

**DATE: MAY 27, 2021**

**MANUFACTURERS ADVISORY CORRESPONDENCE (MAC) 2021-01**

**TO: ALL MANUFACTURERS OF**

- PASSENGER CARS (PC)
- LIGHT-DUTY TRUCKS (LDT)
- MEDIUM-DUTY VEHICLES AND ENGINES USED IN SUCH VEHICLES (MDV/E)
- ENGINE PACKAGES FOR USE IN LIGHT-DUTY SPECIALLY CONSTRUCTED VEHICLES (SPCN)
- ENGINE PACKAGES FOR USE IN LIGHT-DUTY SPECIALLY-PRODUCED MOTOR VEHICLES (SPMV)
- OFF-ROAD LARGE SPARK-IGNITION ENGINES (LSIE)
- OFF-HIGHWAY RECREATIONAL VEHICLES (OHRV)
- ALTERNATIVE FUEL RETROFIT (AFR) SYSTEMS FOR ON-ROAD VEHICLES AND ENGINES (ONR VEHICLE/ENGINE) INCLUDING PC, LDT, MDV/E, AND HEAVY-DUTY ENGINES AND VEHICLES EQUIPPED WITH THESE ENGINES (HDE/V)
- ALL OTHER INTERESTED PARTIES

**SUBJECT: Cost Limit for High-Priced Warranted Parts for New 2022 Model-Year (MY) Passenger Cars (PC), Light-Duty Trucks (LDT), Medium-Duty Vehicles and Engines Used in These Vehicles (MDV/E), Engine Packages for Use in Light-Duty Specially Constructed Vehicles (SPCN), Engine Packages for Use in Light-Duty Specially-Produced Motor Vehicles (SPMV), Off-Road Large Spark-Ignition Engines (LSIE), Off-Highway Recreational Vehicles (OHRV), and Alternative Fuel Retrofit (AFR) Systems Certified During Calendar Years (CY) 2021 and 2022 for Installation on In-Use MY 1994 and Subsequent On-Road Vehicles and Engines (ONR Vehicle/Engine) Including PC, LDT, MDV/E and Heavy-Duty Engines and Vehicles Equipped with These Engines (HDE/V)**

**Enclosed with this letter is a Manufacturers Advisory Correspondence (MAC) that identifies the cost limit for high-priced warranted parts for new MY 2022 PC, LDT, MDV/MDE, SPCN, SPMV, LSIE, and OHRV vehicles and engines, and for AFR systems certified during CY 2021 and CY 2022 for installation on in-use MY 1994 and subsequent ONR Vehicles/Engines. Also included is identification of the highest-cost metropolitan area of California for the purpose of calculating labor costs when determining the total replacement cost of a warranted part.**

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Tables 1, 2, and 3 at the end of this MAC are a summary of these cost limits for new MY 2022 PC, LDT, MDV/E, SPCN, SPMV, LSIE, and OHRV, and for AFR systems for in-use MY 1994 and subsequent PC, LDT, MDV/E, and HDV/E.

If you have any questions regarding LSIE warranty matters, please contact Mr. Byron Ng, Air Pollution Specialist, Off-Road Spark-Ignited Engine Certification Section, at (626) 459-4312 or by e-mail at [Byron.Ng@arb.ca.gov](mailto:Byron.Ng@arb.ca.gov). For questions regarding warranty matters for new MDE (and MDV into which such MDE are installed), please contact Mr. Mel Capistrano, Air Resources Engineer, Compression-Ignition and Heavy-Duty Certification Section, at (626) 350-6568 or by e-mail at [Mel.Capistrano@arb.ca.gov](mailto:Mel.Capistrano@arb.ca.gov). For questions regarding warranty matters for MY 1994+ AFR systems for HDE/V and MDE (and MDV into which such MDE are installed), please contact Mr. Ali Barahmani, Air Resources Engineer, Aftermarket Diesel and Off-Road Section, at (626) 459-4407 or by e-mail at [Ali.Barahmani@arb.ca.gov](mailto:Ali.Barahmani@arb.ca.gov). For questions regarding parts that upon failure must illuminate the MIL and be covered by the emissions warranty, please contact Mr. John Ellis, Manager, Gasoline On-Board Diagnostics Section, at (626) 350-6516 or by e-mail at [John.Ellis@arb.ca.gov](mailto:John.Ellis@arb.ca.gov), or Mr. Tom Montes, Manager, Diesel On-Board Diagnostics Section, at (626) 575-6777 or by e-mail at [Thomas.Montes@arb.ca.gov](mailto:Thomas.Montes@arb.ca.gov). For all other matters in this MAC, please contact Mr. Steven Hada, Air Resources Engineer, On-Road Light-Duty Certification Section, at (626) 575-6641 or by e-mail at [Steven.Hada@arb.ca.gov](mailto:Steven.Hada@arb.ca.gov).

