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**The influence of the design parameters of centrifugal fans on the
difference between outlet and inlet noise levels**

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The operation of the industrial centrifugal fans is accompanied by the air-borne noise generation thanks to such phenomenon as: vortex formation within blade channels of impeller (because of flow separation in channel) and interactions between vortex wakes (at outlet of impeller) and cut-off of fan casing. Sound waves, which are formed at outlet of blade channels and within fan casing, propagate as through outlet side of casing, as in opposite direction: through rotating blade channels of impeller and inlet cone of casing. As it follows from theoretical analysis and experimental research the noise levels at outlet side of centrifugal fan are higher than noise levels at inlet of fan (as for broadband as for tonal noise), because of noise reduction, which is caused by sound wave propagation through inhomogeneous channel, consisted of impeller and inlet cone of casing. The efficiency of the noise reduction depends on the design parameters of impeller and casing. In particular, according to results of research the difference between levels of noise, radiated from outlet and inlet sides of fan, depend on: shape of blade channels, relation between width of casing and impeller.