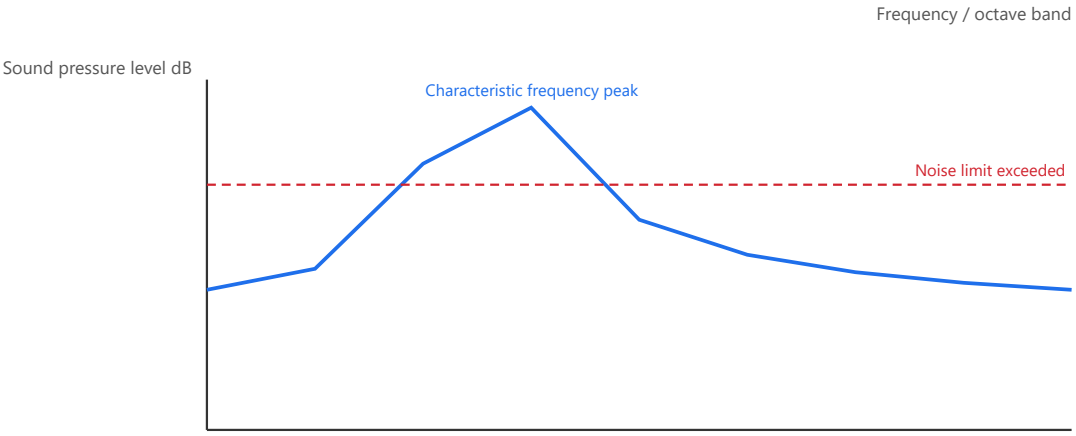
FM603 Silencer Failure

Chapter 6: Comprehensive Technology — Fault model & typical case

DOCUMENT	CHAPTER	RELATED Q&A	PUBLISHER
FM603	**Comprehensive Technology**	**6-37, 6-38**	**Kunshan Best Machinery Equipment Co., Ltd.**

Fault model + typical case. Mechanism, causes, symptoms, diagnosis, corrective actions and prevention are all anchored to the relevant entries of the Fan Engineering Q&A (see front matter for question references).



FM603 Silencer Failure: a plugged or detached absorbing structure not only raises the sound pressure level again but may add duct resistance; clean the silencer, confirm the flow direction and refit it correctly.

Failure Mechanism

Improper installation or maintenance of a silencer such as the ZLX type (6-37 characteristics, 6-38 installation and use) blocks or detaches the sound-absorbing structure, so noise reduction fails and system resistance may even increase.

Common Causes

- Never cleaned
- Installed reversed / air leakage

Failure Symptoms

- Noise rises again, resistance may increase

Diagnosis & Evaluation

- Check the silencer condition and flow direction

Corrective Actions

- Clean / refit the silencer

Preventive Measures

- Maintain the silencer periodically

Typical Failure Case (Summary)

- Case 1 (assessment of silencer failure in a fan room): after a silencer was installed in a fan room, the actual noise reduction was only 12dB(A), far below the designed 25dB(A); analysis showed the silencer did not match the duct. The same assessment also found a silencer in another fan room that was blocked by dust and had not been cleaned in time; the increased ventilation resistance raised noise by 10dB(A) and also affected equipment operating efficiency. Root cause: improper silencer selection and matching, and dust plugging that disabled the sound-absorbing structure while adding resistance (corresponding to improper installation and maintenance in 6-37 and 6-38). Corrective actions: clean the blockage and re-match the silencer to the duct duty.
- Case 2 (boiler forced-draft fan silencer fault at Guiyou Technology, Cili County): the original boiler forced-draft fan silencer had failed; in 2020 the faulty silencer was replaced, and large-size silencers plus sound-insulating cotton were added to the ID/FD fan ducts, after which the noise at the plant boundary was measured and found compliant.

This document is reference material prepared for engineering review, distilled from BEST's fan engineering Q&A archive. It does not constitute a certified performance curve or a project commitment; final selection, performance and warranty remain subject to a project-specific technical review and written confirmation.