

DIRECTIVES

COMMISSION DIRECTIVE 2014/43/EU

of 18 March 2014

amending Annexes I, II and III to Directive 2000/25/EC of the European Parliament and of the Council on action to be taken against the emission of gaseous and particulate pollutants by engines intended to power agricultural or forestry tractors

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive 2000/25/EC of the European Parliament and of the Council of 22 May 2000 on action to be taken against the emission of gaseous and particulate pollutants by engines intended to power agricultural or forestry tractors and amending Council Directive 74/150/EEC ⁽¹⁾ and in particular Article 7 thereof,

Whereas:

- (1) Directive 2000/25/EC lays down the limit values for emissions of gaseous and particulate pollutants to be applied in successive stages, and the test procedure for internal combustion engines intended to power agricultural or forestry tractors by reference to the provisions of Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery ⁽²⁾.
- (2) Technical progress requires rapid adaptation of the technical requirements set out in the Annexes to Directive 97/68/EC and therefore that Directive has been amended several times. It is therefore necessary to align Directive 2000/25/EC with the provisions of Directive 97/68/EC as amended.
- (3) Annex XII to Directive 97/68/EC has been amended by Commission Directive 2012/46/EU ⁽³⁾ in order to introduce new alternative type-approvals according to technical progress at the UNECE level and so as to ensure international harmonisation with respect to alternative type-approval procedures. Those alternative type-approval provisions should therefore be introduced into

Directive 2000/25/EC. In addition, it is necessary to update the references to Regulations No 49 and No 96 of the United Nations Economic Commission for Europe (UNECE) to ensure that they correspond to the amendments to Directive 97/68/EC with respect to the recognition of alternative type-approvals for engines intended to power agricultural and forestry tractors.

- (4) Annexes I, II and III to Directive 2000/25/EC should therefore be amended accordingly.
- (5) The measures provided for in this Directive are in accordance with the opinion of the Committee established in Article 20 of Directive 2003/37/EC,

HAS ADOPTED THIS DIRECTIVE:

Article 1

Annexes I, II and III to Directive 2000/25/EC are amended in accordance with the Annex to this Directive.

Article 2

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by the 1 January 2015 at the latest. They shall communicate to the Commission the relevant text of those provisions forthwith.

When Member States adopt those provisions, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

2. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.

Article 3

This Directive shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

⁽¹⁾ OJ L 173, 12.7.2000, p. 1.

⁽²⁾ OJ L 59, 27.2.1998, p. 1.

⁽³⁾ OJ L 353, 21.12.2012, p. 80.

Article 4

This Directive is addressed to the Member States.

Done at Brussels, 18 March 2014.

For the Commission
The President
José Manuel BARROSO

ANNEX

Annexes I, II and III to Directive 2000/25/EC are amended as follows:

(1) Annex I is amended as follows:

(a) Section 3 is replaced by the following:

‘3. SPECIFICATIONS AND TESTS

The provisions of Annex I, Sections 4, 8 and 9, Appendices 1 and 2, and Annexes III, IV and V to Directive 97/68/EC shall apply.’;

(b) Appendix 1 is amended as follows:

(i) Section 2.2 is replaced by the following:

- ‘2.2. Measures taken against air pollution
- 2.2.1. Device for recycling crankcase gases: yes/no ⁽¹⁾
- 2.2.2. Additional anti-pollution devices (if any, and if not covered by another heading)
- 2.2.2.1. Catalytic converter: yes/no ⁽¹⁾
- 2.2.2.1.1. Make(s):
- 2.2.2.1.2. Type(s):
- 2.2.2.1.3. Number of catalytic converters and elements
- 2.2.2.1.4. Dimensions- and volume of the catalytic converter(s):
- 2.2.2.1.5. Type of catalytic action:
- 2.2.2.1.6. Total charge of precious metals:
- 2.2.2.1.7. Relative concentration:
- 2.2.2.1.8. Substrate (structure and material):
- 2.2.2.1.9. Cell density:
- 2.2.2.1.10. Type of casing for the catalytic converter(s):
- 2.2.2.1.11. Location of the catalytic converter(s) (place(s) and maximum/minimum distance(s) from engine):
- 2.2.2.1.12. Normal operating range (K):
- 2.2.2.1.13. Consumable reagent (where appropriate):
- 2.2.2.1.13.1. Type and concentration of reagent needed for catalytic action:
- 2.2.2.1.13.2. Normal operational temperature range of reagent:
- 2.2.2.1.13.3. International standard (where appropriate):
- 2.2.2.1.14. NO_x sensor: yes/no ⁽¹⁾
- 2.2.2.2. Oxygen sensor: yes/no ⁽¹⁾
- 2.2.2.2.1. Make(s):
- 2.2.2.2.2. Type:
- 2.2.2.2.3. Location:
- 2.2.2.3. Air injection: yes/no ⁽¹⁾
- 2.2.2.3.1. Type (pulse air, air pump, etc.):
- 2.2.2.4. EGR: yes/no ⁽¹⁾
- 2.2.2.4.1. Characteristics (cooled/uncooled, high pressure/low pressure, etc.):

