



TURBO AFTERMARKET Service Bulletin

New Retrofit Actuator for Ford V2S and HP Turbos

This bulletin outlines the introduction and service procedure of the new BorgWarner CBA (Compact Brushless Actuator) assembly, part number **59001107387**.

The original SRA (Smart Remote Actuator) Assembly, part number **476840** for the Ford 6.4 liter Powerstroke V2S turbo systems sold between 2008 and 2010 has been discontinued. The new retrofit actuator that fits into the same packaging and is identical in performance as the original actuator.

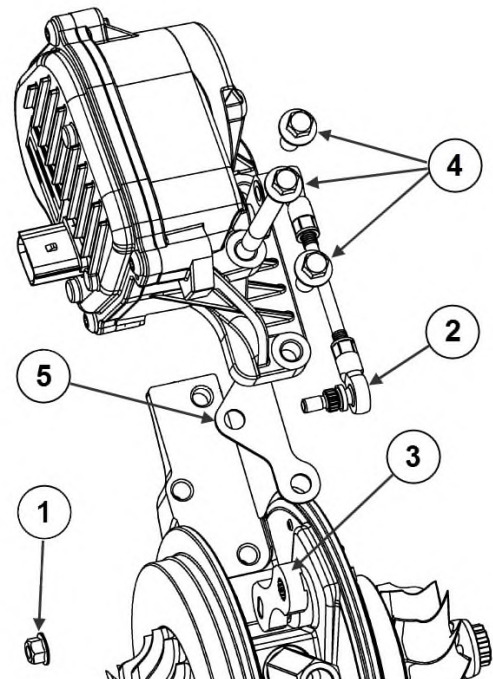
Retrofit Actuator Assembly

The new Retrofit Actuator Assembly consists of a BorgWarner CBA (Compact Brushless Actuator) with linkage, new actuator bracket, thermal spacer and mounting hardware. Installation of the Retrofit Actuator Assembly to the turbo requires removal of the original SRA Assembly and the specific installation sequence listed below.

Original SRA Assembly Removal

See *Figure 1*

1. Remove M6 nut (1) and separate linkage (2) from dog-bone (3)
2. Disconnect two coolant hoses from SRA
3. Disconnect electrical connector from SRA
4. Remove three M8 bolts (4)
5. Remove SRA Assembly and thermal spacer (5) from turbocharger
6. Properly discard SRA Assembly and hardware



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Before installing the Retrofit Actuator Assembly:

