

UN Regulation No.41

Noise emissions of motorcycles

(Test procedures)

NTSEL

National Traffic Safety and Environment Laboratory

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Outline

1. Noise of acceleration section
2. Noise of stationary section
3. Test equipments
4. Introduce difference 03 series vs 04 series

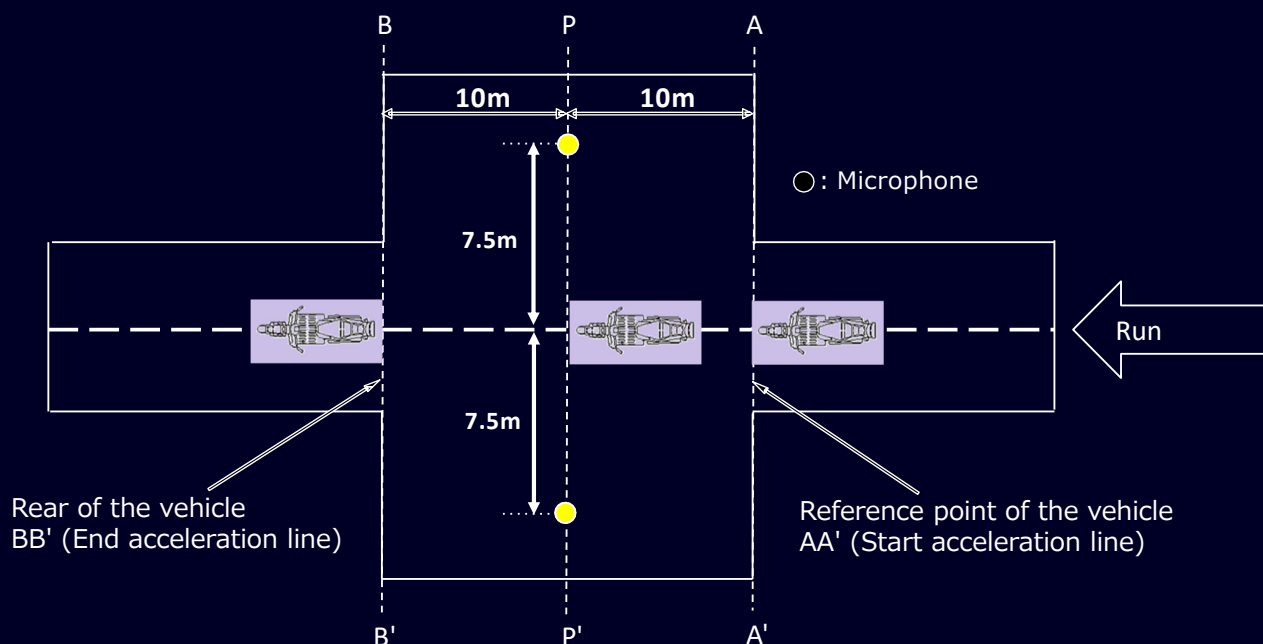
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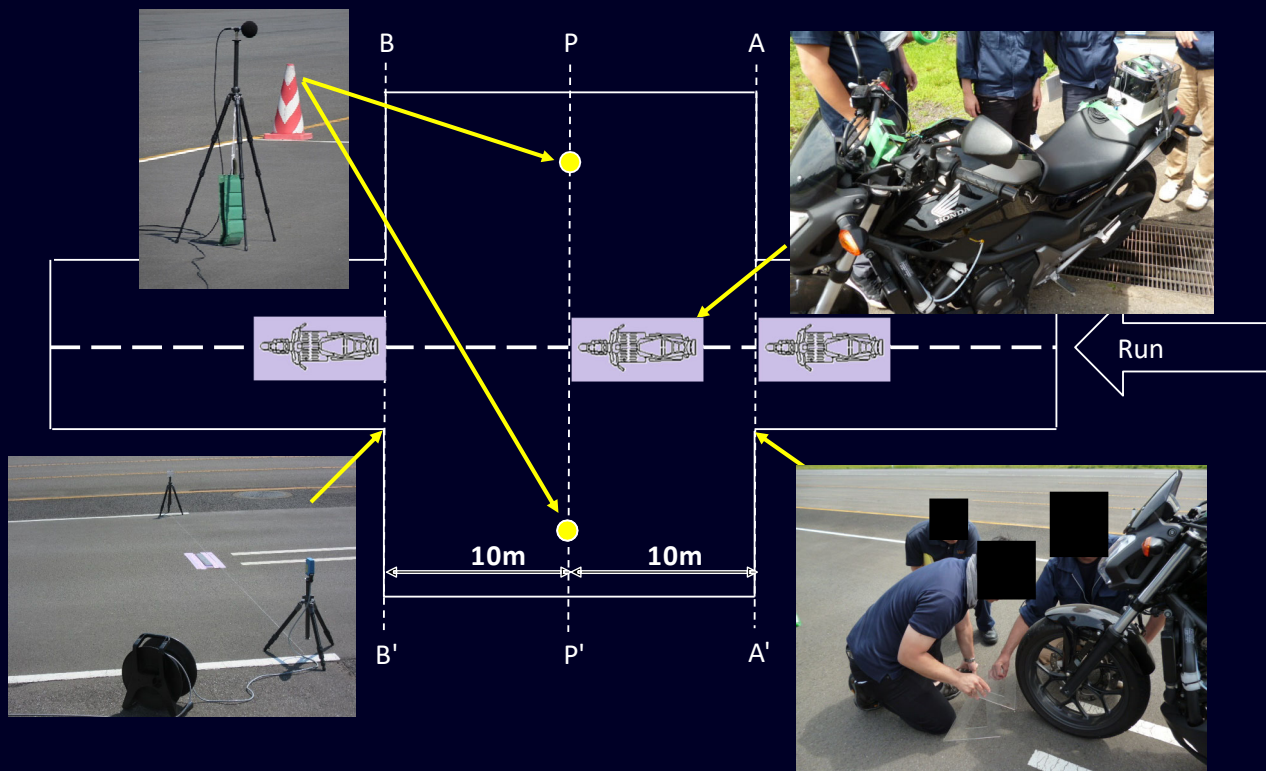
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Noise of acceleration section



