

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER B-57-11

Relating to Conversion of Engines to Alternative Fuels

CLEAN AIR POWER

Pursuant to the authority vested in the Air Resources Board by Sections 43004 and 43006 of the Health and Safety Code and Section 10753(d) of the Revenue and Taxation Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-14-012;

IT IS ORDERED AND RESOLVED: The bi-fuel compressed natural gas/diesel (CNG/diesel) and liquefied natural gas/diesel (LNG/diesel) retrofit system, manufactured by Clean Air Power (CAP) of 13615 Stowe Drive, Poway, California 92064, is certified as described below for the following 2012 model-year Volvo Powertrain Corporation, 12.8 liter, heavy heavy-duty engine:

Fuel Type: Diesel to bi-fuel CNG/diesel or LNG/diesel  
Engine Family: CVPTH12.8S01                      Displacement: 12.8 liter  
Engine Models: D13H-425, MP8-415E

Major Retrofit System Components: See Attachment

All emission control systems, and the engine manufacturer's tune-up label shall be retained. The engine shall be adjusted to CAP's tune-up specifications. The production retrofit system shall be in all material respect the same as that for which certification is granted.

The certification exhaust emission standards for this engine family in grams per brake horsepower-hour are:

FTP and SET Emissions Standards (g/bhp.hr)	<u>NMHC</u>	<u>NOx</u>	<u>CO</u>	<u>PM</u>
HDDE @ 435,000 Miles/22,000 hrs	0.14	0.20	15.5	0.01

The certification exhaust emission values for this engine family with the diesel and bi-fuel CNG/diesel or bi-fuel LNG/diesel retrofit system in grams per brake horsepower-hour are:

Certification Levels (g/bhp.hr) @ 435,000 Miles or 22,000 hrs		NMHC	NOx	CO	PM
CNG/Diesel or LNG/Diesel	FTP	0.12	0.20	0.1	0.001
	SET	0.04	0.09	0.01	0.001
Diesel	FTP	0.01	0.12	0.2	0.0003
	SET	0.002	0.09	0.01	0.0002

BE IT FURTHER RESOLVED: The retrofit system manufacturer has submitted and the Executive Officer hereby approves the materials in the application to demonstrate certification compliance with the emission standards set forth in Section 4 of the "California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines."

BE IT FURTHER RESOLVED: The retrofit system manufacturer has submitted and the Executive Officer hereby approves the materials in the application to demonstrate certification compliance with the on-board diagnostic system requirements in Section 6 of the "California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines."

BE IT FURTHER RESOLVED: The retrofit system manufacturer shall provide a supplemental emission control information label, which shall be affixed in a permanent manner adjacent to the original Vehicle Emission Control Information label, and shall comply with the labeling requirements described in Section 3(e) of the "California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines."

BE IT FURTHER RESOLVED: The retrofit system manufacturer has submitted and the Executive Officer hereby approves the materials required to demonstrate certification compliance with the warranty requirements, including warranty notification under Sections 3(f)(5), 3(g), and 9 of the "California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines."

BE IT FURTHER RESOLVED: The retrofit system manufacturer may be subject to in-use enforcement emission testing as described in Section 12 of the "California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines."

BE IT FURTHER RESOLVED: The retrofit system manufacturer shall maintain a record of each engine on which the retrofit system is installed as required in Section 3(h) of the "California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines." The manufacturer shall supply a copy of installation information upon request and annually report the annual sales by March 1 of the following calendar year.

The retrofit system certified under this Executive Order must conform to all applicable California emission regulations. Certification of the retrofit system shall not be construed as a certification to sell, offer for sale, or advertise any component of the retrofit system as an individually certified part.

The Bureau of Automotive Repair will be notified by copy of this Executive Order.

Executed at El Monte, California on this 1<sup>st</sup> day of April 2015.