- 2.2.2.5. Particulate trap: yes/no ⁽¹⁾
- 2.2.2.5.1. Dimensions and capacity of the particulate trap:
- 2.2.2.5.2. Type and design of the particulate trap:
- 2.2.2.5.3. Location (place(s) and maximum/minimum distance(s) from engine):
- 2.2.2.5.4. Method or system of regeneration, description and/or drawing:
- 2.2.2.5.5. Normal operating temperature (K) and pressure (kPa) range:
- 2.2.2.6. Other systems: yes/no ⁽¹⁾
- 2.2.2.6.1. Description and operation:;

(ii) Section 2.4 is replaced by the following:

- 2.4. Valve timing
- 2.4.1. Maximum lift and angles of opening and closing in relation to dead centres or equivalent data:
- 2.4.2. Reference and/or setting ranges ⁽¹⁾
- 2.4.3. Variable valve timing system (if applicable and where intake and/or exhaust)
- 2.4.3.1. Type: continuous or on/off ⁽¹⁾
- 2.4.3.2. Cam phase shift angle:;

(iii) in Section 3.1.2, the table is replaced by the following:

	'Parent engine (*)	Engines within family (**)			
Engine type					
No of cylinders					
Rated speed (min ⁻¹)					
Fuel delivery per stroke (mm ³) for diesel engines, fuel flow (g/h) for petrol engines, at rated net power					
Rated net power (kW)					
Maximum power speed (min ⁻¹)					
Maximum net power (kW)					
Maximum torque speed (min ⁻¹)					
Fuel delivery per stroke (mm ³) for diesel engines, fuel flow (g/h) for petrol engines, at maximum torque					
Maximum torque (Nm)					
Low idle speed (min ⁻¹)					
Cylinder displacement (in % of parent engine)	100				

(*) For full details see Section 2.
 (**) For full details see Section 4.;

(iv) Section 4.2 is replaced by the following:

- 4.2. Measures taken against air pollution
- 4.2.1. Device for recycling crankcase gases: yes/no ⁽¹⁾

- 4.2.2. Additional anti-pollution devices (if any, and if not covered by another heading)
 - 4.2.2.1. Catalytic converter: yes/no ⁽¹⁾
 - 4.2.2.1.1. Make(s):
 - 4.2.2.1.2. Type(s):
 - 4.2.2.1.3. Number of catalytic converters and elements
 - 4.2.2.1.4. Dimensions- and volume of the catalytic converter(s):
 - 4.2.2.1.5. Type of catalytic action:
 - 4.2.2.1.6. Total charge of precious metals:
 - 4.2.2.1.7. Relative concentration:
 - 4.2.2.1.8. Substrate (structure and material):
 - 4.2.2.1.9. Cell density:
 - 4.2.2.1.10. Type of casing for the catalytic converter(s):
 - 4.2.2.1.11. Location of the catalytic converter(s) (place(s) and maximum/minimum distance(s) from engine):
 - 4.2.2.1.12. Normal operating range (K):
 - 4.2.2.1.13. Consumable reagent (where appropriate):
 - 4.2.2.1.13.1. Type and concentration of reagent needed for catalytic action:
 - 4.2.2.1.13.2. Normal operational temperature range of reagent:
 - 4.2.2.1.13.3. International standard (where appropriate):
 - 4.2.2.1.14. NO_x sensor: yes/no ⁽¹⁾
 - 4.2.2.2. Oxygen sensor: yes/no ⁽¹⁾
 - 4.2.2.2.1. Make(s):
 - 4.2.2.2.2. Type:
 - 4.2.2.2.3. Location:
 - 4.2.2.3. Air injection: yes/no ⁽¹⁾
 - 4.2.2.3.1. Type (pulse air, air pump, etc.):
 - 4.2.2.4. EGR: yes/no ⁽¹⁾
 - 4.2.2.4.1. Characteristics (cooled/uncooled, high pressure/low pressure, etc.):
 - 4.2.2.5. Particulate trap: yes/no ⁽¹⁾
 - 4.2.2.5.1. Dimensions and capacity of the particulate trap:
 - 4.2.2.5.2. Type and design of the particulate trap:
 - 4.2.2.5.3. Location (place(s) and maximum/minimum distance(s) from engine):
 - 4.2.2.5.4. Method or system of regeneration, description and/or drawing:
 - 4.2.2.5.5. Normal operating temperature (K) and pressure (kPa) range:
 - 4.2.2.6. Other systems: yes/no ⁽¹⁾
 - 4.2.2.6.1. Description and operation:;

