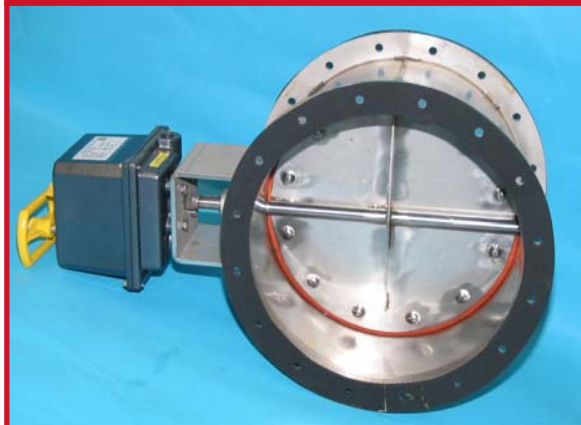


isolation dampers

Round Low-Leak or Bubble-Tight Isolation Dampers



Isolation dampers protect service personnel during filter change. They are also designed to isolate the filter section during biohazard decontamination processes.



Optional electric actuator with manual hand wheel override. Manual actuators are standard. A wide variety of electric or pneumatic actuators are available.

Camfil Farr Round Isolation Dampers create a barrier between hazardous contaminants and the filter change out components typical to a containment system. The Camfil Farr round isolation damper is available in either a low leak¹ or bubble-tight² model. Every Camfil Farr Isolation Damper:

- Is manufactured of 11-gauge and 7-gauge T-304 stainless steel. T-316L is also available.
- Is continuously welded at all pressure barrier points
- Is available in a wide variety of sizes, from 6" to 32" in 2" increments.
- Manual, pneumatic, or electric actuators are available.
- Includes pre-drilled bolt holes in out-turned standing flanges for connection to matching housing or duct work.

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.

¹ Low-leak isolation dampers are tested in the closed position at + 10" w.g. by the pressure decay method per applicable sections of ASME N510-1995.

² Bubble-tight dampers are tested in the closed position at + 10" w.g. to bubble-tight specification per applicable sections of ASME N510-1980.



Camfil Farr	Product bulletin
Isolation Dampers	3440R - 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.

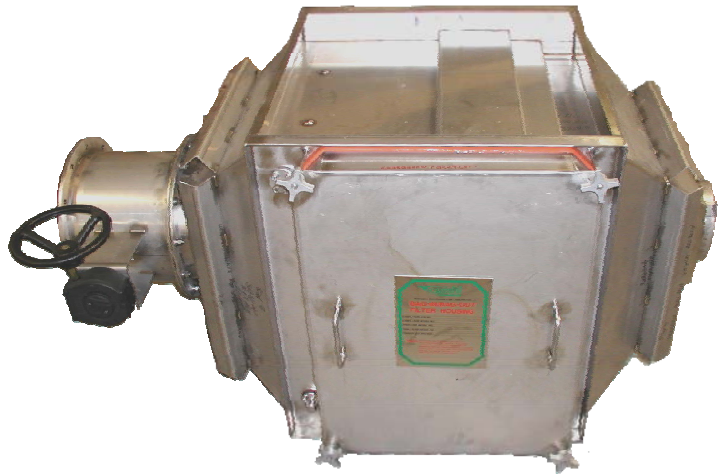
Dampers may include manual (standard), pneumatic, or electric actuators. Consult factory for assistance in selection as many options are available.

Isolation dampers are also used in systems where decontamination of system components is 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 for this process.

A low leak damper has a less stringent testing evaluation than a bubble-tight damper. Each low leak damper is tested to ensure that the leak rate across the blade is no greater than 0.029 cfm per inch of blade circumference at 10" w.g.

A bubble-tight damper is leak tested to be bubble-tight at 10" w.g.. They should be used for component isolation per ASME N510-1995 reaffirmed



Camfil Farr GB Housing with isolation damper (left inlet).

Typical Applications	
Hospital Infectious Isolation Suites	most common are systems for the control of mycobacterium tuberculosis, as isolation or decontamination dampers
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, as isolation or decontamination dampers
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 ROUND DAMPERS

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General

1.1 - Dampers shall be round, flat blade type tested to be (low leak, bubble-tight) per ASME N510-1995 reaffirmed.

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 11 gauge and 7 gauge T-304 stainless steel sheet metal. The damper shall have (2) 7 gauge, T-304 stainless steel blades with a silicone gasket between them to seal against the inside wall of the damper. The damper shall have a 1-½" wide 7 gauge flange on the inlet and outlet with pre-drilled 7/16" mounting holes and ¼" neoprene gasket. Bolt hole spacing is in accordance with the recommendation in ERDA 76-21, *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 by 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 complete pressure boundary of the damper housing shall be leak tested at 15" w.g. per the "Pressure Decay Method" in accordance with *ASME N510-1995 Reaffirmed, Testing of Nuclear Air Cleaning Systems*. The housing shall not exceed a leak rate of 0.0005 cfm per cubic foot of housing volume.

(Please choose one of the specification paragraphs below depending on whether the damper is to be tested as a low-leak damper or bubble-tight).

