



Council of the  
European Union

011078/EU XXVI. GP  
Eingelangt am 12/02/18

Brussels, 12 February 2018  
(OR. en)

6117/18  
ADD 1

AGRI 78  
ENT 19  
MI 81  
DELECT 29

#### COVER NOTE

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From: Secretary-General of the European Commission,  
signed by Mr Jordi AYET PUIGARNAU, Director

date of receipt: 12 February 2018

To: Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of  
the European Union

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No. Cion doc.: C(2018) 721 final ANNEXES 1 to 2

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Subject: ANNEXES to the Commission Delegated Regulation (EU) .../...  
supplementing Regulation (EU) No 167/2013 of the European Parliament  
and of the Council as regards environmental and propulsion unit  
performance requirements for agricultural and forestry vehicles and their  
engines and repealing Commission Delegated Regulation (EU) 2015/96

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Delegations will find attached document C(2018) 721 final ANNEXES 1 to 2.

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Encl.: C(2018) 721 final ANNEXES 1 to 2



Brussels, 12.2.2018  
C(2018) 721 final

ANNEXES 1 to 2

## **ANNEXES**

**to the**

**Commission Delegated Regulation (EU) .../...**

**supplementing Regulation (EU) No 167/2013 of the European Parliament and of the Council as regards environmental and propulsion unit performance requirements for agricultural and forestry vehicles and their engines and repealing Commission Delegated Regulation (EU) 2015/96**

## ANNEX I

### **Requirements for EU type-approval regarding pollutant emissions**

#### PART 1

Adaptation to the requirements laid down in Regulation (EU) 2016/1628

1. For the purposes of granting an EU type-approval regarding pollutant emissions, in accordance with the provisions of Regulation (EU) No 167/2013, of an agricultural and forestry vehicle or an engine type or an engine family as a component, the following adaptations to the provisions of Regulation (EU) 2016/1628 applicable pursuant to Article 19(3) of Regulation (EU) No 167/2013 shall be taken into account:
  - 1.1. The references to 'non-road mobile machinery' in Regulation (EU) 2016/1628 shall be read as references to 'agricultural and forestry vehicle'.
  - 1.2. The references to the 'original equipment manufacturer' or 'OEM' in Regulation (EU) 2016/1628 shall be read as references to the 'vehicle manufacturer'.
  - 1.3. The dates of application for placing on the market of engines referred to in Annex III to Regulation (EU) 2016/1628 shall be read as dates of application for initial entry into service of engines and vehicles.
  - 1.4. The dates for EU type-approval of engines, or, where applicable, the dates for type-approval of an engine type or engine family laid down in Annex III to Regulation (EU) 2016/1628 shall be read as dates for EU type-approval of a vehicle type or, where applicable, an engine type or an engine family.
2. Engine manufacturers shall use the parameters laid down in Annex IX to Implementing Regulation (EU) 2017/656 when defining engine types and engine families and their operation modes.

#### PART 2

##### Specific requirements

1. In addition to the provisions of Article 28 of Regulation (EU) No 167/2013 and Article 7 of Delegated Regulation (EU) No 1322/2014, the conformity of production of engines shall be checked in accordance with the provisions of Article 26 of Regulation (EU) 2016/1628 and those of Article 3 of Delegated Regulation (EU) 2017/654.
2. Marking
  - 2.1. The engine shall bear a statutory marking in accordance with Annex IV to Implementing Regulation (EU) 2015/504.
3. Monitoring of emissions of in-service engines