(v) Section 4.4 is replaced by the following

- ‘4.4. Valve timing
 - 4.4.1. Maximum lift and angles of opening and closing in relation to dead centres or equivalent data:

- 4.4.2. Reference and/or setting ranges ⁽¹⁾:
- 4.4.3. Variable valve timing system (if applicable and where intake and/or exhaust)
 - 4.4.3.1. Type: continuous or on/off ⁽¹⁾
 - 4.4.3.2. Cam phase shift angle:

⁽¹⁾ Delete where not applicable.;

(c) Appendix 2 is amended as follows:

(i) Section 2.4 is replaced by the following:

- 2.4. Emission results of the engine/parent engine ⁽¹⁾
- 2.4.1. Information concerning the conduct of the NRSC test
 - Deterioration Factor (DF): calculated/fixed ⁽¹⁾

Specify the DF values and the emission results in the following table:

NRSC test						
DF mult/add ⁽¹⁾	CO	HC	NO _x	HC+NO _x	PM	
Emissions	CO (g/kWh)	HC (g/kWh)	NO _x (g/kWh)	HC+NO _x (g/kWh)	PM (g/kWh)	CO ₂ (g/kWh)
Test result						
Final test result with DF						

Additional control area test points (if applicable)						
Emissions at test point	Engine speed	Load (%)	CO (g/kWh)	HC (g/kWh)	NO _x (g/kWh)	PM (g/kWh)
Test result 1						
Test result 2						
Test result 3						

- 2.4.1.2. Sampling system used for the NRSC test:
- 2.4.1.2.1. Gaseous emissions (*):
- 2.4.1.2.2. PM(*):
- 2.4.1.2.3. Method: single/multiple filter ⁽¹⁾
- 2.4.2. Information concerning the conduct of the NRTC test (if applicable):
 - 2.4.2.1. Emission results of the engine/parent engine
 - Deterioration Factor (DF): calculated/fixed ⁽¹⁾

Specify the DF values and the emission results in the following table:

Regeneration related data may be reported for Stage IV engines.

NRTC test						
DF mult/add ⁽¹⁾	CO	HC	NO _x	HC+NO _x	PM	
Emissions	CO (g/kWh)	HC (g/kWh)	NO _x (g/kWh)	HC+NO _x (g/kWh)	PM (g/kWh)	
Cold start						
Emissions	CO (g/kWh)	HC (g/kWh)	NO _x (g/kWh)	HC+NO _x (g/kWh)	PM (g/kWh)	CO ₂ (g/kWh)
Hot start w/o regeneration						
Hot start with regeneration						
kr,u (mult/add) ⁽¹⁾ kr,d (mult/add) ⁽¹⁾						
Weighted test result						
Final test result with DF						

Cycle work for hot start w/o regeneration kWh

2.4.2.2. Sampling system used for the NRTC test:

Gaseous emissions (*):

PM (*):

Method: single/multiple filter ⁽¹⁾

(*) Indicate the figure number of the system used as set out in Section 1 of Annex VI to Directive 97/68/EC.
⁽¹⁾ Delete where not applicable.;

