FLOWTECH

FSD Series

Fire & Smoke Dampers

CLASSIFIED UL R26192

amca WORLDWIDE CERTIFIED RATINGS AIR LEAKAGE AIR PERFORMANCE AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC. www.amca.org

FLOWTECH CO., LTD. certifies that the FSD11 shown herein are licensed to bear the AMCA Seal. the ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Programs. The AMCA Certified Ratings Seal applies to air Leakage and air performance ratings only.

R26192 UL 555 listing: R26192

FSD Series

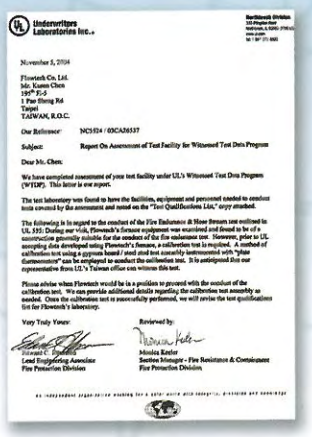
Fire & Smoke Dampers

FLOWTECH

GLOBALLY RECOGNIZED CERTIFICATIONS AND STANDARDS

Ventilation Performance and Smoke management Laboratory

Any series of ventilation products such as fans, dampers required performance and quality requirements, can be provided by the laboratory for a full range of testing services. Technical requirements with an independent and impartial implementation for each test was supervision under by TAF, hence, all the domestic public works and fire safety related with ventilation products, do not have to shift the products to oversea for testing, and those owners and consultants would not have the trouble for witnessed commuting to foreign countries any more, this even saving more time and costs.


Underwriters Laboratories Inc.®

November 5, 2004

Flowtech Co. Ltd.
Mr. Kuen Chen
10th Fl-5
1 Pao Shing Rd
Taipei
TAIWAN, R.O.C.

Our Reference: NC5124 / 03CA26537

Subject: Report On Assessment of Test Facility for Witnessed Test Data Program

Dear Mr. Chen:

We have completed assessment of your test facility under UL's Witnessed Test Data Program (WTDP). This letter is our report.

The test laboratory was found to have the facilities, equipment and personnel needed to conduct tests covered by the assessment and noted on the "Test Qualifications List," copy attached.

The following is in regard to the conduct of the Fire Endurance & Hose Stream test outlined in UL 555: During our visit, Flowtech's furnace equipment was examined and found to be of a construction generally suitable for the conduct of the fire endurance test. However, prior to UL accepting data developed using Flowtech's furnace, a calibration test is required. A method of calibration test using a gypsum board / steel stud test assembly instrumented with "plate thermometers" can be employed to conduct the calibration test. It is anticipated that our representative from UL's Taiwan office can witness this test.

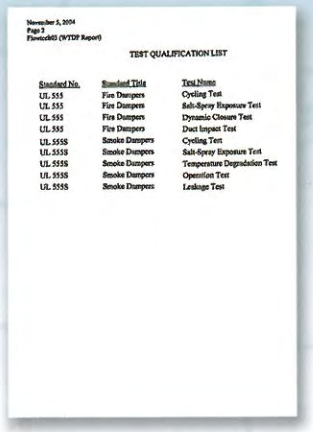
Please advise when Flowtech would be in a position to proceed with the conduct of the calibration test. We can provide additional details regarding the calibration test assembly as needed. Once the calibration test is successfully performed, we will review the test qualifications list for Flowtech's laboratory.

Very Truly Yours:

Steven C. Sunderland
Lead Engineering Associate
Fire Protection Division

Reviewed by:

Monica Kuster
Section Manager - Fire Resistance & Containment
Fire Protection Division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Flowtech01 (WTDP Report)

TEST QUALIFICATION LIST

Standard No.	Standard Title	Test Name
UL 555	Fire Dampers	Cycling Test
UL 555	Fire Dampers	Salt-Spray Exposure Test
UL 555	Fire Dampers	Dynamic Closure Test
UL 555	Fire Dampers	Duct Impact Test
UL 555S	Smoke Dampers	Cycling Test
UL 555S	Smoke Dampers	Salt-Spray Exposure Test
UL 555S	Smoke Dampers	Temperature Degradation Test
UL 555S	Smoke Dampers	Operation Test
UL 555S	Smoke Dampers	Leakage Test