- 3.1. Engine manufacturers shall comply with the requirements on monitoring of emissions of in-service engines laid down in Article 19 of Regulation (EU) 2016/1628 and Commission Delegated Regulation 2017/655<sup>1</sup>.
4. Engine installation in the vehicle
  - 4.1. The engine installed in an agricultural and forestry vehicle shall present the same pollutant emissions performance as it did at type-approval.
  - 4.2. The engine installation in an agricultural and forestry vehicle shall comply with the requirements included in the information and instructions that the engine manufacturer shall provide to the vehicle manufacturer, as laid down in point 4.3.
  - 4.3. The engine manufacturer shall provide to the vehicle manufacturer all the information and instructions to ensure that the engine conforms to the approved engine type when installed in the vehicle. Instructions for this purpose shall be clearly identified to the vehicle manufacturer in conformity with the requirements laid down in Article 43(2) of Regulation (EU) 2016/1628 and Article 17 of Delegated Regulation (EU) 2017/654.
5. The engine manufacturer shall make available to the vehicle manufacturer all the relevant information and necessary instructions intended for the end-user, as laid down in Article 43(3) and (4) of Regulation (EU) 2016/1628 and Article 18 of Delegated Regulation (EU) 2017/654.
6. Prevention of tampering
  - 6.1. Engine manufacturers shall apply the provisions concerning technical details laid down in Annex X to Implementing Regulation (EU) 2017/656 for the prevention of tampering.

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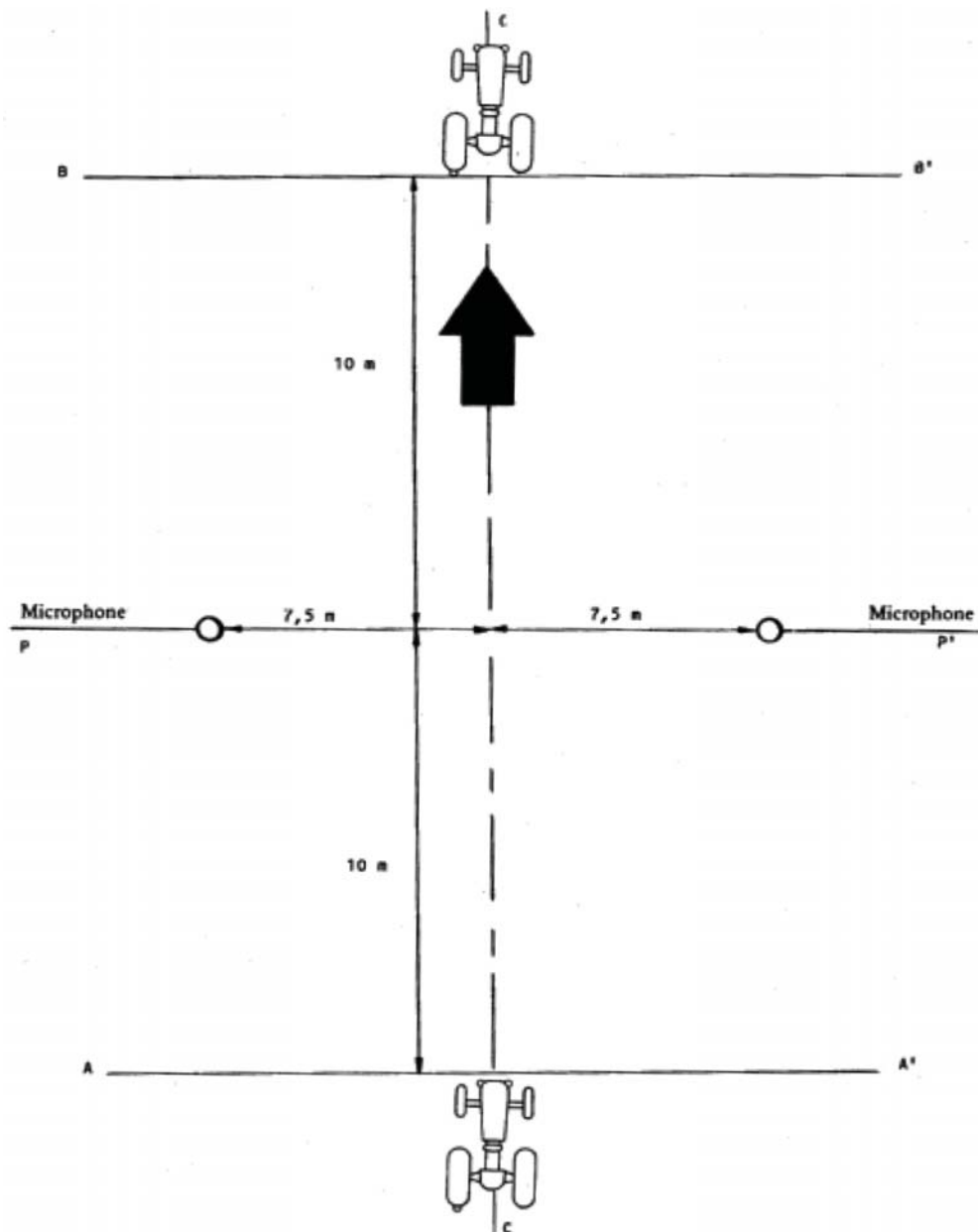
<sup>1</sup> Commission Delegated Regulation (EU) 2017/655 of 19 December 2016 supplementing Regulation (EU) 2016/1628 of the European Parliament and of the Council with regard to monitoring of gaseous pollutant emissions from in-service internal combustion engines installed in non-road mobile machinery (OJ L 102, 13.4.2017, p. 334).

