

The Facts About Oxygen Sensors

The Basics

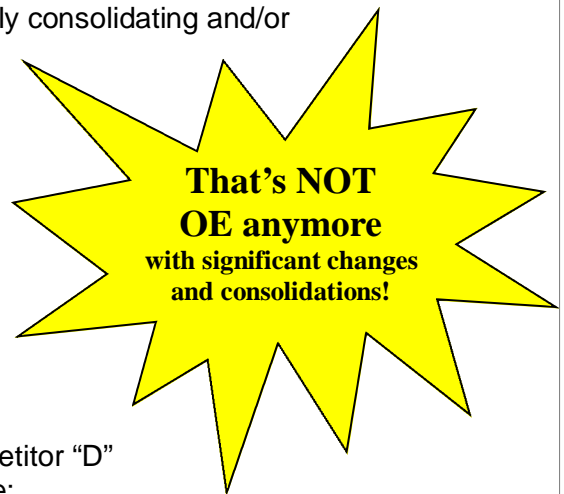
- Oxygen (O₂) Sensors are the primary devices that measure the proportion of oxygen in emission gases
- O₂ sensors compare oxygen inside the exhaust manifold and air outside the engine
- Proper O₂ operation is critical for vehicle emissions, fuel economy and engine performance
- **ACDelco O₂ Sensors are the ONLY OES O₂ sensors recommended by GM engineers for GM vehicles**
 - **Each O₂ Sensor is engineered for its specific engine type**



ACD #213-819 GM#12562943

The Competitive Situation

- Some competitors are claiming to use OE designs when they are actually consolidating and/or changing key components such as:
 - Element type
 - Heater type
 - Cover design
 - Significant wiring harness length differences
- Over-consolidation of sensors no longer test to OE specifications, can be detrimental to emission controls and even cause premature failure of engine components such as:
 - Increased nitrogen dioxide (NO₂) emissions
 - Higher exhaust gas temperature
 - Misfires and loss of engine power
 - Overheating of catalytic converter
- GM Engineering compared top moving ACDelco O₂ Sensors with competitor "D"
 - Competitor "D" has consolidated many of their parts, for example:
 - Competitor "D"'s own catalog reveals that 1 part fits up to 6 GM part number. That's not an OE specification anymore! See backside for other specific testing observations.



O₂ Sensor "Need to Knows"

Wiring Harness Lengths

- Excess wire can be exposed to extreme heat and abrasion
- GM engineering specified wire length to maximize performance and reduce opportunity for premature wire failure

Element Type

- GM uses several element types which are validated to engine specific calibrations
- A single element type cannot be exchanged across multiple applications and may impact performance

Heater Type

- GM uses several heater types which are validated to engine specific calibrations
- A single heater type cannot be exchanged across multiple applications and may impact performance

Cover Design

- GM uses several covers designed for specific flow levels across the tip of the element. The covers are calibrated for unique flow rates and provide water/moisture protection to the element

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Over-Consolidation Examples

ACDelco Part Number	GM Part Number	Model Year	Make	Competitor "D" Cross	Harness Length	Resistance as measured Ohms Ω	Element type
				234-4668	400	5.5	unknown
213-3237	12594452	2006-2012	Chev, GMC, Buick, Pont, Sat	234-4668	310	5.1	SP3
213-1687	12573167	2005	Chev, GMC, Buick, Saab	234-4668	400	5.3	SP2
213-2827	12590790	2004-2009	Chev, Pont	234-4668	310	5.3	P
213-1568	12569429	2004-2012	Chev, Cad, Pont, Sat	234-4668	310	5.3	SP3
213-3528	12584925	2006-2011	Chev, GMC, Sat	234-4668	310	5.3	SP3
213-1702	12587785	2003-2005	Chev, GMC, Cad	234-4668	375	5.3	SP2
				234-4650	375	15.8	unknown
213-1527	12567127	2003-2004	Chev, Buick, Pont	234-4650	390	15.7	YT
213-817	12561776	2000-2002	Chev, GMC	234-4650	375	15.7	P
213-819	12562943	2000-2002	Chev, GMC, Cad	234-4650	375	15.7	P
213-802	12559850	2000-2004	Chev, Buick, Pont, GMC, Cad, Olds	234-4650	310	15.7	P
				234-4646	300	16.6	unknown
213-1553	12574218	2004-2009	Chev, Buick, Pont	234-4646	310	9.5	C6
213-1553	19209814	2004-2009	Chev, Buick, Pont	234-4646	310	16.6	oSPO
213-968	12568234	2002-2010	Chev, Olds, Pont, Sat	234-4646	245	5.7	LD
				234-4012	375	6.3	unknown
AFS75	19178930	1993-2003	Chev, Buick, Pont, GMC, Cad, Olds	234-4012	305	6.2	OSV
AFS138	19178961	1999-2002	Chev, GMC	234-4012	370	6.2	OSV
AFS105	19178918	1996-2002	Chev, GMC, Cad, Olds	234-4012	305	6.2	OSV
				234-4087	300	6.6	unknown
213-1681	19178922	2004	Chev, Buick	234-4087	265	6.6	OSV
AFS141	19178747	1999-2003	Chev, Olds, Buick, Pont	234-4087	265	6.6	OSV
AFS123	19178924	1996-2004	Chev, Buick, Pont, GMC, Cad, Olds	234-4087	305	6.6	OSV
				234-4019	380	6.5	unknown
AFS136	19178942	1999-2000	Chev, GMC	234-4019	370	6.2	OSV
AFS93	19178934	1996-2002	Chev, GMC, Cad	234-4019	305	6.2	OSV
213-1148	25333812	2001-2007	Chev, GMC	234-4407	375	15.1	C6

O2 Sensor Selling tips

Don't jeopardize vehicle emissions (and possibly more) by using sensors that CLEARLY do NOT meet OES specifications!

ACDelco O2 Sensors are PERFECT FOR GM

- **June 2012 Price Reposition! Now even more competitive for OES sensors!**
See bulletin 12D-065 June 1, 2012
- **Cross references to major competitors are available in EPIC**
- **Make sure ACDelco O2 Sensors are loaded into electronic catalog systems in the First Position**
- **See article in the May/June issue of Tech Connect for additional technical O2 sensor information**