

isolation dampers

Rectangular Bubble-Tight Isolation Dampers



Isolation Dampers to protect service personnel during filter change. Also designed to isolate filter section during filter decontamination procedure.



Camfil Farr Isolation Dampers create a barrier between hazardous contaminants and the filter change out components typical to a containment system. Camfil Farr rectangular isolation dampers are bubble-tight when tested to 10" w.g. Every Camfil Farr Isolation Damper:

- Housing is manufactured of 14 and 11-gauge T-304 stainless steel
- Is continuously welded at all pressure barrier points
- Includes a 20" nominal round damper dish (additional dish sizes are available). Damper sealing points incorporate memory intensive closed cell neoprene to create an effective seal for every filter change or decontamination procedure
- Manual gear drive, pneumatic, or electronically activated actuators are available
- Includes pre-drilled out-turned standing flanges for connection to additional housings or existing hardware
- May be mounted in series or in parallel to meet most system isolation requirements.

All Camfil Farr Isolation Dampers are manufactured to industry standard recommended practices and evaluation criteria. Custom designs are also available to meet any individual containment requirement.



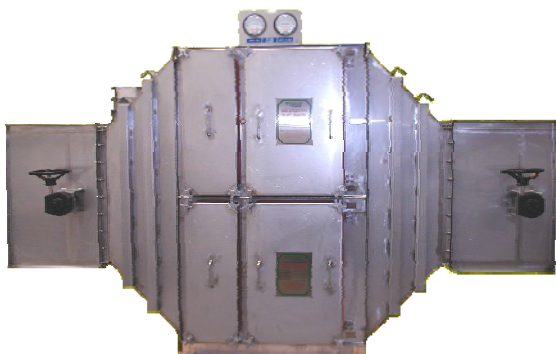
Camfil Farr	Product bulletin
Isolation Dampers	3440S - 0606
Camfil Farr—clean air solutions	

Isolation dampers create a positive shut-off and isolation of hazardous contaminants when incorporated in a containment system. During filter change the dampers are closed to ensure the safety of the filter service personnel during filter change.

Electric and pneumatic actuators may incorporate a fail-safe closed position (standard) or fail-safe open position as required by the application. Consult factory with application requirements.

Isolation dampers are also used in systems where decontamination of system components are a part of the filter changing procedure.

Typically the dampers are closed, after which a decontamination substance (usually formaldehyde, dependent upon the hazardous contaminants of concern) is introduced to the internal components of the isolated housing detoxifying biohazard components. Injection ports are required on the containment housing components for this process.



From left to right: A containment system with upstream isolation damper, transition, prefilter section, primary filter section, transition and downstream isolation damper.



Optional electric actuator with fail-safe hand wheel. Manual actuators are standard. A wide variety of electric or pneumatic actuators are available.

Typical Applications	
Hospital Infectious Isolation Suites	Most common are systems for the control of mycobacterium tuberculosis
Pharmaceutical Facilities	As part of the procedures for drug processing quality control
Food Processing	As part of a control system to prevent contamination of consumer goods, to protect plant personnel
Biotechnology Laboratories	To ensure genetic and biotech research is uncompromised, or contained and eliminated for the protection of laboratory personnel
University Laboratories	To ensure the safety of students, personnel and prevent the exhaust of harmful contaminants
Industrial & Chemical Manufacturing Facilities	To ensure the safety of personnel and prevent the exhaust of harmful contaminants
Nuclear Processing Facilities including utility power plants and research facilities	
Veterinary & Animal Research Facilities	
Military Facilities	
Semiconductor Manufacturing Facilities	

SPECIFICATIONS

CAMFIL FARR RECTANGULAR BUBBLE-TIGHT DAMPERS



General

1.1 - Dampers shall be rectangular dish style type tested to be bubble-tight per ASME N510-1980.

1.2 – Quantity and application shall be as noted on enclosed drawings or other supporting documents.