## ANNEX II

### **Requirements for external sound emissions**

1. Permissible external sound levels
  - 1.1. The instrumentation system, including the microphones, cables and windscreen shall meet the requirements for a Class 1 instrument laid down in IEC 61672-1:2013. The filters shall meet the requirements for a Class 1 instrument given in IEC 61260:1995.
  - 1.2. Conditions of measurement
    - 1.2.1. Measurements shall be made on agricultural and forestry vehicles with their unladen mass in running order in a sufficiently silent and open area (ambient noise and wind noise at least 10 dB (A) below the external sound level being measured).
    - 1.2.2. This area may take the form, for instance, of an open space of 50 metres radius having a central part of at least 20 metres radius which is practically level; it may be surfaced with concrete, asphalt, or similar material and may not be covered with powdery snow, tall grass, loose soil or ashes.
    - 1.2.3. The surface of the test track shall be such as not to cause excessive tyre noise. This condition applies only to measurement of the external sound made by agricultural and forestry vehicles in motion.
    - 1.2.4. Measurement shall be carried out in fine weather with little wind. No person other than the observer taking the readings from the apparatus may remain near the agricultural and forestry vehicle or the microphone, as the presence of spectators near either the agricultural and forestry vehicle or the microphone may considerably affect the readings from the apparatus. Marked fluctuations of the pointer which appear to be unrelated to the characteristics of the general sound level shall be ignored in taking readings.
  - 1.3. Method of measurement
    - 1.3.1. Measurement of external sound level of agricultural and forestry vehicles in motion
      - 1.3.1.1. At least two measurements shall be made on each side of the agricultural and forestry vehicle. Preliminary measurements may be made for adjustment purposes but shall be disregarded.
      - 1.3.1.2. The microphone shall be situated 1,2 metres above ground level at a distance of 7,5 metres from the path of the agricultural and forestry vehicle's centre line, CC, measured along the perpendicular PP' to that line (figure 1).
      - 1.3.1.3. Two lines AA' and BB', parallel to line PP' and situated respectively 10 metres forward and 10 metres rearward of the line, shall be marked out on the test track. Agricultural and forestry vehicles shall approach line AA' at a steady speed, as specified below. The throttle shall then be fully opened as rapidly as practicable and held in the fully opened position until the rear of the agricultural and forestry vehicles crosses line BB'; the throttle shall then be closed again as rapidly as possible. Where the agricultural or forestry vehicle is coupled to a trailer, this shall not be taken into account in determining when line BB' is crossed.
      - 1.3.1.4. The maximum sound level recorded shall constitute the result of the measurement.

Figure 1



1.3.1.5. The steady speed before approaching line AA' shall be three-quarters of the maximum design speed ( $v_{max}$ ) as declared by the manufacturer which can be attained in the highest gear used for road movement.

1.3.1.6. Interpretation of results

1.3.6.1. To take account of inaccuracies in the measuring instruments, the result obtained from each measurement shall be determined by deducting 1 dB(A) from the meter reading.

1.3.1.6.2. Measurements shall be considered valid where the difference between two consecutive measurements on the same side of the agricultural and forestry vehicle does not exceed 2 dB(A).

1.3.1.6.3. The highest sound level measured shall constitute the test result. Should that result exceed the maximum permissible sound level for the category of agricultural and forestry vehicle tested by at least 1 dB(A), two further measurements shall be made. Three of the four measurements thus obtained must fall within the prescribed limits.

