DETROIT™
DEMAND PERFORMANCE™

No.: 14 TS-5

March 7, 2014

TO: Service Locations

FROM: Service Systems Development

SUBJECT: **Replacing Damaged Aftertreatment Sensor Bosses**

## ISSUE

If not properly removed, the Aftertreatment Device (ATD) sensor bosses can be damaged when replacing a failed sensor. Replacement of the ATD is no longer necessary if the sensor boss threads are damaged during service. Detroit™ has released all ATD sensor bosses to service along with the required Tungsten Inert Gas (TIG) welding rods to make repairs.

## REQUIRED ACTION

The repair requires TIG welding and should be done by an experienced welding technician.

Use the tables and illustrations below to identify the correct sensor boss, hole saw and arbor needed to make the repair. The required TIG welding rod part numbers are also provided in Table 1. Either of the two welding rod part numbers are acceptable for this repair and can be ordered.

| Sensor Boss Description | Quantity | Part Number |
|---|---|---|
| Pressure Sensor Boss | 1 | 23539604 |
| Temperature Sensor Boss M12 | 1 | 23539605 |
| Temperature Sensor Boss M14 | 1 | 23539606 |
| Temperature Sensor Boss M16 | 1 | 23539607 |
| Nox Sensor Boss M20 | 1 | 23539608 |
| 36 Inch Arcos™ 409 TIG Welding Rod | 3 | 23539448 |
| 36 Inch Arcos™ 410 TIG Welding Rod | 3 | 23539450 |

**Table 1 –Sensor Boss and Weld Rod Part Numbers**

To remove the sensor boss, refer to Table 2 to identify the correct size hole saw diameter and part number.

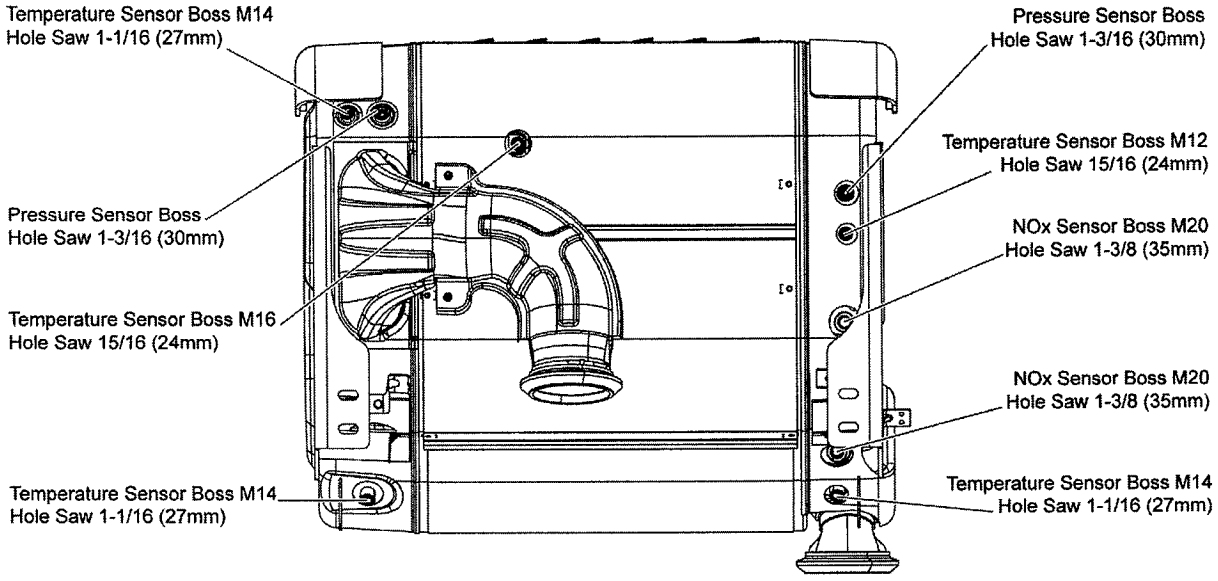
| Sensor Boss | Carbide Tip Hole Saw Size | DDC Part Number | Granger Part Number |
|---|---|---|---|
| Pressure Sensor Boss | 1-3/16 (30mm) | 23539656 | 2CDD5 |
| Temperature Sensor Boss M12 | 15/16 (24mm) | 23539654 | 2CDD3 |
| Temperature Sensor Boss M14 | 1-1/16 (27mm) | 23539655 | 2CDD4 |
| Temperature Sensor Boss M16 | 15/16 (24mm) | 23539654 | 2CDD3 |
| NOx Sensor Boss M20 | 1-3/8 (35mm) | 23539658 | 4XG46 |

