Fire Line Basket Strainer

FP-60F-01

The BERMAD FP-60F-01 Basket Strainers are designed to be installed in fire protection pipelines primarily to prevent the clogging of fire system nozzles of automatic sprinklers, deluge spray or foam systems.

The 60F-01 strainers are also well suited for use upstream of BERMAD Pressure Control Valves and Deluge valves as well as other pipeline debris sensitive Fire System Devices.

To increase safety and reliability of the entire fire protection system the BERMAD 60F-01 strainer has an especially large total flow area ratio of 6 to 1 screen openings area compared to the cross-sectional area of the pipe waterway.

This is 50% higher than the UL standard requirement of a ratio of 1:4, and ensures continued system performance even in the most debris-ridden firewater.

The high capacity of the 60F-01 also results in a lower pressure drop and enables longer intervals between cleaning and servicing.

The BERMAD 60F-01 is designed for in-line maintenance with easy access, requiring only the top cover removal for basket screen cleaning or without removing the main strainer housing body from the pipeline.

NFPA 13 and 15 standards state that listed strainers shall be provided in the main pipeline of all systems using nozzles with waterways less than 3/8” (9.5mm) and for any system where the water is likely to contain obstructive material. Strainers shall be capable of removing all solids of sufficient size to obstruct fire protection devices and equipment waterways.

Features and Benefits

- **UL-Listed and ULC size 3 to 12"** for Fire system pipelines
- **Low pressure drop** – Safety and reliability, ensures firewater availability
- **Easy in-line maintenance** - Top cover removal for cleaning without removing strainer body from the pipeline
- **Suitable to prevent clogging** - Nozzles, sprinklers or other types of fire system discharge outlets. Designed to trap foreign material of 3.2mm (1/8") diameter or larger
- **Large screen basket** – Total area of the screen openings gives a ratio of 6 to 1 of the cross-sectional area of the pipe waterway, Increasing system reliability and safety
- **Suitable for installation in any position** - Refer to installation and maintenance section
- **Compatible for use with corrosive fluids and harsh environments** – FBE coated and corrosion resistant stainless steel 316 screen

Approvals

UL-Listed
Strainers, Pipeline (HLCV. EX26794)

ULC-Listed Certified for Canada
Strainers, Pipeline (LCV7.EX26794)

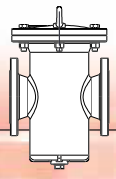
Typical Applications

- Automatic water spray systems
- Deluge systems
- Automatic sprinkler systems
- Foam Applications
- Upstream of Pressure Control valves
- Upstream of a Sensitive System Devices

Options

Consult BERMAD for other Material of Constructions or other available specifications.

BERMAD Fire Protection



Model FP-60F-01

Strainers

Design Engineer Guide

The BERMAD 60F-01 Basket strainers are for use in firewater supply and are capable of preventing the entrance of solids of sufficient size that might block or clog the fire protection nozzles or other devices sensitive to debris contaminated firewater.

Install the 60F-01 strainer upstream of the sprinkler valve, deluge valve, pressure control valve or any other debris sensitive system device.

The Strainer must be located where there is adequate clearance for complete removal of the basket screen assembly to enable easy extraction and cleaning of the strainer basket. Take into consideration the release of water when draining the entire volume of the strainer and piping, as is required before maintenance or inspection.

The drain connection should be typically fitted with an appropriately sized normally closed valve and drain piping.

The 60F-01 Basket Strainers are suitable to be installed in any position, however horizontal installation with the strainer cover facing up is recommended.

The strainers shall be installed and maintained in compliance with the NFPA-25 standard in the addition to the authorities heaving jurisdiction instruction.

The NFPA 13 and 15 standards require that a Listed Strainer shall be provided in the main pipeline of all systems utilizing nozzles with waterways less than 3⁄8" (9.5 mm) and for any system where the water is likely to contain obstructive material. Strainers shall be capable of removing from the water all solids of sufficient size to obstruct the nozzles.

Engineer Specifications:

The Fire Line Strainer shall be a basket type strainer UL listed for 14 bar/200 psi.

The strainer shall be with high flow capacity and low pressure loss.

The strainer body and cover shall be ductile iron ASTM A536 65-45-12 with anti-corrosion Fusion Bonded Epoxy coating internally and externally, RAL 3002 color.

The screen shall be inline removable closed basket type, made of stainless steel 316 with screen holes diameter of 3.2 mm (1/8"), meeting the requirements of NFPA standards 13, 15 and 24. The Strainer Free Flow Area shall be at least 40% of the total screen area and the total area of the screen openings will give a ratio of 6 to 1 compared to the cross-sectional area of the pipeline. Strainer maintenance, inspection or service shall be carried out in-line and without disassembly of the strainer body from the pipeline. The Strainer shall be supplied pre-assembled with stainless steel bolting, hydraulically tested by a factory certified to 9001 standards.