3.3 -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 N509-1996 Reaffirmed, paragraph 5.9.7.3.

3.3 - 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. by the "pressure decay method" in accordance with ASME N510-1995 Reaffirmed, "Testing of Nuclear Air Cleaning Systems", paragraphs 6 & 7. The blade shall not exceed a leakage rate of 0.029 CFM per inch of circumference of blade.

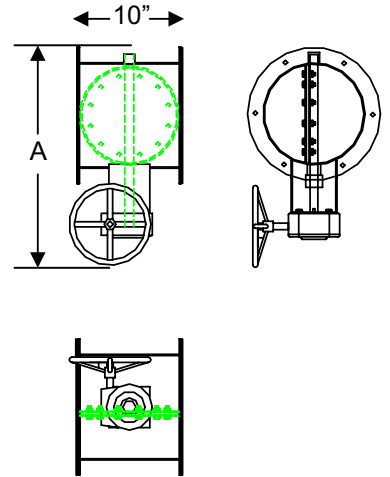
Note 1 (to specifying engineer): Camfil Farr manufacturers all of its containment products using more than one quality assurance program. Our product-wide Quality Assurance Program is a stringent process that ensures the equipment is produced in conformance with our understanding of the intended application. 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

ROUND ISOLATION DAMPERS

Model Number ¹	Flange I.D. (inches)	Flange O.D. (inches)	Bolt Circle	Number of Bolt Holes	Bolt Hole Diameter	Dimension A	Weight (lbs)
CF - __ ¹ FB - 6 - M ² - SS	6	9	7 ½	8	7/16	17	35
CF - __ ¹ FB - 8 - M ² - SS	8	11	9 ½	8		19	45
CF - __ ¹ FB - 10 - M ² - SS	10	13	11 ½	12		21	50
CF - __ ¹ FB - 12 - M ² - SS	12	15	13 ½	12		23	60
CF - __ ¹ FB - 14 - M ² - SS	14	17	15 ½	16		25	70
CF - __ ¹ FB - 16 - M ² - SS	16	19	17 ½	16		27	80
CF - __ ¹ FB - 18 - M ² - SS	18	21	19 ½	16		29	90
CF - __ ¹ FB - 20 - M ² - SS	20	23	21 ½	20		31	100
CF - __ ¹ FB - 22 - M ² - SS	22	25	23 ½	20		32	115
CF - __ ¹ FB - 24 - M ² - SS	24	27	25 ½	24		34	130
CF - __ ¹ FB - 26 - M ² - SS	26	29	27 ½	24		36	140
CF - __ ¹ FB - 28 - M ² - SS	28	31	29 ½	28		39	155
CF - __ ¹ FB - 30 - M ² - SS	30	33	31 ½	28		41	170
CF - __ ¹ FB - 32 - M ² - SS	32	35	33 ½	32		43	190



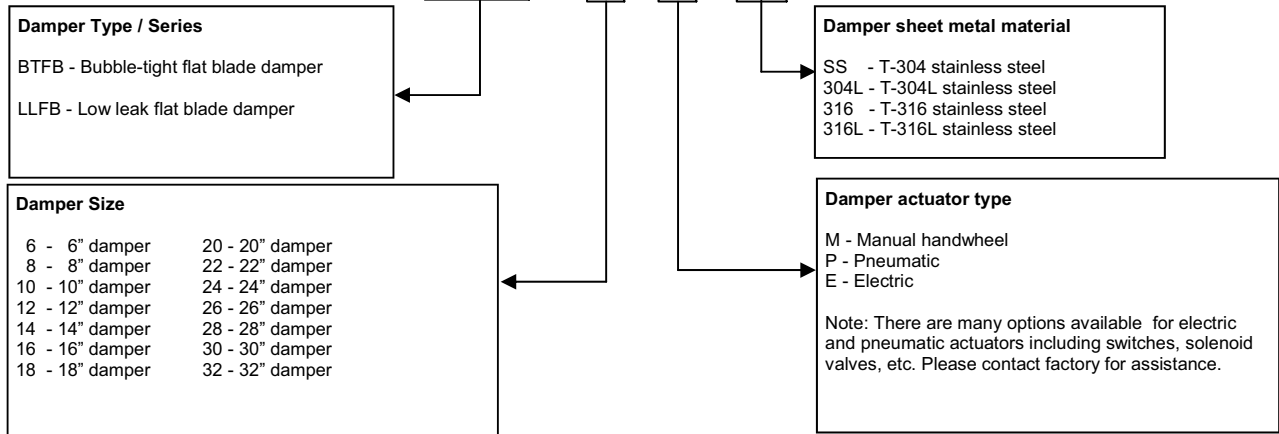
Data Notes:

¹ Replace __ in above model number with LL for low leak or BT for bubble tight. Unit is completely factory assembled.

² Standard damper includes a manual handwheel actuator. There are many options when considering electric or pneumatic actuators. Some include solenoid valves and switches. Contact factory for assistance.

MODEL NUMBER DATA

CF - BTFB - 12 - M - SS



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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