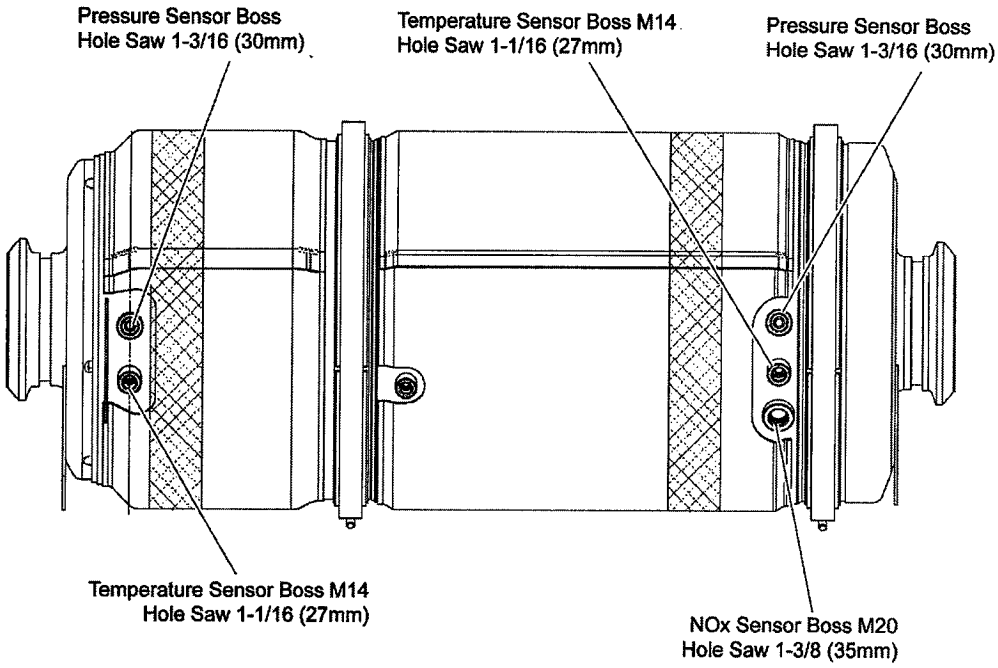
**Table 2 – Hole Saw Diameter and Part Numbers**