*FOR* Annette Hebert, Chief  
Emissions Compliance, Automotive Regulations and Science Division



B-57-11

# ATTACHMENT

Alternative Fuel Retrofit Parts List for CVPTH12.8S01 (including LNG Tank when applicable)

Drawing Number	Description	QTY.	Drawing Number	Description	QTY.
626075-1	AIR CONTROL INSTALLATION	1	626817-1	INJECTOR MANIFOLD ASSY	1
626113-1	ELBOW ASSY	1	626794-1	SPACER PLATE	1
912220-1	90 ELBOW: REDUCER	1	626143-1	SOV ASSEMBLY	1
912123-1	BUSHING: TUBE UNION	1	904453-1	INTAKE GASKET	2
911803-64	FLANGE BOLT: M8x25	1	900373-21	FLANGE BOLT: M8x105	12
901543-5	HOSE CLAMP	3	901380-1	KNOCK SENSOR	2
626128-1	HOSE: MODIFIED	1	911803-60	FLANGE BOLT: M8x16	1
625987-1	INTERMEDIATE PIPE ASSY	1	911803-91	FLANGE BOLT: M10x30	2
912043-1	MAF SENSOR	1	626003-1	UHEC INSTALLATION	1
626088-1	BRKT: TAB OUTLET TUBE	1	626837-1	COIL ASSEMBLY	2
912067-1	U-BOLT	1	621197-1	DTEC ASSEMBLY	1
912082-1	ELBOW: SILICONE HOSE	1	625945-1	JUNCTION BOX: CAN	1
909601-1	SILICONE GREASE	1	626461-1	BRKT: FUSE BLOCK MTG	1
626116-1	COMPRESSOR PIPE: MODIFIED	1	626461-2	BRKT: FUSE BLOCK MTG	1
626073-1	TUBE: TAB OUTLET	1	626463-1	BUSHING: COIL MOUNTING	2
912221-1	SEAL: COMPRESSOR INLET	1	626466-1	BRACKET: UHEC	1
912068-1	ELBOW: TURBO AIR INLET	1	626465-1	UHEC ASSEMBLY	1
626002-2	TAB ELBOW ASSEMBLY (Ø40mm)	1	626473-1	HARNESS: TWIN COIL	1
904912-1	TAB VALVE	1	626481-1	HARNESS: UHEC - GEN2	1
901382-1	INTERCOOLER TEMP SENSOR	1	626662-1	LABEL: FUSE AND RELAY	1
901440-5	LOCKNUT-IN	2	626706-1	ECU ASSY - US GENESIS	1
901543-7	HOSE CLAMP	1	626743-1	P5 MODULE ASSY	1
901543-8	HOSE CLAMP	2	626835-1	DTT DEVICE ASSEMBLY	1
625857-1	INJECTION MANIFOLD INSTALL	1	626804-1	ASE MODULE	1
625561-1	NGP SENSOR (R110)	1	900302-54	SOCKET HEAD CAP SCREW	2
617075-1	CLAMP: SINGLE INJECTOR	12	900310-10	HEX HEAD MACHINE SCREW	4
619625-1	INJECTOR ASSEMBLY	12	900310-25	HEX HEAD MACHINE SCREW	3
625858-1	FAN RING BRACKET	1	900310-8	HEX HEAD MACHINE SCREW	12
626025-1	BRACKET: ENGINE HARNESS	1	900502-11	WASHER	10
626036-1	BRACKET ASSY: ENGINE HARNESS	1	900502-14	WASHER	6
900201-125	O-RING	1	900502-26	WASHER	2
900202-50	O-RING	1	901441-6	FLANGE NUT	4
900202-55	O-RING	1	901846-2	CABLE TIE	5
900302-34	SOCKET HEAD CAP SCREW	12	904605-1	ADHESIVE	1
900403-9	PLUG	1	911470-1	ADAPTOR	1
900503-12	M5 LOCKWASHER	12	911480-1	CLIP	1
901384-1	SENSOR: NGT	1	912131-1	SCREW: TORX SOCKET METRIC	4
909601-1	SILICONE GREASE	1	626471-1	INERTIA SWITCH ASSY	1
910155-2	90° ELBOW: SAE TO TUBE	1	901449-5	FLANGE NUT: LOCKING (M10)	1
625869-1	HOSE: EGR PIPE	1	912060-12	FLANGE SCREW: M6x16	2
626022-1	ENGINE LIFTING BRKT: MODIFIED	1	912061-2	FLANGE NUT: M6	2
626573-1	INTAKE SENSOR BLOCK ASSY	1	911803-91	FLANGE BOLT M10X30	1
912199-1	O2 SENSOR	1	626010-1	TANK ASSEMBLY, LNG	1