2.0 Construction

2.1 - The damper shall be manufactured from 14 ga. and 11 ga. T-304 stainless steel sheet metal. The damper shall have a 20" (nominal) T-304 stainless steel, dish-shaped closure with a knife edge that seats against a 11 ga. T-304 stainless steel frame with a closed-cell neoprene gasket. The effect shall be a leak free gasket-to-knife edge seal. The damper shall have a 1-½" wide 11 ga. flange on the inlet and outlet with pre-drilled mounting holes. Bolt hole spacing is in accordance with the recommendation in ERDA76-21, "Nuclear Air Cleaning Handbook" (4" inches or less on centers). The damper shall be adequately reinforced to withstand a negative or positive pressure of 15" water gage.

2.2 - All 'pressure retaining' weld joints and seams shall be continuously welded with no porosities allowed. Joints and seams requiring only intermittent welds, such as reinforcement members, shall be intermittently welded. Damper shall be free of all burrs, and sharp edges. All weld joints and seams that are a portion of any gasket sealing surface (duct connection flanges), shall be ground smooth and flush with adjacent base metals. All welding procedures, welders and welder operators shall be qualified in accordance with ASME Boiler and Pressure Vessel Code, Section IX. All welded joints and seams shall be wire brushed to remove heat discoloration.

(2.3 - Manual Actuator

The damper shall be factory equipped with a manual actuator with a hand wheel and quarter-turn manual worm gear. The actuator housing and cover are cast iron, worm gears are heat-treated carbon steel, worm wheels are cast ductile iron, input shafts are carbon steel, shaft and worm seals are Buna-N-Rubber, housing-to-cover seals are impregnated cellulose fiber, bushings are oil impregnated copper nickel steel alloy.)

(2.3 - Pneumatic Actuator

The damper shall be factory equipped with an pneumatic rotary type actuator with flow control valves. (Customer to specify available air pressure.)

(2.3 - Electric Actuator

The damper shall be factory equipped with an electric rotary actuator. The motor shall be high-torque, single-phase, reversible, with a capacitor operated motor and factory set travel limit switches. The unit shall also be equipped with a motor brake. (Customer to specify speed and voltage)

3.0 Performance

3.1-All welding procedures, welders, and welder operators shall be qualified in accordance with ASME Boiler and Pressure Vessel Code, Section IX. All production welds shall be visually inspected qualified personnel, per Camfil Farr standard procedure number CFW-10001, Visual Inspection of Welds, which incorporates the workmanship acceptance criteria described in Section 5&6 of AWS D9.1-1990, Specification for Welding of Sheet Metal.

3.2 -The damper shall be manufactured under a Camfil Farr Quality Assurance Program (see Note 1 Below). The damper blade shall be tested in the closed position at +10" w.g. and shall be bubble tight when tested in accordance with ASME N510-1980, "Testing of Nuclear Air Cleaning Systems". The complete damper pressure boundary shall be leak tested at +15" water gage and have a maximum leak rate of 0.0005 cfm per cubic foot of housing volume.

3.3 - Manufacturer shall provide evidence of facility certification to ISO 9001:2000.

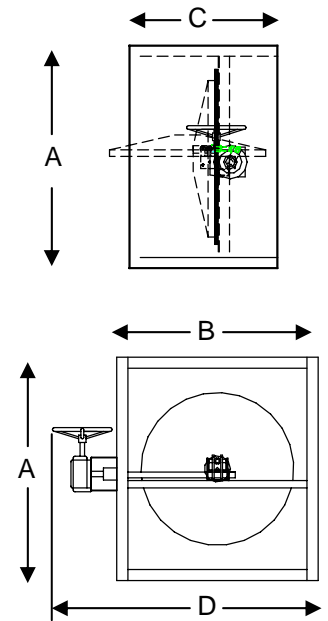
Note 1 (to specifying engineer): Camfil Farr manufacturers all of its containment products using more than one Quality Assurance Program. Our *product-wide* Quality Assurance Program is a stringent process that ensures the equipment is produced in conformance with our understanding of the intended application. However, this *product-wide* program does not address all the items specified in ASME-NQA-1. If this product must be manufactured under an ASME NQA-1 Quality Assurance Program, please add the following to this statement "including the basic requirements of ASME NQA-1." Please contact the factory if specific clarifications are required.