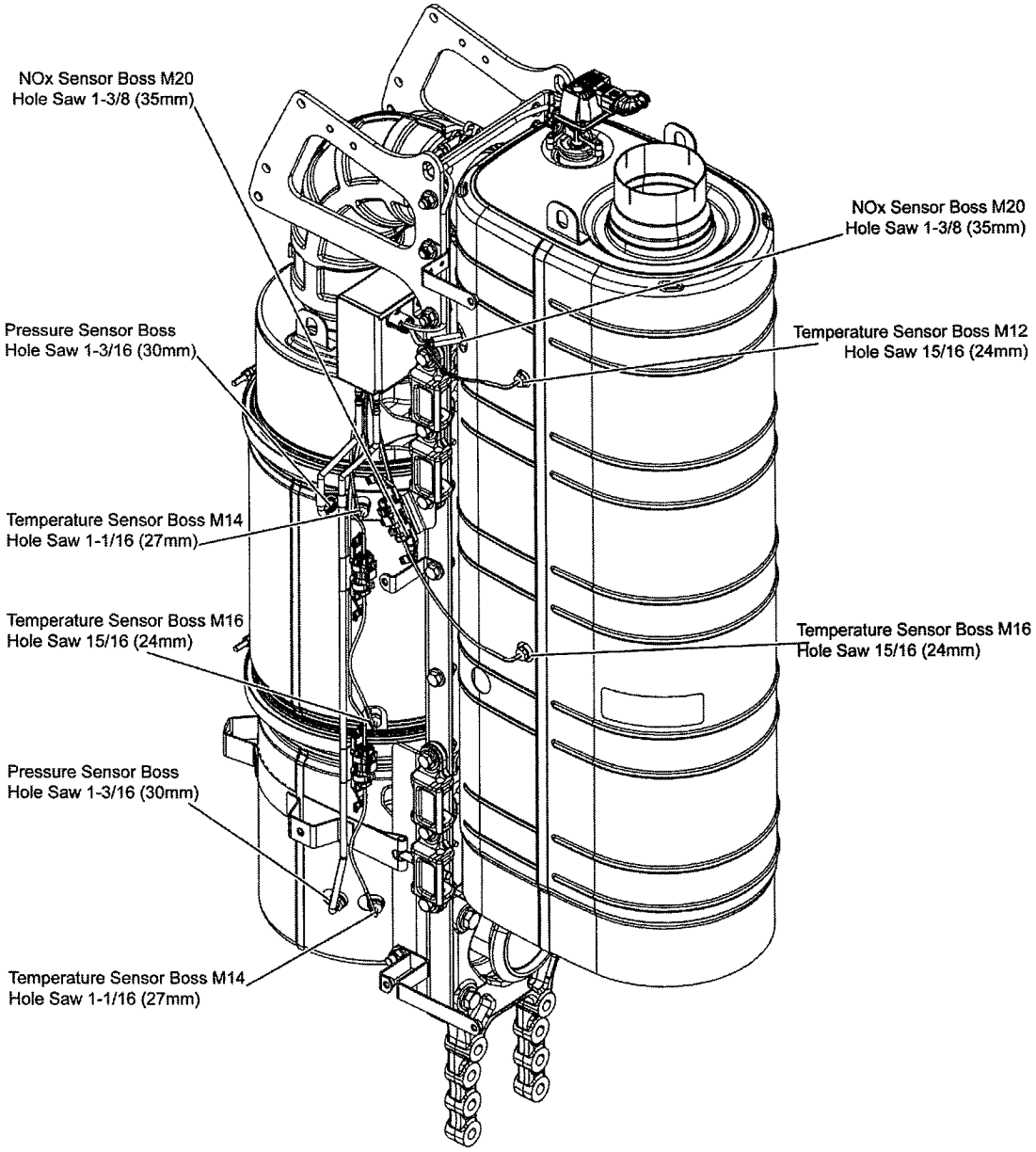
Use Table 3 to select the correct arbor/pilot drill for the hole saw selected.

| Carbide Tip Hole Saw Size | DDC Arbor Part Number | Granger Arbor Part Number |
|---|---|---|
| 1-3/16 (30mm) | 23539657 | PN-4X120 |
| 15/16 (24mm) | | |
| 1-1/16 (27mm) | | |
| 1-3/8 (35mm) | 23539659 | PN-4X125 |

**Table 3 – Arbor Part Numbers**




Pressure Sensor Boss
Hole Saw 1-3/16 (30mm)
Temperature Sensor Boss M14
Hole Saw 1-1/16 (27mm)
Pressure Sensor Boss
Hole Saw 1-3/16 (30mm)
Temperature Sensor Boss M14
Hole Saw 1-1/16 (27mm)
NOx Sensor Boss M20
Hole Saw 1-3/8 (35mm)




## REPAIR PROCEDURE

1. Remove the Aftertreatment Device (ATD). Refer to the appropriate removal procedure in Power Service Literature.

   **Notice: Always verify the new boss threads on the sensor before welding.**

2. If the boss is shielded, as in Figure 1 (below), the heat shielding will need to be removed to gain access to the damaged boss for removal and installation. Figure 2 illustrates a sensor boss not surrounded with a heat shield.

