EPA07 MBE 4000 turbocharger wastegate actuators can now be replaced independent of the turbocharger assembly. Proper wastegate function is critical to engine performance.

### KIT CONTENTS

Service kit P/N: A0001400269, shown in Table 1, contains all of the necessary parts to replace the wastegate actuator on EPA07 MBE 4000 turbochargers.

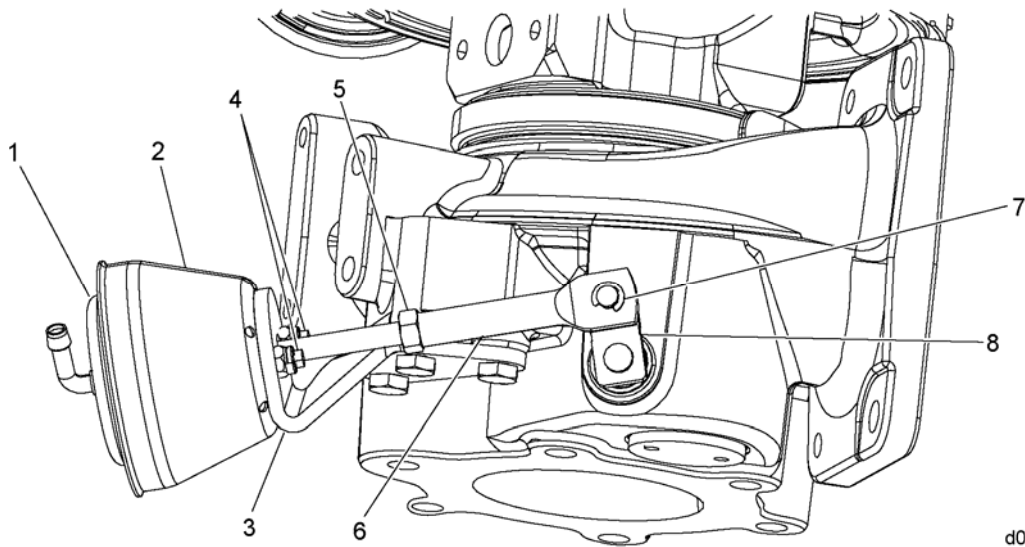
Part No.	Qty.	Description
A0001400269	1	Wastegate Actuator Service Kit
18SP670	1	Installation Instructions

**Table 1 EPA07 MBE 4000 Turbocharger Wastegate Actuator Service Kit (P/N: A0001400269)**

### **NOTE:**

Proper installation and adjustment of the wastegate actuator requires the use of a highly accurate digital air pressure gauge, TLZ00101 (included in special tool kit TLZ00100) or equivalent.

See Figure 1 for turbocharger wastegate actuator components.



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1. Wastegate Actuator
2. Heat Shield
3. Actuator Bracket
4. Hex Nuts (M6)

5. Adjusting Rod Jam Nut (M8)
6. Adjusting Rod
7. E-Clip
8. Wastegate Swing-Arm

**Figure 1 Turbocharger Actuator Components**

## **REPAIR PROCEDURE**

### **Removal of Wastegate Actuator**

1. Remove the turbocharger. Refer to section "Removal of Turbocharger" in the *EPA07 MBE 4000 Service Manual* (DDC-SVC-MAN-0026).
2. Loosen the jam nut on the wastegate adjusting rod.
3. Remove the two nuts securing the wastegate actuator to the actuator bracket.
4. Remove and discard the E-clip holding the adjusting rod onto the actuator swing-arm pin.
5. Remove the adjusting rod from the wastegate actuator swing-arm pin.

### **NOTE:**

There is significant tension on the actuator rod and swing arm. Take care not to damage the swing arm pin when removing the adjusting rod.

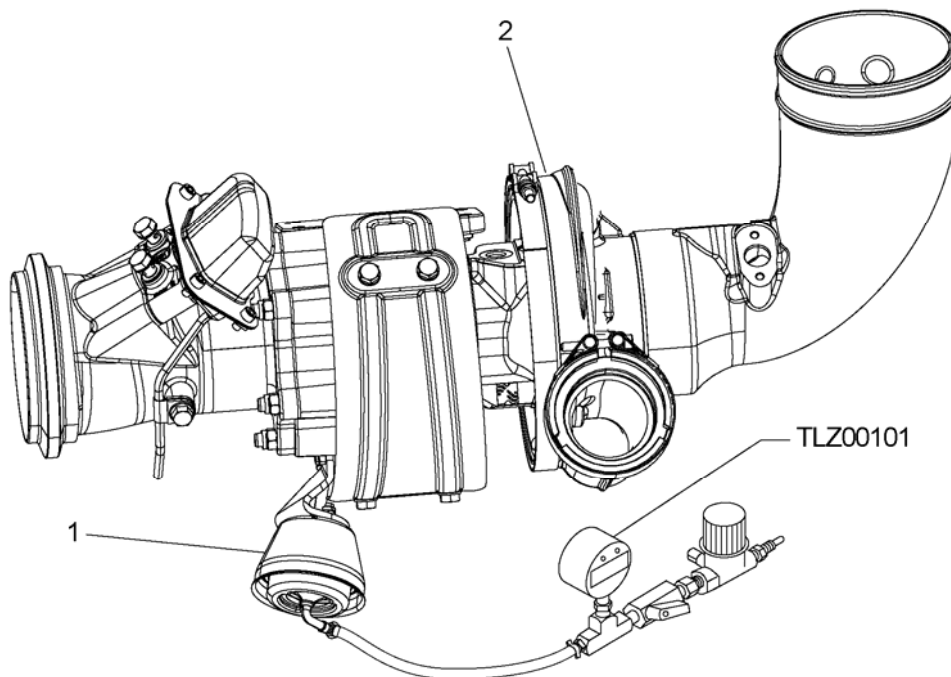
6. Remove the adjusting rod and jam nut from the actuator rod.
7. Remove the actuator and heat shield from the mounting bracket.