* Items in parentheses () denote optional selections. On this page this includes section 2.3.

PERFORMANCE DATA

RECTANGULAR BUBBLE -TIGHT DAMPERS

Model Number	Damper Diameter (inches)	Actual Dimensions (inches)			Maximum Width (D) (inches)	Approx. Weight (lbs)
		Height (A)	Width (B)	Depth (C)		
CF - 1 x 1 - BTD - 20 - M - SS	20	30	27	20	37	94
CF - 1 x 2 - BTD - 20 - M - SS	20	30	51	20	61	189
CF - 1 x 3 - BTD - 20 - M - SS	20	30	75	20	85	283
CF - 2 x 1 - BTD - 20 - M - SS	20	60	27	20	37	188
CF - 2 x 2 - BTD - 20 - M - SS	20	60	51	20	61	378
CF - 2 x 3 - BTD - 20 - M - SS	20	60	75	20	85	566
CF - 3 x 1 - BTD - 20 - M - SS	20	90	27	20	37	282
CF - 3 x 2 - BTD - 20 - M - SS	20	90	51	20	61	567
CF - 3 x 3 - BTD - 20 - M - SS	20	90	75	20	85	849
CF - 4 x 1 - BTD - 20 - M - SS	20	120	27	20	37	376
CF - 4 x 2 - BTD - 20 - M - SS	20	120	51	20	61	756
CF - 4 x 3 - BTD - 20 - M - SS	20	120	75	20	85	1132



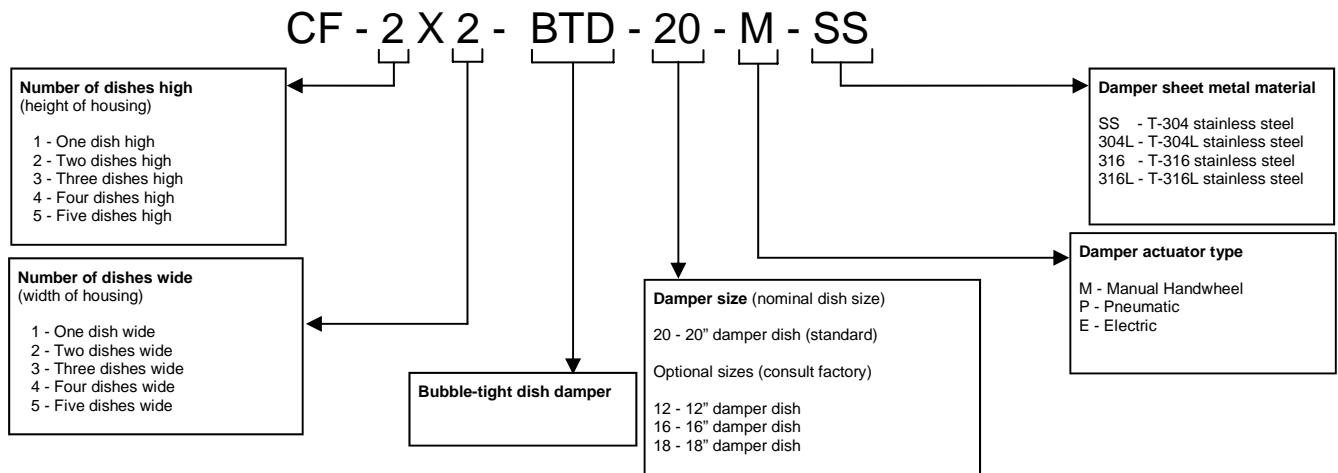
Data Notes:

Unit is completely factory assembled.

Direction of access must be specified. To determine direction of access, imagine you are standing on the upstream end of the housing so that the airflow would strike your back. If the door is on the left, then the unit is left hand access, if the door is on the right then the unit is right hand access.

There are many options when considering electric or pneumatic actuators. Some include solenoid valves and switches. Contact factory for assistance.

MODEL NUMBER DATA



Camfil Farr has a policy of uninterrupted research, development and product improvement. We reserve the right to change designs and specifications without notice.

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