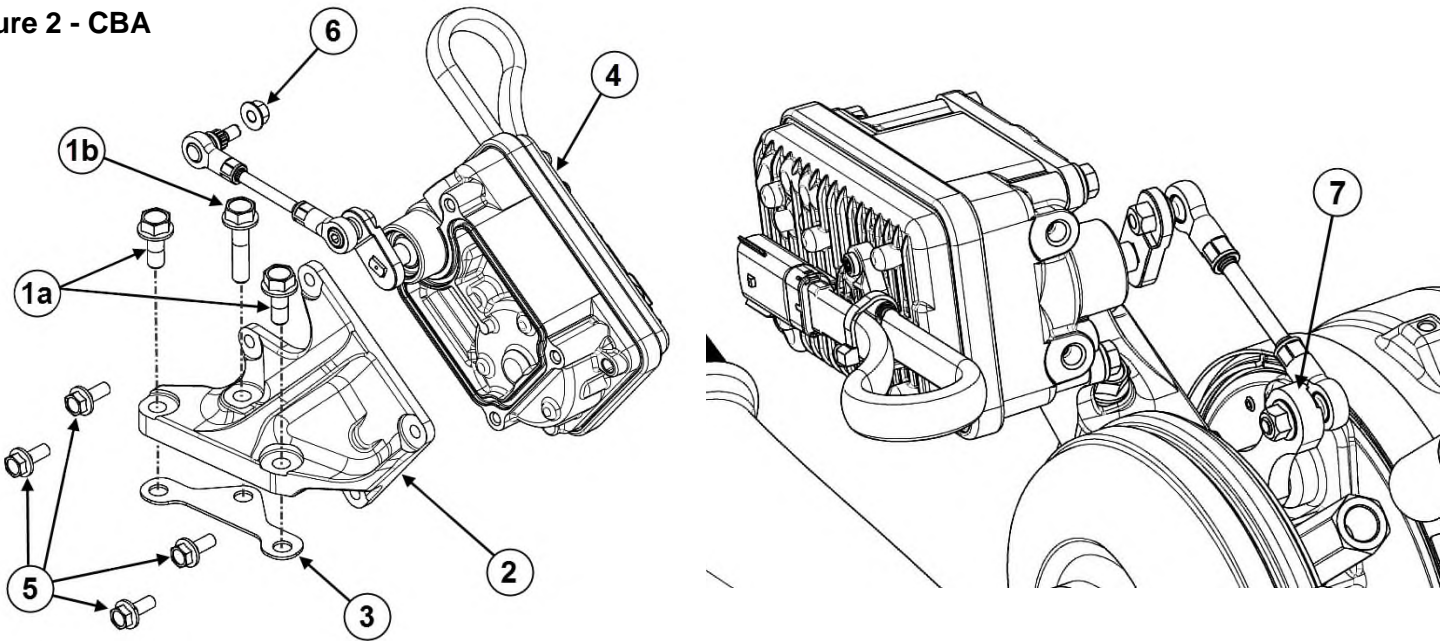
1. Rotate the dog-bone by hand to ensure the VTG mechanism moves freely
2. Ensure the mounting surfaces and threads are clean and free of debris

Retrofit Actuator Assembly Installation

See Figure 2

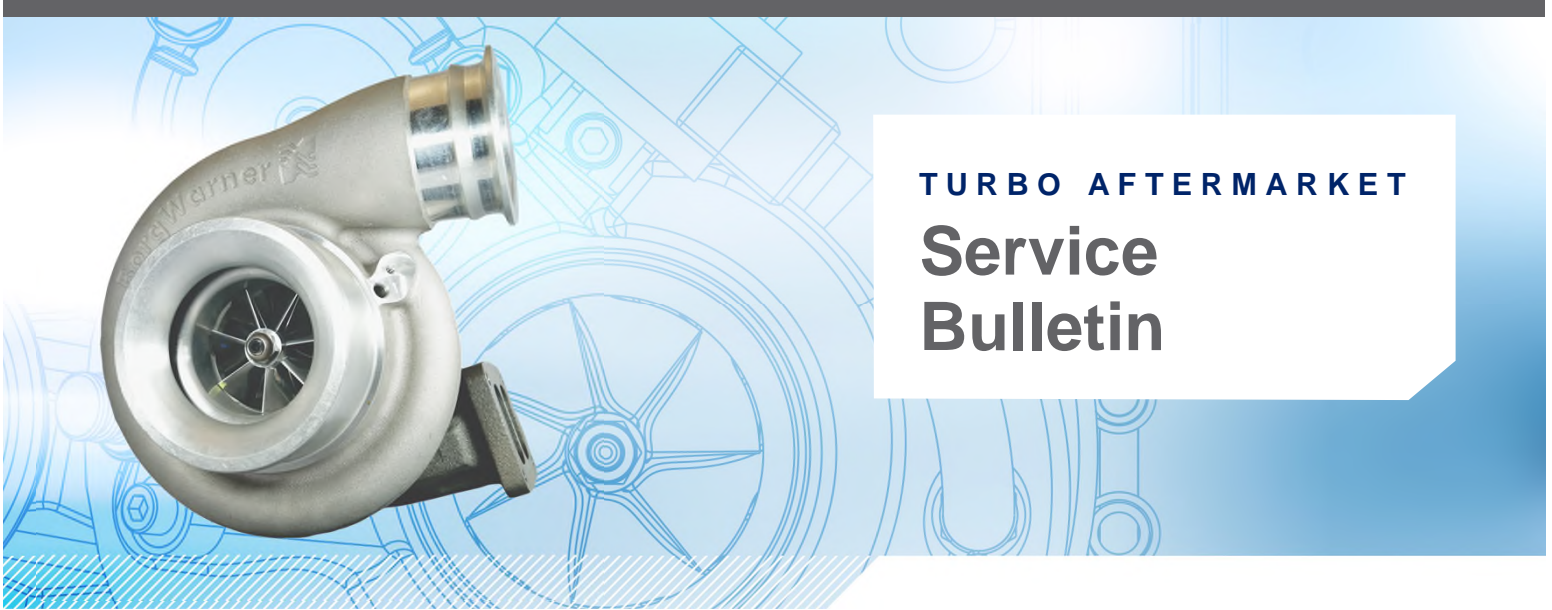
1. Mount the thermal spacer (3) and Actuator bracket (2) to the turbocharger bearing housing using the supplied M8 bolts (1a,1b), ensuring proper orientation of thermal spacer. Torque the three M8 bolts to 19±1 Nm.
2. Insert Actuator linkage end into dog-bone (7) and loosely secure with M6 nut (6) by hand
3. Install Actuator assembly (4) to bracket (2) using the four supplied M6 bolts (5) and tighten to 13.5±1.1 Nm
4. Tighten M6 nut (6) to 10.5±0.3 Nm