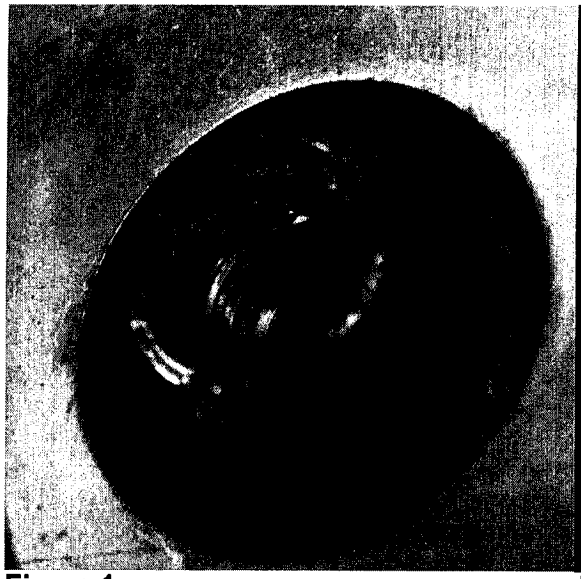


**Figure 1**

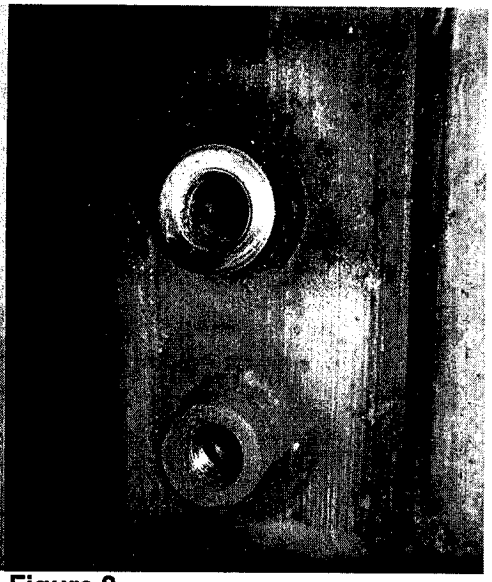


**Figure 2**

3. Use a die grinder to remove the shielding around the damaged sensor boss. The shielding should be removed as neatly as possible. It will need to be welded back in place once the sensor boss is replaced. See Figure 3.

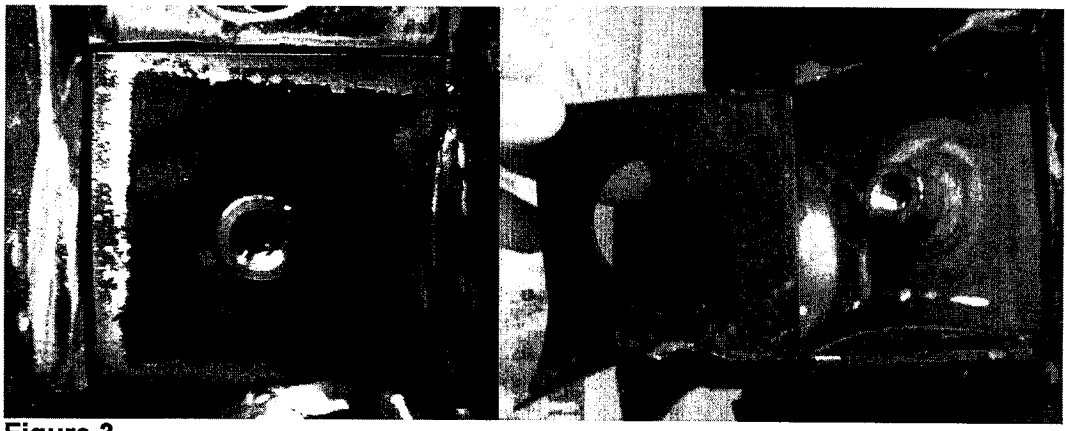


**Figure 3**

4. Use the sensor boss to pilot the hole saw. Start cutting the sensor boss weld; check the depth of cut frequently to prevent the damaged sensor boss from falling inside the Aftertreatment device. See Figure 4.

**Figure 4**

**Notice: If the boss falls inside the Aftertreatment Device, it must be removed**

5. Clean off all metal shavings from around the sensor boss hole; avoid chips from entering the Aftertreatment device. See Figure 5.

**Figure 5**

6. Verify the new sensor boss fits the sensor before welding in place. Tack weld the sensor boss in place, then complete the weld around the boss. See Figure 6 for an example of a newly welded sensor boss.