Sincerely,



**Allen Lyons, Chief**  
**Emissions Certification and Compliance Division**

**State of California  
CALIFORNIA AIR RESOURCES BOARD**

**MANUFACTURERS ADVISORY CORRESPONDENCE (MAC) 2021-01**

**SUBJECT:**           **Cost Limit for High-Priced Warranted Parts for New 2022 Model-Year (MY) Passenger Cars (PC), Light-Duty Trucks (LDT), Medium-Duty Vehicles and Engines Used in These Vehicles (MDV/E), Engine Packages for Use in Light-Duty Specially Constructed Vehicles (SPCN), Engine Packages for Use in Light-Duty Specially-Produced Motor Vehicles (SPMV), Off-Road Large Spark-Ignition Engines (LSIE), Off-Highway Recreational Vehicles (OHRV), and Alternative Fuel Retrofit (AFR) Systems Certified During Calendar Years (CY) 2021 and 2022 for Installation on In-Use MY 1994 and Subsequent On-Road Vehicles and Engines (ONR Vehicle/Engine) Including PC, LDT, MDV/E and Heavy-Duty Engines and Vehicles Equipped with These Engines (HDE/V)**

**APPLICABILITY:** - New MY 2022 PC, LDT, MDV/E, SPCN, SPMV, LSIE, and OHRV  
- AFR Systems Certified During CY 2021 and CY 2022 for Installation on In-Use MY 1994 and Subsequent PC, LDT, MDV/E, and HDV/E

**REFERENCES:**    1.   **California Health and Safety Code Section 43205 [HSC § 43205]**

                          2.   **Emission Control System Warranty Regulations [Title 13, California Code of Regulations, Sections 2035 et seq. (13 CCR § 2035 et seq.)]**

                          3.   **Zero-Emission Vehicle Standards for 2018 and Subsequent Model Year Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles [13 CCR § 1962.2(c)]**

                          4.   **Defects Warranty for 2001 and Later Off-Road Large Spark-Ignition Engines [13 CCR § 2435]**

                          5.   **Defects Warranty Requirements for Evaporative Emission Control Systems of 2018 and Later Model Year Off-Highway Recreational Vehicles [13 CCR § 2419.1 et seq.]**

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6. **“California Certification And Installation Procedures For Alternative Fuel Retrofit Systems For 1994 Through 2003 Model Years And For 1994 Through 2003 Model Year Motor Vehicle Retrofit Systems Certified For Emission Reduction Credit”, as last amended August 8, 2014, (1994-2003 AFR System Certification and Installation Procedures) incorporated by reference in 13 CCR § 2030 and § 2031.**
7. **“California Certification And Installation Procedures For Alternative Fuel Retrofit Systems For 2004 And Subsequent Model Year On-Road Motor Vehicles And Engines”, adopted August 8, 2014, (2004+ AFR System Certification and Installation Procedures) incorporated by reference in 13 CCR § 2030 and § 2031.**
8. **“Defects Warranty Requirements for Certified Engine Packages for Use in Specially Constructed Vehicles” [13 CCR § 2214]**
9. **“Defects Warranty Requirements for Certified Engine Packages for Use in Specially-Produced Motor Vehicles” [13 CCR § 2209.6]**
10. **Manufacturers Advisory Correspondence 2017-03 available at this web link.**

[https://ww2.arb.ca.gov/sites/default/files/2021-03/mac1703\\_R.pdf](https://ww2.arb.ca.gov/sites/default/files/2021-03/mac1703_R.pdf)

### **POLICY:**

1. **Identification of the Highest-Cost Metropolitan Area of California for New MY 2022 PC, LDT, MDV/E, SPCN, SPMV, LSIE, and OHRV, and for AFR Systems Certified During CY 2021 And CY 2022 For Installation On MY 1994 And Subsequent ONR Vehicle/Engine.**

According to HSC § 43205(b), 13 CCR § 2037(c), 13 CCR § 2214(c), 13 CCR § 2209.6(c), 13 CCR § 2435(b), 13 CCR § 2419.1(c), the 1994-2003 AFR System Certification And Installation Procedures, and the 2004+ AFR System Certification And Installation Procedures, as applicable, the high-priced warranted parts list is based on a periodically revised cost limit as calculated for the highest-cost metropolitan area of California. For MY 2022, and CY 2021 and CY 2022 as applicable for AFR systems, the highest-cost metropolitan area of California is determined to be the San Jose-Sunnyvale-Santa Clara area.