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Noise of acceleration section



Noise of acceleration section



Noise of acceleration section

Target	Check point
Speed	$V_{AA'} = 50 \pm 1 \text{ km/h}$
Vehicle mass	Curve mass + 75 kg (running order)
Gear position	2nd gear (gear ≤ 4) 2nd and 3rd gear (gear ≥ 5)
Running condition	Full throttle
Environmental conditions	0 - 40 degrees C (ambient temperature) $\leq 5 \text{ m/s}$ (wind speed)
Ambient noise	Ambient noise + 10 (dB) \leq Vehicle noise (dB)

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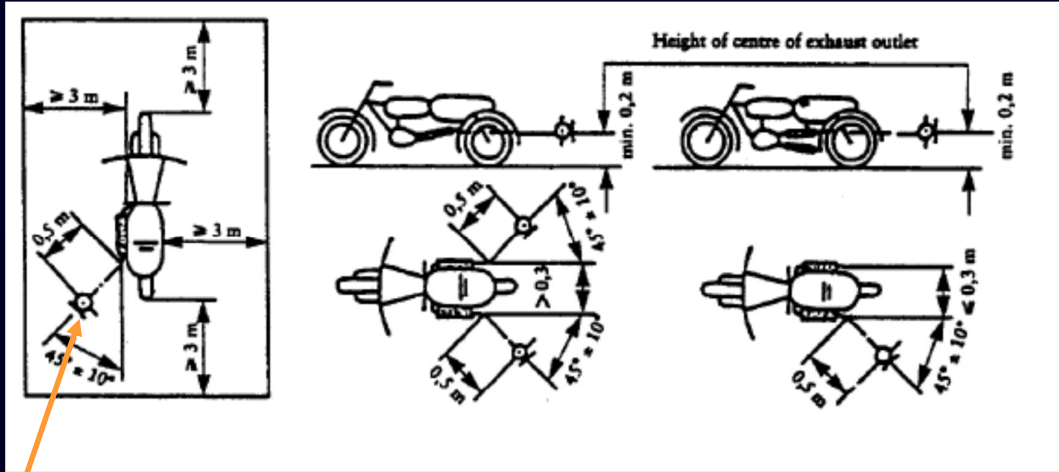
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Noise of stationary section

Microphone point



Microphone

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Noise of stationary section

Check point

Reference point of
the exhaust pipe

Located at a distance 0.5 m
from the reference point of the exhaust pipe

Located at an angle 45 deg. (+/-10 deg.)
to the vertical plane containing the flow axis of the pipe termination

Target engine speed 50 % of the engine speed S ($5,000 \leq \text{rated engine speed}$)
75 % of the engine speed S ($\text{rated engine speed} < 5,000 \text{ min}^{-1}$)

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Test equipment



Tachometer

(Speed measuring device)