(2) in Annex II, Appendix 1 is amended as follows:

(a) Section 2.2 is replaced by the following:

- '2.2. Measures taken against air pollution
- 2.2.1. Device for recycling crankcase gases: yes/no ⁽¹⁾
- 2.2.2. Additional anti-pollution devices (if any, and if not covered by another heading)
 - 2.2.2.1. Catalytic converter: yes/no ⁽¹⁾
 - 2.2.2.1.1. Make(s):
 - 2.2.2.1.2. Type(s):
 - 2.2.2.1.3. Number of catalytic converters and elements
 - 2.2.2.1.4. Dimensions- and volume of the catalytic converter(s):
 - 2.2.2.1.5. Type of catalytic action:
 - 2.2.2.1.6. Total charge of precious metals:
 - 2.2.2.1.7. Relative concentration:
 - 2.2.2.1.8. Substrate (structure and material):
 - 2.2.2.1.9. Cell density:
 - 2.2.2.1.10. Type of casing for the catalytic converter(s):
 - 2.2.2.1.11. Location of the catalytic converter(s) (place(s) and maximum/minimum distance(s) from engine):
 - 2.2.2.1.12. Normal operating range (K):
 - 2.2.2.1.13. Consumable reagent (where appropriate):
 - 2.2.2.1.13.1. Type and concentration of reagent needed for catalytic action:

- 2.2.2.1.13.2. Normal operational temperature range of reagent:
- 2.2.2.1.13.3. International standard (where appropriate):
- 2.2.2.1.14. NO_x sensor: yes/no ⁽¹⁾
- 2.2.2.2. Oxygen sensor: yes/no ⁽¹⁾
- 2.2.2.2.1. Make(s):
- 2.2.2.2.2. Type:
- 2.2.2.2.3. Location:
- 2.2.2.3. Air injection: yes/no ⁽¹⁾
- 2.2.2.3.1. Type (pulse air, air pump, etc.):
- 2.2.2.4. EGR: yes/no ⁽¹⁾
- 2.2.2.4.1. Characteristics (cooled/uncooled, high pressure/low pressure, etc.):
- 2.2.2.5. Particulate trap: yes/no ⁽¹⁾
- 2.2.2.5.1. Dimensions and capacity of the particulate trap:
- 2.2.2.5.2. Type and design of the particulate trap:
- 2.2.2.5.3. Location (place(s) and maximum/minimum distance(s) from engine):
- 2.2.2.5.4. Method or system of regeneration, description and/or drawing:
- 2.2.2.5.5. Normal operating temperature (K) and pressure (kPa) range:
- 2.2.2.6. Other systems: yes/no ⁽¹⁾
- 2.2.2.6.1. Description and operation:;
- (b) Section 2.4 is replaced by the following:
- ‘2.4. Valve timing
- 2.4.1. Maximum lift and angles of opening and closing in relation to dead centres or equivalent data:
- 2.4.2. Reference and/or setting ranges ⁽¹⁾:
- 2.4.3. Variable valve timing system (if applicable and where intake and/or exhaust)
- 2.4.3.1. Type: continuous or on/off ⁽¹⁾
- 2.4.3.2. Cam phase shift angle:

⁽¹⁾ Delete where not applicable.’

- (3) Annex III is replaced by the following:

‘ANNEX III

RECOGNITION OF ALTERNATIVE TYPE-APPROVALS

The following type-approvals and, where applicable, the pertaining approval marks are recognised as being equivalent to an approval to this Directive:

1. For engines categories H, I, J and K (stage IIIA) as specified in Article 9(3a) and (3b) of Directive 97/68/EC, type-approvals in accordance with points 3.1, 3.2 and 3.3 of Annex XII to Directive 97/68/EC.
2. For engines categories L, M, N and P (stage IIIB) as specified in Article 9(3c) of Directive 97/68/EC, type-approvals in accordance with points 4.1, 4.2 and 4.3 of Annex XII to Directive 97/68/EC.
3. For engines categories Q and R (stage IV) as specified in Article 9(3d) of Directive 97/68/EC, type-approvals in accordance with, points 5.1 and 5.2 of Annex XII to Directive 97/68/EC.’