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The high-priced warranted parts lists should reflect actual part costs to owners at the dealership, including dealer markup. The labor cost, as part of a manufacturer's determination of the total replacement cost of a warranted part, is to be based on the manufacturer's labor rate in the identified highest-cost metropolitan area or, if the manufacturer has no dealerships in this area, a comparable alternative area in California.

2. a. Cost Limit for High-Priced Warranted Parts for New MY 2022 PC, LDT, MDV/E, SPCN, SPMV, and LSIE.

According to 13 CCR § 2037(c), § 2214(c), §2209.6, and § 2435(b), as applicable, the cost limit for high-priced warranted parts for MY 2022 PC, LDT, MDV/E, SPCN, SPMV, and LSIE is calculated using the annual average nationwide urban Consumer Price Index (CPI) for 2020, i.e., the calendar year two years prior to the model-year for which the cost limit is being calculated. This CPI is published by the U.S. Bureau of Labor Statistics. Rounded to the nearest ten dollars, the MY 2022 cost limit is \$660, as calculated below:

$$\begin{aligned}\text{MY 2022 Cost Limit} &= \$300 \times (\text{CY 2020 CPI}/\text{baseline CPI}_{1988}) \\ &= \$300 \times (258.8/118.3) \\ &= \$660\end{aligned}$$

b. Cost Limit for High-Priced Warranted Parts for New MY 2022 OHRV Certified to the New Vehicle-Based Evaporative Emission Standards in 13 CCR § 2418.

According to 13 CCR § 2419.1(c), the cost limit for high-priced warranted parts for MY 2022 OHRV evaporative emission control systems is calculated using the annual average nationwide urban CPI for 2020, i.e., the calendar year two years prior to the model-year for which the cost limit is being calculated. This CPI is published by the U.S. Bureau of Labor Statistics. Rounded to the nearest ten dollars, the MY 2022 cost limit is \$220, as calculated below:

$$\begin{aligned}\text{MY 2022 Cost Limit} &= \$200 \times (\text{CY 2020 CPI}/\text{baseline CPI}_{2016}) \\ &= \$200 \times (258.8/240.0) \\ &= \$220\end{aligned}$$

c. Cost Limit for High-Priced Warranted Parts for AFR Systems Certified During CY 2021 and CY 2022 for Installation on In-Use MY 2004 and Subsequent ONR Vehicle/Engine (2004+ AFR Systems).

According to the 2004+ AFR System Certification and Installation Procedures, the cost limits for high-priced warranted parts for 2004+ AFR systems certified during CY 2021 and CY 2022 are calculated using the annual average nationwide urban CPI for 2019 and 2020, respectively, i.e., the calendar year

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two years prior to the calendar year for which the cost limit is being calculated. This CPI is published by the U.S. Bureau of Labor Statistics. Rounded to the nearest ten dollars, the CY 2021 and CY 2022 cost limits are \$650 and \$660, respectively, as calculated below:

$$\begin{aligned}\text{CY 2021 Cost Limit} &= \$300 \times (\text{CY 2019 CPI}/\text{baseline CPI}_{1988}) \\ &= \$300 \times (255.6/118.3) \\ &= \$650\end{aligned}$$

$$\begin{aligned}\text{CY 2022 Cost Limit} &= \$300 \times (\text{CY 2020 CPI}/\text{baseline CPI}_{1988}) \\ &= \$300 \times (258.8/118.3) \\ &= \$660\end{aligned}$$

d. Cost Limit for High-Priced Warranted Parts for AFR Systems Certified During CY 2021 and CY 2022 for Installation on In-Use MY 1994-2003 ONR Vehicle/Engine (1994-2003 AFR Systems).