Monitor (speed)

On the bicycle



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Difference of 03 series and 04 series

Acceleration

Target	03 series	04 series
Speed	$V_{AA'} = 50 \pm 1 \text{ km/h}$	$V_{pp'} = 50 \pm 1 \text{ km/h}$
Vehicle mass	Running order (Curve mass + 75 kg)	Running order (Curve mass + 75 kg)
Gear position	2nd gear (gear ≤ 4) 3rd gear (gear ≥ 5 , cylinder capacity ≤ 175) 2nd and 3rd gear (gear ≥ 5 , cylinder capacity > 175)	most nearly calculated acceleration e.g.) $\alpha_{wot_ref} = 2.47 \times \log(PMR) - 2.52$
Running condition	Full throttle	Full throttle
Environmental conditions	5 - 40 degrees C (ambient temperature) $\leq 5 \text{ m/s}$ (wind speed)	5 - 40 degrees C (ambient temperature) $\leq 5 \text{ m/s}$ (wind speed)
Ambient noise	Ambient noise + 10 dB \leq Vehicle noise (dB) (+ 10- 15dB : need to correction)	Ambient noise + 10 dB \leq Vehicle noise (dB) (+ 10- 15dB : need to correction)

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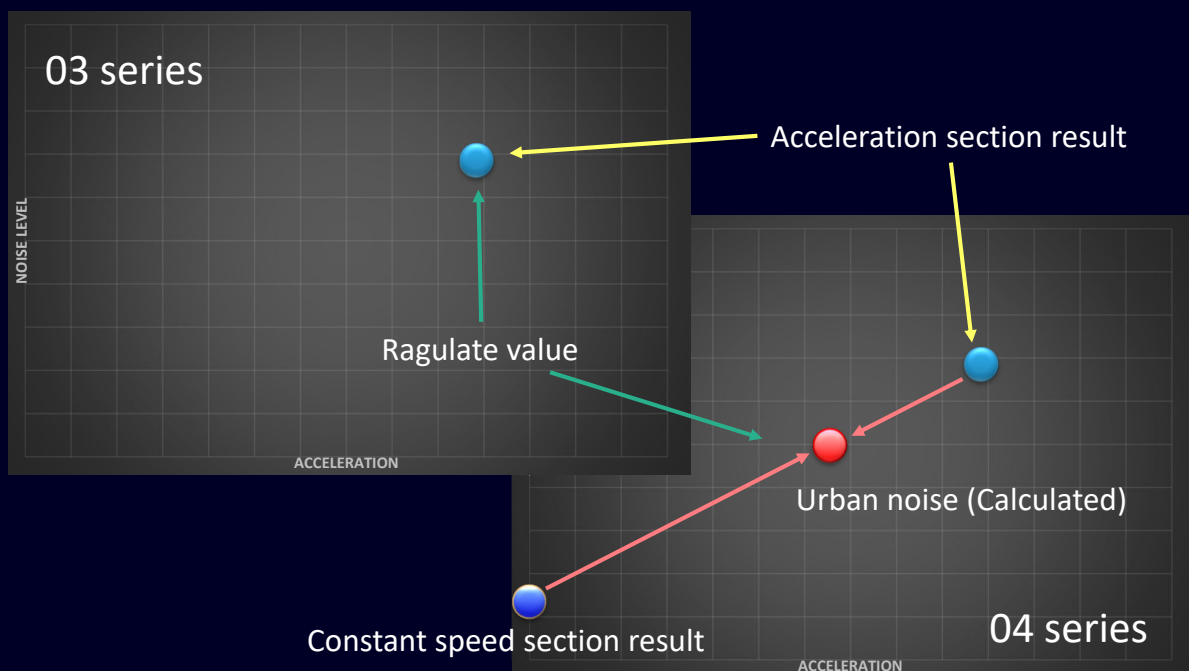
Difference of 03 series and 04 series

Constant speed section

Target	03 series	04 series
Speed	None	$V_{AA'} = V_{PP'} = V_{BB'} = 50 \pm 1 \text{ km/h}$
Vehicle mass	None	Same as Acceleration section
Gear position	None	Same as Acceleration section
Running condition	None	Constant speed (Acceleration $\dot{=} 0.0 \text{ m/s}^2$)
Environmental conditions	None	Same as Acceleration section
Ambient noise	None	Same as Acceleration section

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Difference of 03 series and 04 series



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Difference of 03 series and 04 series

Stationary section

Stationary section of 04 series is same as 03 series.

Thank you for your attention !