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Fan Performance Testing Facility

Standards

- AMCA 210
- ISO 5801
- BS 848-1
- DIN 24163-2

Smoke Damper Leakage Testing Facility

Standards

- AMCA 500
- UL 555S
- ISO 10294
- GB 15930

Louver Pressure Drop Testing Facility

Standards

- AMCA 500

Silencer / Acoustical Louver Tesring Facility

Standards

- ASTM-E477
- ISO 7235

Jet Fan Thrust Testing Facility

Standards

- ISO 13350
- BS 848-10

Fire Damper Testing Facility

Standards

- UL 555

Standards

- AMCA 210
- AMCA 300
- AMCA 500
- AS 4429
- ASTM-E477
- ASHRAE 149
- DIN 24163-2
- BS 7346-2
- BS 848-1
- BS 848-2
- BS 848-10
- GA 211
- GB 15930
- EN 12101-3
- ISO 5801
- ISO 7235
- ISO 10294
- ISO 13350
- UL 555
- UL 555S

Exhaust Duct exit of Reverberant

Multiple Nozzles for Flow Measurement

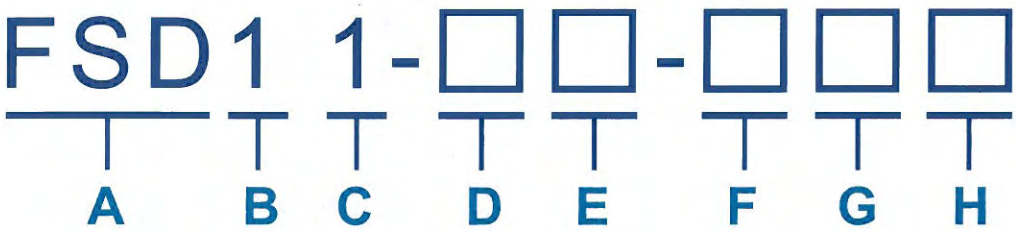
Reverberant Room
360°Routing Microphone in Reverberant

Flow Straightener

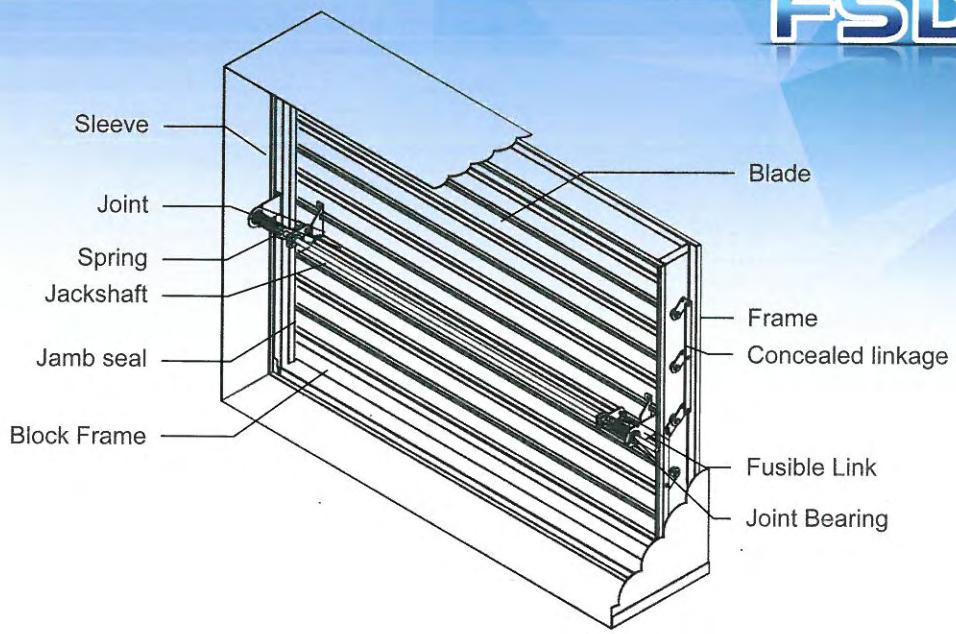
Silencer in Exhaust Duct

Application and design

The FSD11 Fire & Smoke Dampers employs triple-V blades and hat channel frame for point-of origin control of fire and smoke in static and dynamic smoke management systems. The Maximum Velocity Rating is 2000 ft/min (10.2 m/s), the Static Pressure Rating is 6 in-Wg (1.5kPa) in the duct, the Fire Resistance Rating is 3 hr, and the air leakage is Class I level. It may be used fo the fire wall, dividing wall (the brick wall or the gypsum board) and the floor with the vertical mounting.