## Installation and Adjustment of Wastegate Actuator

### NOTE:

Proper installation and adjustment of the wastegate actuator requires the use of a highly accurate digital air pressure gauge, TLZ00101 (included in special tool kit TLZ00100) or equivalent.

1. With the adjusting rod and jam nut removed from the actuator rod, install the heat shield on the new wastegate actuator, and then install the wastegate actuator to the actuator bracket. Tighten nuts to 12 N·m (9 lb·ft).
2. Thread the jam nut and adjusting rod onto the actuator rod; do not tighten.
3. Attach regulated shop air to the digital pressure/regulator setup.
4. Adjust the regulator output knob until airflow stops.
5. Turn the digital pressure gauge (TLZ00101 or equivalent) on and set to “zero”.
6. Attach the digital pressure/regulator hose to the wastegate actuator port.
7. Connect the new wastegate actuator to the regulated air supply as shown in Figure 2. Secure all air hose connections, ensuring there are no leaks.



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1. Wastegate Actuator

2. Turbocharger

**Figure 2 Proper Setup of Regulated Air for Calibration**

8. SLOWLY adjust the air regulator output to 25.5 PSI (175 kPa).

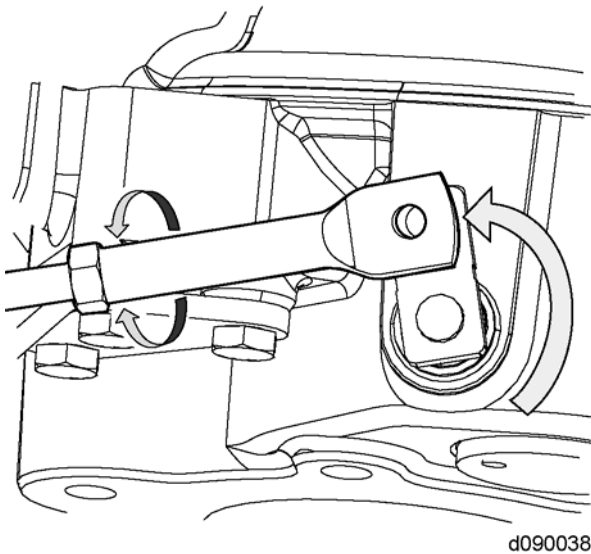
**NOTE:**

If during the adjustment, the pressure is exceeded, reduce the regulator output to 0 (zero) PSI and increase slowly again to 25.5 PSI (175 kPa)

9. With the wastegate in the fully closed position, adjust the free length of the adjusting rod by rotating it, so that the adjusting rod hole lines up with the wastegate swing-arm pin.

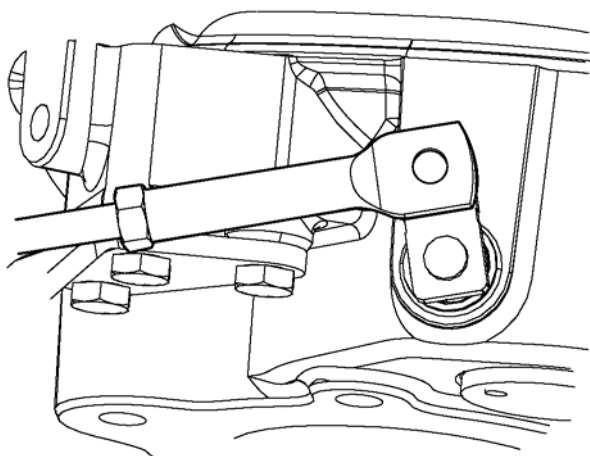
**NOTE:**

It is critical that the swing-arm remains in the closed position and the actuator rod is not moved in or out of the actuator during the adjustment. If the rod is moved in or out, it will slowly return to the correct position and must be re-adjusted. See Figure 3.



**Figure 3      Wastegate Swing-Arm in Closed Position**

10. Install the adjusting rod on the wastegate swing-arm pin. With the wastegate swing-arm in the fully closed position and the adjusting rod length properly set, the adjusting rod should be perfectly aligned with the swing-arm pin, see Figure 4. The adjusting rod should slip over the wastegate swing-arm pin nearly effortlessly when properly adjusted.



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**Figure 4 Proper Adjusting Rod Length**

11. Remove the adjusting rod from the wastegate swing-arm pin. Verify the correct adjusting rod length by reducing the regulated air pressure to 0 (zero) PSI and repeating steps 8 through 10 as necessary.
12. Install replacement E-clip onto the wastegate swing-arm pin.
13. Tighten the jam nut on the wastegate actuator adjusting rod, taking care not to rotate the actuator shaft. Torque jam nut to 5 N·m (4 lb·ft).
14. Disconnect regulated air supply.
15. Install the turbocharger. Refer to section "Installation of Turbocharger" in the EPA07 MBE 4000 Service Manual (*DDC-SVC-MAN-26*).
16. Verify the repair.



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