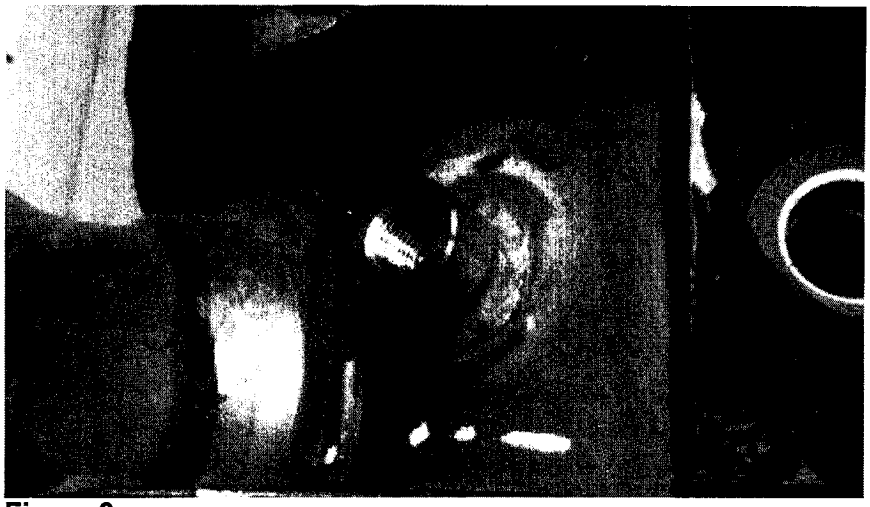


**Figure 6**

7. If a section of the heat shield was removed, tack weld the heat shield in place. See Figure 7.

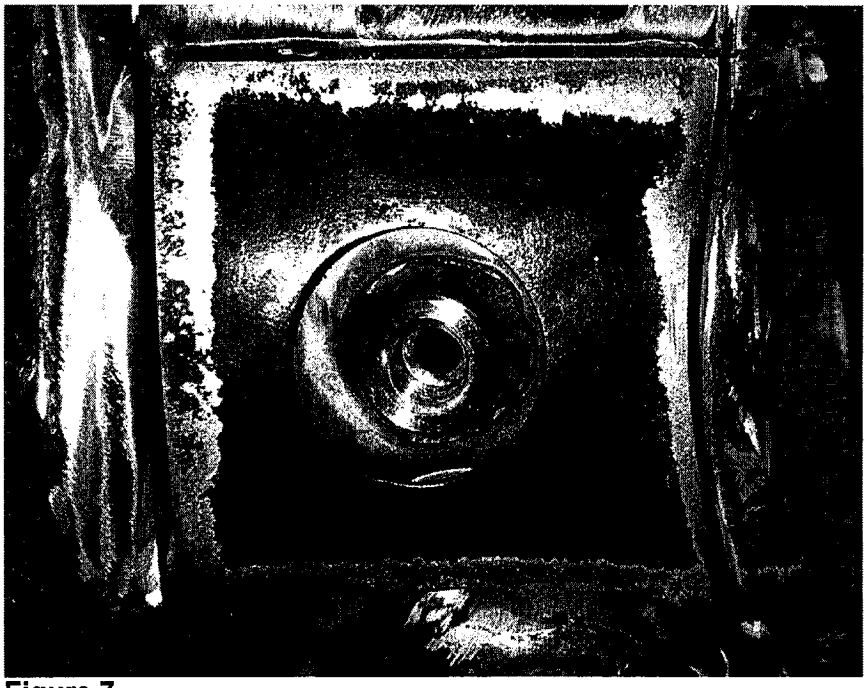


**Figure 7**

8. Once the heat shield is properly tack welded in place, complete the welding. See Figure 8.

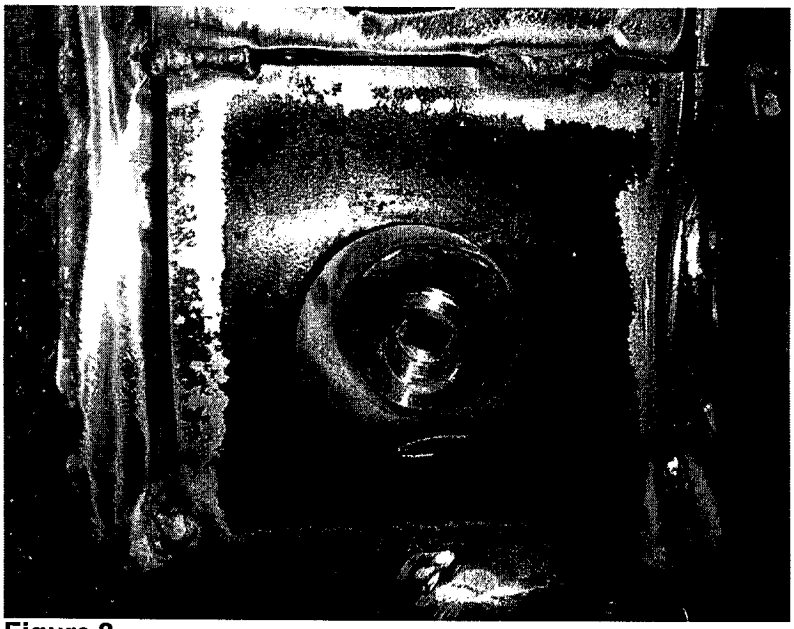


**Figure 8**

## CONTACT INFORMATION

Please contact the Detroit™ Customer Support Center at 800-445-1980 or email csc@daimler.com if you have any questions.