Deluge / Sprinkler System

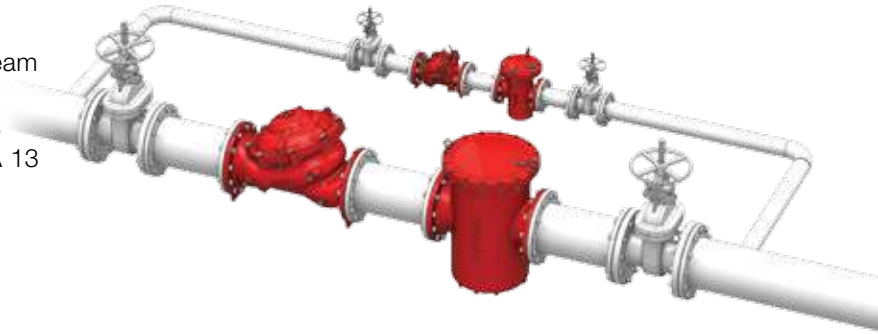
Typical Installations:

Deluge / Sprinkler System

The BERMAD 60F-01 strainer should be installed upstream of the Deluge or Automatic Sprinkler system, preventing debris particles from clogging the fire protection nozzles with waterways less than 3⁄8" (9.5 mm) as per the NFPA 13 and 15 requirements.

Automatic Pressure Control System

The BERMAD 60F-01 strainer is ideal to be installed upstream of the BERMAD Pressure Control Valve, preventing the fouling of valve sealing surfaces and keeping the waterways clear from obstructions.



Automatic Pressure Control System
large sized with low flow bypass

Installation

Provide basket removal clearances and strainer installation provisions in accordance with the requirements given in the Design Engineer Guide section above. Install the strainer with the flow arrow on the body pointing in the desired flow direction.

The strainer shall be installed on the pipeline upstream of the sprinklers, pressure control valve, deluge valve or other sensitive system device. Install a listed isolating valve upstream of the strainer. An adequate support shall be provided to carry the system installation as well as the dynamic loads.

Placing In Service

Verify that all strainer cover bolts are well tightened, close the drain plug and/or drain valve, slowly open the supply-isolating valve and check that there are no leakages. Observe the system pressure gauge: it should indicate that the normal supply of water pressure is maintained.

Maintenance

The following inspection procedure must be performed as indicated, in addition to any specific requirements of the NFPA standards. Any damage or performance deficiency must be immediately corrected.

In addition to the authority having jurisdiction the owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the NFPA 25 code.

The fire system shall be inspected, tested, and maintained by qualified service personnel in accordance with local requirements and/or national codes.

NOTES: A clear permission to shut down the affected fire protection system must first be obtained from the proper authorities. All personnel who may be affected by this action must be notified prior to maintenance action.

After placing a fire protection system back into service, notify the proper authorities and advise those responsible for alarm systems and monitoring.

NOTE: The property owner or designated representative should take care to prevent damage to equipment or the structure during the test. Damage could be caused by the system discharge or by runoff from the test site. It should be verified that there is adequate and unobstructed drainage. Water damageable equipment should be removed or covered as necessary to prevent damage.

Preventive Maintenance

The frequency of inspection should be determined according to the quality of the firewater in use, even so it is recommended that the strainers basket screen be dismantled and cleaned at least annually in addition to after each operation or system flow test.

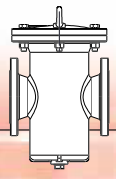
Maintenance Procedure

Verify that the strainer is depressurized and drained before the disassembly of any strainer component.

The strainer basket screen should be cleaned after each system operation or flow test and during routine inspections, as follows:

1. The system must be shut down and completely drained.
2. Remove the strainer cover and the basket screen.
3. Clean out the basket screen, as well as the interior of the strainer body.
4. Reinstall the basket screen, make sure that the basket is fully inserted into the strainer body and is correctly orientated.
5. Inspect the gasket o-ring and replace if needed.
6. Reinstall the strainer cover, gradually cross tighten diametrically and sequentially all bolts so as to apply uniform load for the cover seal.

BERMAD Fire Protection



Model FP-60F-01

Strainers

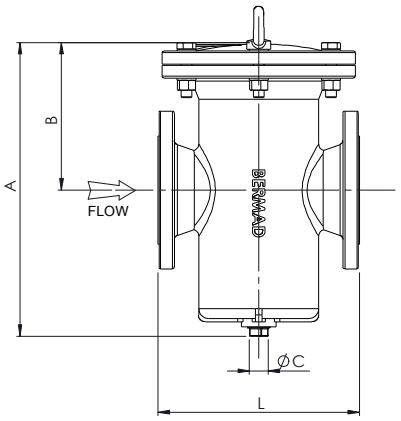
Technical Data

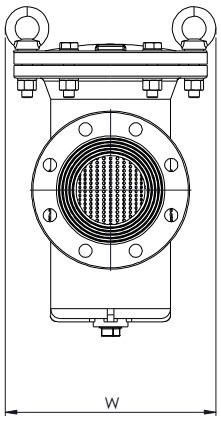
- **Available sizes:** 3, 4, 6, 8, 10, 12, 14, 16, 18, 20 and 24"
- **UL-Listed sizes:** 3, 4, 6, 8, 10 and 12"
- **End connections standard:** ANSI B16.42 #150RF
- **Design pressure / Pressure rating:** 300 psi (20.7 bar)
- **UL-Listed rated pressure:** 200 psi (13.8 bar)
- **Pressure drop:** 3 psi at 15 ft/sec (0.2 bar at 4.57 m/sec) approx
- **Screen hole diameter:** 1/8 inch (3.2 mm) holes diameter
- **Strainer net openings ratio / free flow area:** 6 : 1 / 40%
- **Drain/Blow-Off port:** size 3 - 6" bottom plug, 8 - 24" side plug
- **Temperature rating:** 90˚C / 194˚F