According to the 1994-2003 AFR System Certification and Installation Procedures, the cost limits for high-priced warranted parts for 1994-2003 AFR systems certified during CY 2021 and CY 2022 are calculated using the annual average California CPI for 2019 and 2020, i.e., the calendar year two years prior to the certification's calendar year for which the cost limit is being calculated. This CPI is published by the U.S. Bureau of Labor Statistics. Rounded to the nearest ten dollars, the CY 2021 and CY 2022 cost limits are \$690 and \$700, respectively, as calculated below:

$$\begin{aligned}\text{CY 2021 Cost Limit} &= \$300 \times (\text{CY 2019 CPI}/\text{baseline CPI}_{1988}) \\ &= \$300 \times (280.6/121.9) \\ &= \$690\end{aligned}$$

$$\begin{aligned}\text{CY 2022 Cost Limit} &= \$300 \times (\text{CY 2020 CPI}/\text{baseline CPI}_{1988}) \\ &= \$300 \times (285.3/121.9) \\ &= \$700\end{aligned}$$

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3. **Guidance on meeting the requirements for the items listed below may be found in MAC 2017-03, available at this web link.**

[https://ww2.arb.ca.gov/sites/default/files/2021-03/mac1703\\_R.pdf](https://ww2.arb.ca.gov/sites/default/files/2021-03/mac1703_R.pdf)

- **The high-priced warranted parts must be documented in the manufacturer's certification application. For non-OHRV, parts up to \$100 below the cost limit must be listed. For OHRV, parts up to \$50 below the cost limit must be listed. Ref. MAC 2017-03, section 3.**
- **For high-priced parts consistently above the cost limit, cost documentation may be waived. Ref. MAC 2017-03, section 4.**
- **For a part that is integral to a larger assembly, the cost limit shall be determined based on the repair or replacement of the entire assembly. Ref. MAC 2017-03, section 5.**
- **A cost limit for MY 2023 and later vehicles and engines may be proposed by the manufacturer before a newer cost limit is determined by CARB. Ref. MAC 2017-03, section 6.**
- **The cost limit listed in this MAC under 2.a. is not applicable to transitional zero-emission vehicles, or range extended battery electric vehicles (BEVx). All emissions-related parts for these vehicles are warranted for their useful life. Ref. MAC 2017-03, section 7.**
- **The cost limit listed in this MAC under 2.a. is not applicable to vehicles that generate additional NMOG+NO<sub>x</sub> fleet average credits. All emissions-related parts for these vehicles are warranted for their useful life. Ref. MAC 2017-03, section 8.**
- **The cost limits for AFR systems are determined by the calendar year in which certification is granted. Ref. MAC 2017-03, section 9.**
- **A malfunctioning part that illuminates the malfunction indicator light (MIL) must be identified as emissions related, and is covered under warranty within the warranty period. Ref. MAC 17-03, section 10.**

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**TABLE 1**  
**Cost Limits For High-Priced Warranted Parts As Applicable For New**  
**PC, LDT, MDV/E, SPCN, SPMV, and LSIE<sup>(3)</sup>**

Model Year <sup>(1)</sup>	Cost Limit
1991	\$310
1992	\$330
1993	\$350
1994	\$360
1995	\$370
1996	\$380
1997	\$390
1998	\$400
1999	\$410
2000	\$410
2001	\$420
2002	\$440
2003	\$450
2004	\$460
2005	\$470
2006	\$480
2007	\$500
2008	\$510
2009	\$530
2010	\$550
2011	\$540
2012	\$550
2013	\$570
2014	\$580
2015	\$590
2016	\$600
2017	\$600
2018	\$610
2019	\$620
2020	\$640
2021	\$650
<b>2022</b>	<b>\$660</b>



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**TABLE 2  
Cost Limits For High-Priced Warranted Parts For New OHRV**

Model Year <sup>(1)</sup>	Cost Limit
2018	\$200
2019	\$200
2020	\$210
2021	\$210
<b>2022</b>	<b>\$220</b>

**TABLE 3  
Cost Limits For High-Priced Warranted Parts For AFR Systems**

Calendar Year <sup>(2)</sup>	Cost Limit For 2004+	Cost Limit For 1994-2003
2014	\$580	\$560
2015	\$590	\$570
2016	\$600	\$580
2017	\$600	\$580
2018	\$610	\$590
2019	\$620	\$600
2020	\$640	\$620
2021	\$650	\$690
<b>2022</b>	<b>\$660</b>	<b>\$700</b>

(1) Model Year means the model year of the test group/engine family, irrespective of the date the Executive Order is signed.

(2) Calendar Year means the calendar year in which certification of the AFR system is granted, i.e., the date (during January 1 – December 31) the Executive Order is signed, irrespective of the model year of the base vehicle/engine.

(3) The high-priced warranted parts cost limit does not apply to new HDE/V.