1.3.2. Measurement of external sound with agricultural and forestry vehicle stationary

1.3.2.1. Position of sound-level meter

Measurements shall be made at point X (shown in figure 2) at a distance of 7 metres from the nearest surface of the agricultural and forestry vehicle. The microphone shall be situated 1,2 metres above ground level.

1.3.2.2. Number of measurements: at least two measurements shall be made.

1.3.2.3. Agricultural and forestry vehicle test conditions

1.3.2.3.1. The engine of an agricultural and forestry vehicle without a speed governor shall be run at three-quarters of the rpm speed at which, in accordance with the agricultural and forestry vehicle manufacturer, it develops its maximum net power. The rpm speed of the engine shall be measured by means of an independent instrument, e.g. a roller bed and a tachometer. Where the engine is fitted with a governor preventing the engine from exceeding the speed at which it develops its maximum net power, it shall be run at the maximum speed permitted by the governor.

1.3.2.3.2. Before taking any measurements, the engine shall be brought to its normal running temperature.

1.3.2.4. Interpretation of results

1.3.2.4.1. All external sound-level readings recorded shall be given in the report. The engine speed shall be recorded in accordance with the provisions of Article 8. The state of loading of the agricultural and forestry vehicle shall also be recorded.

1.3.2.4.2. The measurements shall be considered valid where the difference between two consecutive measurements on the same side of the agricultural and forestry vehicle does not exceed 2 dB(A).

1.3.2.4.3. The maximum figure recorded shall constitute the result of the measurement.

1.3.3. External sound testing provisions for C-category vehicles with track chains in motion

For agricultural and forestry vehicles of C category equipped with track chains, the noise in motion shall be measured with vehicles with their unladen mass in running order travelling at a constant speed of 5 km/h (+/- 0,5 km/h), with the engine at rated speed over a layer of humid sand as specified by paragraph 5.3.2 of ISO 6395:2008. The microphone shall be situated in accordance with the provisions of point 1.3.1. The measured noise value shall be recorded in the test report.

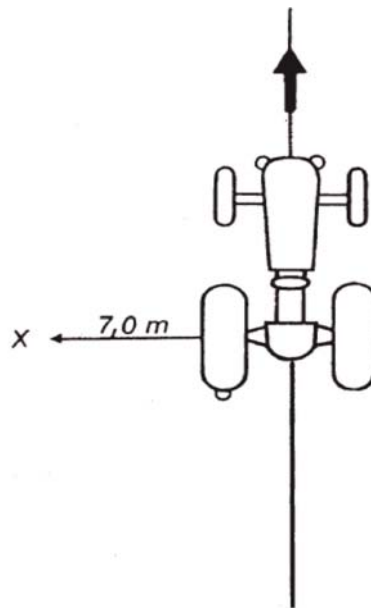
2. Exhaust System (Silencer)

2.1. Where the agricultural and forestry vehicle is fitted with a device designed to reduce the exhaust noise (silencer), the requirements of this section shall apply. Where the inlet of the engine is fitted with an air filter which is necessary in order to ensure compliance with the permissible sound level, the filter shall be considered to be part of the silencer, and the requirements of this point 2 shall also apply to that filter.

The exhaust tailpipe must be positioned in such a way that the exhaust gases cannot penetrate inside the cab.

Figure 2

**Measuring positions for stationary agricultural and forestry vehicles**



- 2.2. A drawing of the exhaust system must be annexed to the agricultural and forestry vehicle type-approval certificate.
- 2.3. The silencer must be marked with a reference to its make and type which is clearly legible and indelible.
- 2.4. The use of fibrous absorbent material is permitted in the construction of silencers only where the following conditions are fulfilled:
  - 2.4.1. the fibrous absorbent material may not be placed in those parts of the silencer through which gases pass;
  - 2.4.2. suitable devices must ensure that the fibrous absorbent material is kept in place for the whole time that the silencer is being used;
  - 2.4.3. the fibrous absorbent material must be resistant to a temperature at least 20 % higher than the operating temperature (degrees C) which may occur in the region of the silencer where those fibrous absorbent materials are situated.