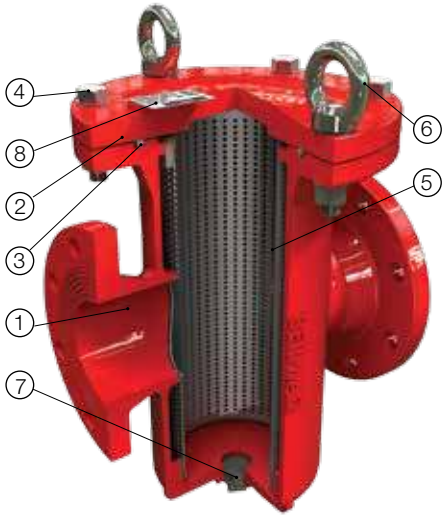
Standard Material of Construction

Item	Description	Material
1	Body	Ductile Iron ASTM A536 65-45-12, Coated*
2	Cover	Ductile Iron ASTM A536 65-45-12, Coated*
3	Gasket	EPDM, Asbestos Free
4	Bolting	AISI 304
5	Screen	AISI 316
6	Lifting Eye	Galvanized Carbon Steel
7	Drain Plug	AISI 316
8	Name Plate	AISI 304

* Coating: Fusion Bonded Epoxy RAL 3002, internally and externally







Dimensions and Flow Properties

Size	3"		4"		6"		8"		10"		12"		14"		16"		18"		20"		24"	
DN	80		100		150		200		250		300		350		400		450		500		600	
Units	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	310	12.2	410	16.1	545	21.5	685	27.0	765	30.1	950	37.4	950	37.4	950	37.4	970	38.2	1110	1110	50.6	50.6
B	150	5.9	195	7.7	275	10.8	310	12.2	360	14.2	460	18.1	350	13.8	385	15.2	435	17.1	519	20.4	525	20.7
L	250	9.8	292	11.5	378	14.9	476	18.7	559	22.0	680	26.8	770	30.3	800	31.5	842	33.1	842	33.1	1054	41.5
W	263	10.4	305	12.0	391	15.4	485	19.1	572	22.5	693	27.3	485	19.1	572	22.5	693	27.3	693	27.3	693	27.3
C	20	3/4"	24	1"	24	1"	40	1.5"	40	1.5"	50	2"	50	2"	50	2"	50	2"	50	2"	50	2"
D	3.2	0.13	3.2	0.13	3.2	0.13	3.2	0.13	3.2	0.13	3.2	0.13	6.4	0.25	3.2	0.13	3.2	0.13	3.2	0.13	3.2	0.13
Kv / Cv (1)	185	213	289	333	650	750	1155	1334	1804	2084	2598	3001	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Leq m / ft (2)	8	26	13	42.5	21.5	70.5	28	92	37.5	123	45.5	149	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Weight kg / lb	23	51	42	93	72	159	130	287	190	419	285	628	470	1036	505	1113	645	1422	850	1874	1550	3417

Notes: (1) Valve flow coefficient Kv: flow in m³/h at 1 bar differential pressure, Cv: flow in gpm at 1 psi differential pressure;
The pressure loss calculation formula: Δp = SG (Q/ Cv or Kv)2
(2) Leq: Equivalent pipe length for turbulent flow in clean commercial steel pipe (SCH 40)
(3) Please contact BERMAD for further applicable data

Ordering Information

Orders must include the description and Part Number (P/N). Contact local BERMAD distributor for availability.

Size in.	DN	BERMAD Product Descriptions	Hole Diameter (mm)	Hole Diameter (in.)	P/N
3"	80	FP-3"-60F-01-H-C-A5-ER, UL-Listed Basket Strainer, ANSI#150-RF	3.2	0.125	60F03HCA5N00001-ER
4"	100	FP-4"-60F-01-H-C-A5-ER, UL-Listed Basket Strainer, ANSI#150-RF	3.2	0.125	60F04HCA5N00001-ER
6"	150	FP-6"-60F-01-H-C-A5-ER, UL-Listed Basket Strainer, ANSI#150-RF	3.2	0.125	60F06HCA5N00001-ER
8"	200	FP-8"-60F-01-H-C-A5-ER, UL-Listed Basket Strainer, ANSI#150-RF	3.2	0.125	60F08HCA5N00001-ER
10"	250	FP-10"-60F-01-H-C-A5-ER, UL-Listed Basket Strainer, ANSI#150-RF	3.2	0.125	60F10HCA5N00001-ER
12"	300	FP-12"-60F-01-H-C-A5-ER, UL-Listed Basket Strainer, ANSI#150-RF	3.2	0.125	60F12HCA5N00001-ER

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