A. Product Type		F. Max Velocity (For UL Recognize)	
FSD	Fire & Smoke Damper	1	10.2 m/s (2000 fpm)
B. Blade Type		2	15.2 m/s (3000 fpm)
0	None	3	20.2 m/s (4000 fpm)
1	Triple Vee Blade	**G. Max Pressure (For UL Recognize)**	
C. Air Leakage		A.	0.5 kPa (2 in-Wg)
1	Class I	B.	1.0 kPa (4 in-Wg)
2	Class II	C.	1.5 kPa (6 in-Wg)
3	Class III	**H. Temperature (For UL Recognize)**	
D. Fire Rating (For UL Recognize)		A	74 °C (165°F) Operating
0	None	B	100 °C (212°F) Operating
E. Mounting (For UL Recognize)		C	121 °C (250°F) Operating
V	Vertical	D	141 °C (285°F) Operating
H	Horizontal	E	177 °C (350°F) Operating



Standard construction

Frame: 5"×1"(123mm×23mm) galvanized steel hat channel with interlocking corner gusset.
Blades: 6"×16 gauge (153mm×1.6mm) galvanized steel-triple-V.
Side-Plate: 12"×16 gauge (300mm×1.6mm) galvanized steel.
Jackshaft: 1/2"(12.5mm) diameter plated steel hex.
Linkage: Concealed in frame.
Bearings: Stainless steel oilite, sleeve-type.
Spring: Stainless steel.
Seals: Silicone blade edge seals and flexible metal mount.
Minimum Size: 12"×12" (305mm×305mm)
Maximum Size: 48"×36" (1220mm×914mm)
Multiple Size: 96"×72" (2440mm×1828mm)

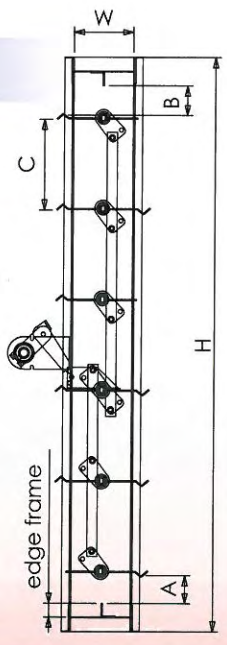
For UL Certification

Ratings

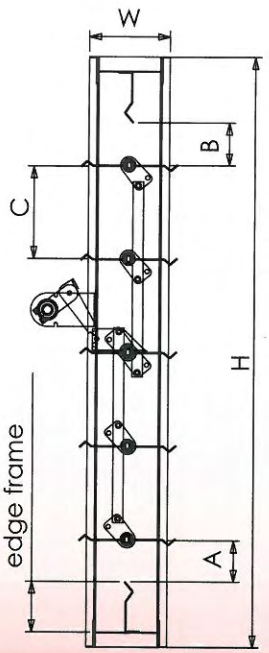
UL 555 Fire Resistance Rating: 3 hour (vertical)
UL 555S Leakage Class:
1 [8 cfm/sq.ft. @ 4 in.wg.]
[(0.04 m3/s/m2 @ 1.0 kPa)]
Maximum Dynamic Closure Velocity:
2,000 fpm (10.2 m/s)
Maximum UL555S Rated Pressure:
6 in.wg. (1.5 kPa)
Temperature: 160~350°F (71~177°C)

Listings

UL 555 and 555S listing: R26192
Meets NFPA Standards: 90A, 92A, 92B and 101
Minimum Size:12"x8" (305x203mm)
Maximum Size:24"x36" (610x914mm)



Type 1 ≤ 914mm×914mm



Type 2 > 914mm×914mm

Options

☐ Alternate actuator

☐ 24 VDC ☐ 110 VAC ☐ 220 V AC

☐ 7 N-m ☐ 13 N-m ☐ 20 N-m ☐ Other

☐ Factory installed sleeve:

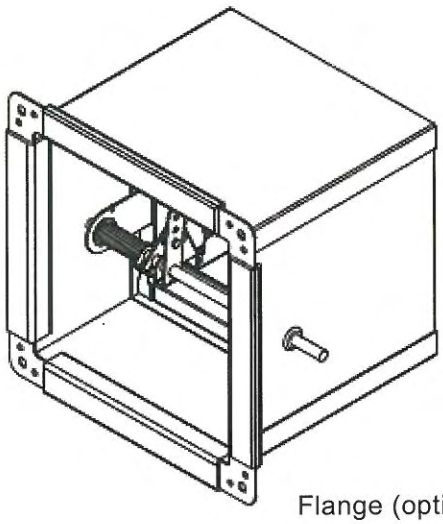
Gauge: ☐ 19# (1.2mm) ☐ 16# (1.6mm)

Length: ☐ 12" (305mm) ☐ 16" (406mm)

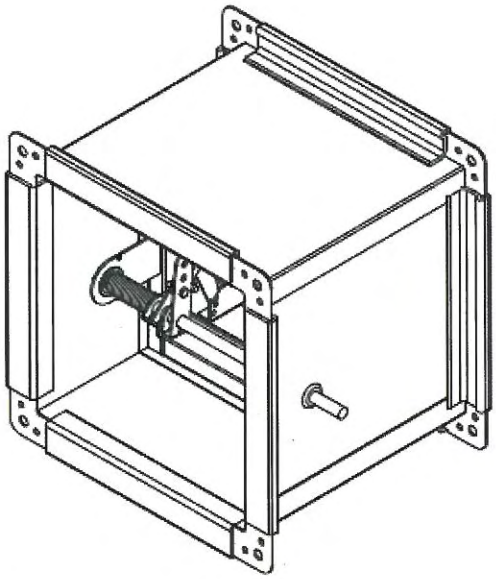
☐ Factory installed:

☐ Side plate (Standard) ☐ Flange

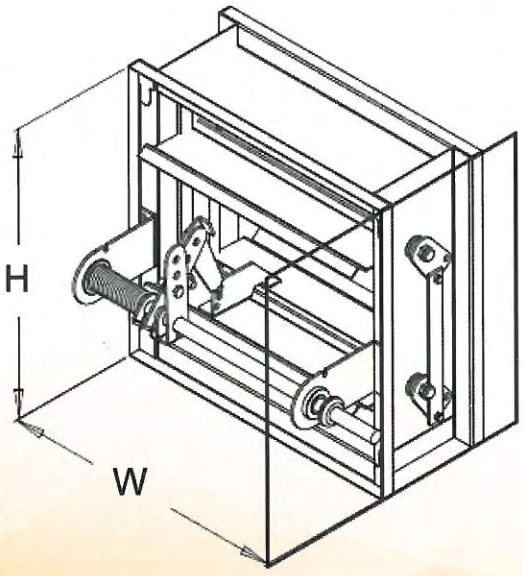
☐ Double Flange ☐ Sleeve



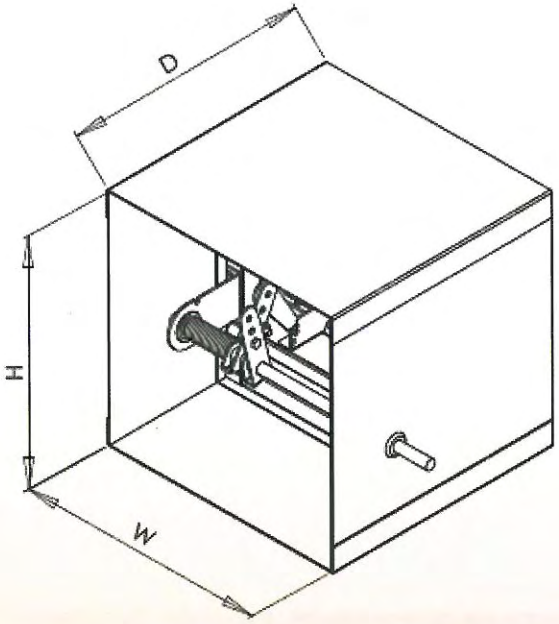
Flange (optional)



Double Flange (optional)



Side Plate (Standard)



Sleeve (optional)

FLOWTECH CO., LTD.

THE FLOWTECH GROUP

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CNo. : FSD11(E) August 2014

AGENT :