California Environmental Protection Agency AIR RESOURCES BOARD	POLARIS INDUSTRIES, INC.	EXECUTIVE ORDER U-M-013-0017 New Emission-Compliant All-Terrain Vehicles Certified Using The Optional Engine Test Procedure

Pursuant to the authority vested in the Air Resources Board by the Health and Safety Code, Division 26, Part 5, Chapters 1 and 2; and

Pursuant to the authority vested in the undersigned by Health and Safety Code Sections 39515 and 39516 and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the engine and exhaust emission control system produced by the manufacturer are certified as described below for all-terrain vehicles. Production vehicles, and engines that power such vehicles, shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	ENGINE DISPLACEMENT (cc)	VEHICLE TYPE	FUEL TYPE	SPECIAL FEATURES & EMISSION CONTROL SYSTEMS
2005	5POLX.7604EA	683 and 760	ATV	Gasoline	MFI

ATV=all-terrain vehicle OFMC=off-road motorcycle EM=engine modification TWC=three-way catalyst OC=oxidizing catalyst WUTWC/WUOC=warm-up TWC/OC O2S=oxygen sensor HO2S=heated O2S EGR=exhaust gas recirculation AIR=secondary air injection PAIR=pulsed AIR MFI=multi port fuel injection SFI=sequential MFI TBI=throttle body fuel injection DFI=direct fuel injection TC/SC=turbo/super charger CAC=charge air cooler 2 (prefix)=parallel (2) (suffix)=in series

VEHICLE MODELS / ENGINE CODES (rated engine power in horsepower, hp)	Sportsman 700 EFI / EH0680LE021 (44 hp) Sportsman 800 EFI / EH0760LE012 (50 hp)

The following are the exhaust hydrocarbons plus oxides of nitrogen (HC+NOx) and carbon monoxide (CO) standards, or designated HC+NOx standard as applicable, and certification levels in grams per brake horsepower-hour (g/bhp-hr) for this engine family. The designated HC+NOx standard, as applicable, shall be displayed on the permanent emission control label. Vehicles within this engine family, and engines that power such vehicles, shall not discharge any crankcase emissions into the ambient atmosphere in conformance with Title 13, California Code of Regulations, (13 CCR) Section 2412(i).

HC+NOx (g/bhp-hr)				CO (g/bhp-hr)		* = not applicable
CORPORATE AVERAGE STANDARD	DESIGNATED STANDARD	(DIRECT) STANDARD	CERTIFICATION LEVEL	STANDARD	CERTIFICATION LEVEL	
*	*	10.0	6.7	300	178	

BE IT FURTHER RESOLVED: That pursuant to 13 CCR Section 2412(e), the listed vehicles, and engines that power such vehicles, were tested in accordance with the incorporated small off-road engine test procedures, and have demonstrated compliance with the applicable emission standards.

BE IT FURTHER RESOLVED: That certification to the designated HC+NOx standard listed above, as applicable, is subject to the following terms, limitations and conditions:

The designated standard shall be the exhaust limit for this engine family for the model year and cannot be changed by the manufacturer. It serves as the exhaust standard applicable to this engine family for determining engine family compliance, and compliance with the corporate average HC+NOx standard in accordance with 13 CCR Sections 2412(b), (d) and (e) and 2414.

BE IT FURTHER RESOLVED: That the listed vehicles, and engines that power such vehicles, shall be subject to 13 CCR Section 2414 (enforcement and recall provisions).

BE IT FURTHER RESOLVED: That the listed vehicles, and engines that power such vehicles, shall comply with 13 CCR Sections 1965 and 2413 (emission control labels).

Vehicles, and engines that power such vehicles, certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Vehicles, and engines that power such vehicles, in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 5TH day of April 2004.

Allen Lyons, Chief
Mobile Source Operations Division

CERTIFICATION SUMMARY

California Environmental Protection Agency
AIR RESOURCES BOARD

EMISSION COMPLIANT OFF-ROAD MCs & ATVs

MODEL-YEAR 2005 **MANUFACTURER:** POLARIS INDUSTRIES **EXECUTIVE ORDER:** U-M-013-0017

1. **EPA-Standardized Family Name:** 5POLX.7604EA.
2. **Vehicle Category:** ATVE.
3. **All Sales Codes within Engine Family:** 50S
4. **All Engine Displacement(s) in Engine Family** (units in cubic centimeters, (cc)):

1) 683	2) 760	3)	4)

5. **Emission Standards Compliance:** DSC
6. If Corporate Averaging, list **Designated Standard:** * for HC+NOx.
7. **Engine Design:**

a. Combustion Cycle:	four-stroke
@ Oil/Fuel Ratio	*
b. Engine Type:	Reciprocating
c. Valvetrain:	Overhead
d. Total Number of Intake and Exhaust Valves (Ports) per Cylinder:	2
e. Type of Engine Cooling:	Water
f. Number of Cylinders:	2
g. Cylinder Arrangement:	I

8. **Intake, Fuel and Emission Control Systems (ECS):**

a. Aftertreatment(s):	*
b. Sensor(s):	*
c. Fuel System:	MFI
d. Exhaust Gas Recirculation:	*
e. Method of Aspiration:	NAT
f. Air Injection Reaction:	*
g. Others:	*
	S

9. **Deterioration Factors (DFs)**: a. New Durability Testing: NO; Carryover from EF: 4POLX.683E41;
   b. Durability Engine Model: EH0680LE021 ID: 0020; c. Durability Test Distance (km/hr): 0 / 200;
   d. Exhaust DF Values (no less than 1.000): HC: ~~NOx~~ 1.104; NOx: ~~1.104~~; CO: 1.301.
10. **Certification Test Engine Information**: New Test: C/O; Carryover from Engine Family: 4POLX.683E41
   a. Test Vehicle or Engine: Model EH0680LE02 ID: 0014 Rated Power, hp: 44 @ 6000 rpm; Test Date: 8/29/03
   b. Equivalent Inertia Mass (kg): 0 RLF(Nt): 0 Trans: AV MPG: _____.
   c. Test Fuel Type: IC01.
   d. Special Test Equipment (e.g., cooling fans, special couplings, etc.): Yes/No: _____. If Yes, describe below:

   n/a

11. **Certification Emission Levels**: HC: _____ HC+NOx: 6.73 CO: 177.76.

Test No. and Type	Official Test Results in (g/bhp-hr): (raw data) (i.e., no DFs)			Certification Emissions in (g/bhp-hr): (i.e., with DFs applied)			
	HC+NOx	NOx	CO	HC	NOx	HC+NOx	CO
1.	6.1	~~6.1~~	136.66	~~6.73~~	~~6.78~~	6.73	177.76
2.							
3.							
Standard:				*		10	300

Remarks: 683cc engine is considered "worst case" due to BSFC

Issue Date: 3/2/04 **Revision Date(s):** _____

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