
Manufacturer:

Columbusmaskiner AB

Machine Model:

Columbusmaskiner SP75-PC Wheel Spinner

Test Date:

2024-12-03

Tested By:

Alexander Österström & Jari Palosaari

Test Location:

Workshop Hejargatan 13, 632 29 Eskilstuna

1. Test Equipment

- Sound Level Meter:

UNI-T 48880

- Test Distance from the Machine:

1 meter from the machine

- Test Position:

The microphone was placed at a height of approximately 1.6 meters from the machine's sound emission, in an open environment without reflections.

2. Test Procedure

- Type of Test:

Idle running test, wheel spinning was performed 10 times.

- Test Duration:

The test was conducted over about 2 minutes of the machine's operation.

- Referenced ISO Standards:

- EN ISO 3744:2010 – "Acoustics — Determination of sound power levels of noise sources — Engineering methods for an essentially free field over a reflecting plane"

- EN ISO 11201:2010 – "Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions"

- EN ISO 11202:2010 – "Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a specified distance from the source"

3. Measurement Results

- Equivalent Continuous A-weighted Sound Pressure Level:
- Idle running: 45 dB(A)
- Wheel spinning: 78 dB(A)
- (A) is the average value of 10 measurements of the equivalent sound pressure level.
- Each measurement consists of 10 wheel spins over 2 minutes.

- Maximum C-weighted Sound Pressure Level:
- 78 dB was the highest value measured during 10 wheel spinning tests.

- Surrounding Sound Level (Background Noise):
- Result 45 dB(A)

- Test Conditions:
- Indoor, Temperature: 19°C

Measurement Uncertainty: The estimated measurement uncertainty for the recorded sound levels is ± 1.5 dB(A) according to ISO 3744 and ISO 11201.

4. Compliance with EU Regulations

- Machinery Directive 2006/42/EC:

According to Machinery Directive 2006/42/EC, Annex I, machines must be designed and constructed so as not to cause risks to the user or others. The directive specifies sound level requirements to ensure that machines do not cause harmful effects on workers' health, particularly with regard to prolonged noise exposure.

- Article 12 of the Machinery Directive requires that the machine meets the essential health and safety requirements, including sound levels that should not exceed harmful levels.

- Annex I (point 1.5.4) states that sound levels must be considered to protect workers' health, which means that machines must be tested and documented to ensure that sound levels do not exceed specified limits.

- Maximum Permitted Sound Level:

Reference to relevant EU standards:

According to EN ISO 3744:2010, the sound level must not exceed 85 dB(A) at a distance of 1 meter. This aligns with the requirements set in Annex I of the Machinery Directive to protect workers' health.

- Result:

The machine does not exceed the maximum sound levels according to the standards or specifications for this type of machine.

- In the test at a 1-meter distance, the sound level measured during wheel spinning was 78 dB(A), which is below the maximum allowed value of 85 dB(A).
- The maximum C-weighted sound pressure level of 78 dB is within acceptable limits for momentary sound levels, but it is important to ensure that it is not harmful during longer exposures.

5. Summary and Conclusions

- The machine meets the sound level requirements:

Yes, the machine meets the sound level requirements according to EN ISO 3744 and EN ISO 11201. The sound level during wheel spinning (78 dB(A)) is below the allowed limit of 85 dB(A).

- Other Observations:

No significant noise deviation was observed during the test. The idle sound level was relatively low (45 dB(A)), and the wheel spinning sound level (78 dB(A)) is acceptable.

- Recommendations:

No further action is required. The test results are within approved limits, and the machine meets the sound requirements for CE marking.

6. Approval

- Test Leader (Name, Title):

Jari Palosaari, Test Leader

Date: 2024-12-03

- Responsible for the machine's CE marking:

Alexander Österström, Technical Manager

Date: 2024-12-03

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