Figure 2 - CBA



| Item # | Description | Qty |
|--------|------------------------------|-----|
| 1a | Flange Head Bolt - M8 x 20mm | 2 |
| 1b | Flange Head Bolt - M8 x 35mm | 1 |
| 2 | Actuator bracket | 1 |
| 3 | Thermal spacer | 1 |
| 4 | Actuator assembly | 1 |
| 5 | Flange Head Bolt - M6 x 16 | 4 |
| 6 | Nut - M6 | 1 |

Please refer to BorgWarner Turbo Aftermarket **Service Bulletin S-03-17** for the coolant line re-routing procedures.



TURBO AFTERMARKET
**Service
Bulletin**

6.4 liter V2S and HP stage Actuator Replacement

New retrofit Actuator

We are pleased to announce the release of the Ford 6.4 liter Powerstroke V2S turbo system with the BorgWarner retrofit actuator. This new actuator effectively replaces the original turbo Smart Remote Actuator (SRA). The BorgWarner Contact Brushless Actuator (CBA) fits into the same packaging profile and has the same performance characteristics as the original actuator which is no longer available.

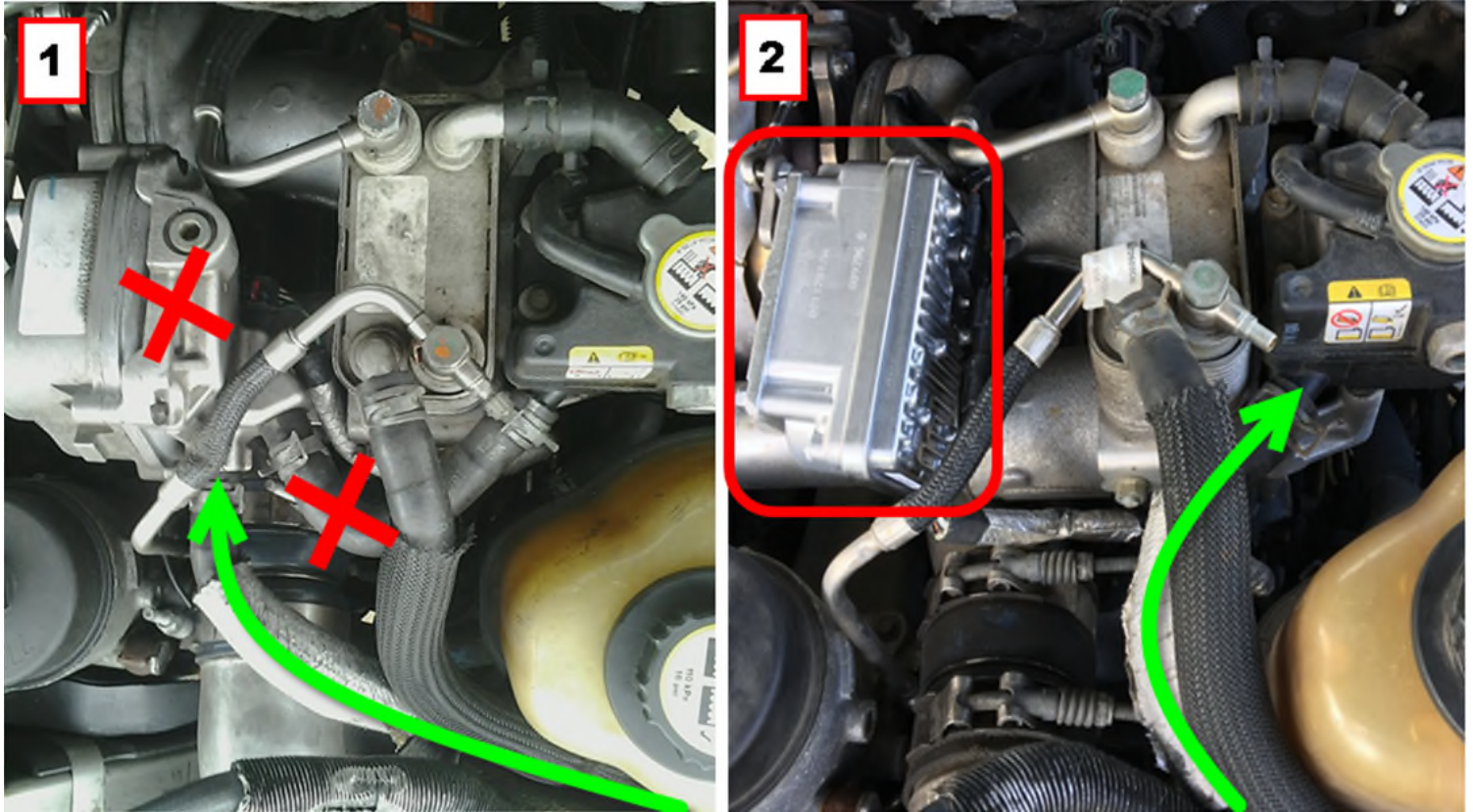
Cooling Circuit

The new CBA retrofit actuator does not require water cooling as did the original SRA. The existing coolant lines can be rerouted to bypass the actuator and complete the cooling circuit without modification by eliminating the actuator coolant block and the short hose that went from the old actuator coolant block to the reservoir.




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Photo #1 below shows the original actuator and coolant line arrangement and Photo #2 shows the new actuator with the coolant line rerouted directly to the coolant reservoir.



The coolant block attached to the original SRA actuator and the short hose connecting the coolant block to the reservoir will no longer be used. See red **X**'s in photo #1 above.

The shielded hose marked with the green  will move from the coolant block connection shown in photo #1 and go directly to the reservoir connection as shown in photo #2.

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Calibration

There is no external calibration procedure required for the new retrofit CBA actuator. The new actuator will automatically calibrate the first time it is powered up. Key on powers up the actuator and it moves to a safe position at 20% of full travel. It waits at this position for the ECU to provide information that will allow the actuator to execute a complete span sweep to learn its limits.

Contaminants in the engine oil

It is common for solid contaminants to build up in the 6.4 liter bearing systems. Not only in the turbo but in the oil cooler, and the oil lines and fittings supplying oil to the turbos. Please check the oil system to be sure it is free of solid contaminants before installing a new turbo system. These solid contaminants are carried to the turbo bearing system and deposited there causing premature bearing and turbo failure. Checking the system for debris before connecting the oil lines to the turbo will help protect your investment.

Final Assembly instructions

