

同济大学声学研究所
INSTITUTE OF ACOUSTICS TONGJI UNIVERSITY

测试报告

TEST REPORT

测试项目：消声器声学性能

Test project: Acoustic performance of muffler

测试内容：测试并计算消声器插入损失、压力损失

Test content: Insert method test and calculate muffler noise reduction and resistance loss

委托单位：无锡市金海螺旋管厂

Client: Wuxi Jinhai Spiral steel pipe Factory

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审核者：

Checker:

盖章：

Seal:



报告日期：2014年06月20日

Report date: 2014-06-20

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注意事项：

Notes:

1. 报告未盖测试单位公章无效。

The test report uncovered the official seal is invalid.

2. 复制报告未重新加盖委托单位公章无效(若对报告有疑问, 应查阅测试报告原件)。

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3. 报告无测试人、审核人签名无效。

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4. 报告涂改无效。

The altered report is invalid.

5. 报告页数不全无效。

Uncompleted report pages are invalid.

6. 测试结果仅对提供的测试样机负责。

Test results are just responsible for the providing test sample.

7. 对测试报告有异议, 应于收到报告之日起十五日内, 向测试单位提出, 逾期不予受理。

Presented to the Test unit about the objection to the test report within fifteen days from the date of receipt. Overdue will not be accepted.





1. 试件名称 (型号): CDDS 型 (阻性) 管式消音器

Specimen (Model): Duct silencer, CDDS type

2. 试件规格 Model Size:

外形尺寸 260 mm×260 mm×700 mm; Specimen size: 260 mm×260 mm×700 mm

法兰尺寸 Φ200mm; Flange size: Φ200mm

有效长度 580mm; Effective length: 580mm

3. 测试条件 Operation condition:

分静态 (无气流通过) 和动态 (风速分别为 3m/s, 6m/s, 9m/s) 两种运行工况, 风速以消声器进风口截面动压为标定值。当工况运转稳定时, 分别测量消声器的插入损失和阻力损失。

Steady state (without airflow) and dynamic state (with airflow). The flows are 3m/s, 6m/s, 9m/s respectively for the dynamic state. The test will be started when the two work conditions remain stationary.

4. 测试标准 Test criterion:

整个测试过程参照国家标准 GB / T4760—95《声学消声器测量方法》、国际标准 ISO 7235-2003《声学. 管道消音器和风口单元装置的实验室测量步骤. 插入损失, 气流噪声和总压损失》执行。

The whole test will be done under the guidance of GB / T4760—95 : Acoustic muffler measurement method and ISO 7235-2003: Laboratory measurement procedures for ducted silencers and air-terminal units - Insertion loss, flow noise and total pressure loss.

5. 测试仪器 Operation equipment:

传声器 Transducer	BSWA MPA231
功率放大器 Power amplifier	Crown XLS602
微压计 Micromanometer	SYT-2000+标准毕托管 SYT-2000 and Standard pitot tube
分析仪 Analyser	U.S.A NI PX1-1042Q + Sound Express
校准器 Calibrator	日本 ONO SOKKI SC-2110





6. 测试结果 Test result:

(1) CDDS 型 (阻性) 管式消音器插入损失 (dB)

Noise reduction of CDDS Duct silencer (unit: dB)

工况 condition		频率 frequency(Hz)	63	125	250	500	1K	2K	4K	8K	A
空管 Empty tube	静态 steady		58.7	60.1	63.1	70.4	71.5	67.9	58.9	59.6	74.8
	3m/s		60.5	63.4	64.3	71.0	71.6	68.2	58.6	60.4	75.0
	6m/s		61.9	62.6	63.4	70.9	71.5	68.4	58.7	60.3	75.0
	9m/s		61.3	62.3	63.2	71.1	71.4	68.3	58.6	60.4	75.0
CDDS 型 (阻性) 管式消音器 CDDS Duct silencer	静态 steady		56.0	56.4	58.5	60.7	54.7	42.4	40.5	48.7	60.4
	3m/s		57.5	58.7	58.6	61.1	54.5	42.2	39.9	48.3	60.6
	6m/s		58.9	58.5	58.7	61.2	55.0	42.2	40.2	48.3	60.6
	9m/s		58.4	57.9	58.8	61.1	55.4	42.3	40.7	47.8	60.7
插入损失 Noise reduction	静态 steady		2.7	3.7	4.6	9.7	16.8	25.5	18.4	10.9	14.4
	3m/s		3.0	4.7	5.7	9.9	17.1	26.0	18.7	12.1	14.4
	6m/s		3.0	4.1	4.7	9.7	16.5	26.2	18.5	12.0	14.4
	9m/s		2.9	4.4	4.4	10.0	16.0	26.0	17.9	12.6	14.3

(2) 消声器压力损失 Resistance loss:

型号 model	流量 flow	压力损失 Resistance loss
CDDS 型 (阻性) 管式消音器 CDDS Duct silencer	3m/s	4Pa
	6m/s	8Pa
	9m/s	15Pa

