

Automatic Air Maintenance Device

Model 392-01



Technical Data

Approval

Approved by Factory Mutual Research Corporation (FM).

Model Number

392-01.

Ends

1/2" NPT, female.

Pressure Rating

Maximum working pressure: 300 psi (21 Bar).

Adjustment Range

5 to 60 psi (0.35 - 4.1 bar).

Factory setting: 30 psi (2.1 bar).

Temperature Range

Air: -40°F to +180°F (-40°C to +80°C).

Materials

Pressure Regulator:

Aluminum Body (Brass body optional).

Strainer:

Body - Bronze, Nickel Chrome plated.

Screen - Sintered Bronze.

Shutoff, Bypass, Check, and Pressure Gauge Valves :

Brass, Nickel Chrome plated.

Air Pressure Gauge:

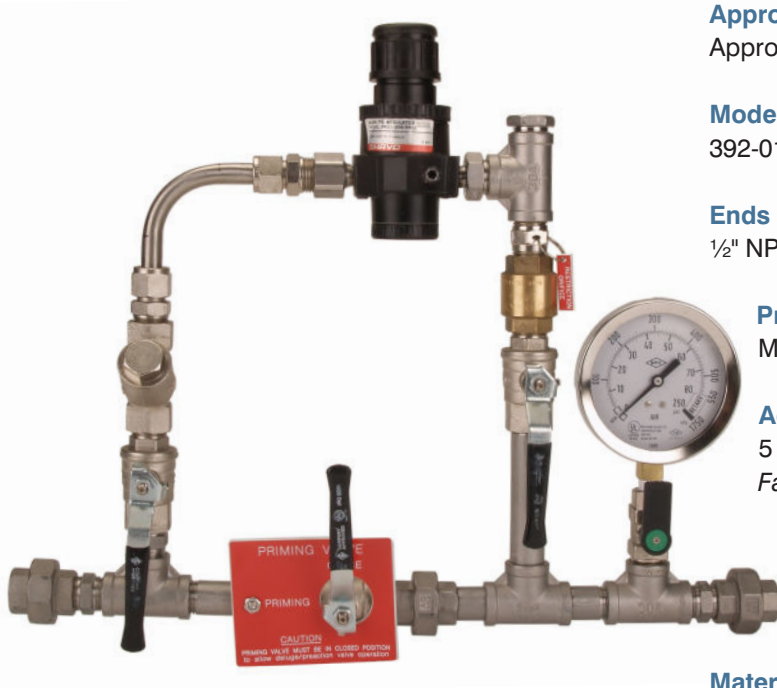
FM Approved, Double Scale 0-80 psi (0-5.5 bar).

Weight

8.4 lbs (3.8 kg).

Operation

The **Inbal** Automatic Air Maintenance Device model 392-01 feeds air into the piping system at the required pressure and volume supplied from any air source (air compressor, plant air supply, air or nitrogen storage tank). The air is supplied through a Y-Strainer (6) which prevents foreign particles from traveling to the Pressure Regulator (18) and to the Restriction Orifice (15). The Pressure Regulator reduces the inlet air pressure to a preadjusted outlet pressure. It will automatically maintain a constant pressure in the dry system regardless of fluctuations in the higher pressure source being used.



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General Description

The **Inbal** Automatic Air Maintenance Device model 392-01 automatically maintains the air or nitrogen pressure within preset limits in a dry pipe sprinkler system or a dry pilot line which actuates Deluge or Preaction System. The **Inbal** Model 392-01 maintains a preset steady pressure in the air system regardless of pressure fluctuations in the compressed air source. The Automatic Air Maintenance Device is mainly used in applications sourced by higher pressure than required for a dry system.

The **Inbal** Automatic Air Maintenance Device consists of a Pressure Regulator, Restriction Orifice, Bypass Valve, Shutoff Valves, Y-Strainer, Check Valve, Pressure Gauge with a Pressure Gauge Valve, all factory assembled as a device, tested and set to 30 psi (2.1 bar). Two unions are provided for ease of installation. The **Inbal** Automatic Air Maintenance Device is approved by Factory Mutual Research Corporation (FM).

An Orifice (15) in the Automatic Air Maintenance Device restricts the air supply to the system to ensure that the automatic air supply cannot replace air as fast as it escapes when a sprinkler operates.

Small air leaks from the air piping system will be compensated automatically by air feed from the pressure regulator.

The Shutoff Valves (3) permit the servicing of the Y-Strainer and the Pressure Regulator without shutting down the sprinkler system. The Bypass Valve (2) enables a fast

restoration of the required pressure of the system after service or operation. The Bypass Valve must be closed and the Shutoff Valves open for proper automatic operation.

The Check Valve (14) in the Automatic Air Maintenance Device prevents the loss of air pressure in the piping system when air pressure supply drops below the set pressure in the system. It also prevents reverse flow so that water cannot reach the Pressure Regulator after the dry pipe or preaction system operates.

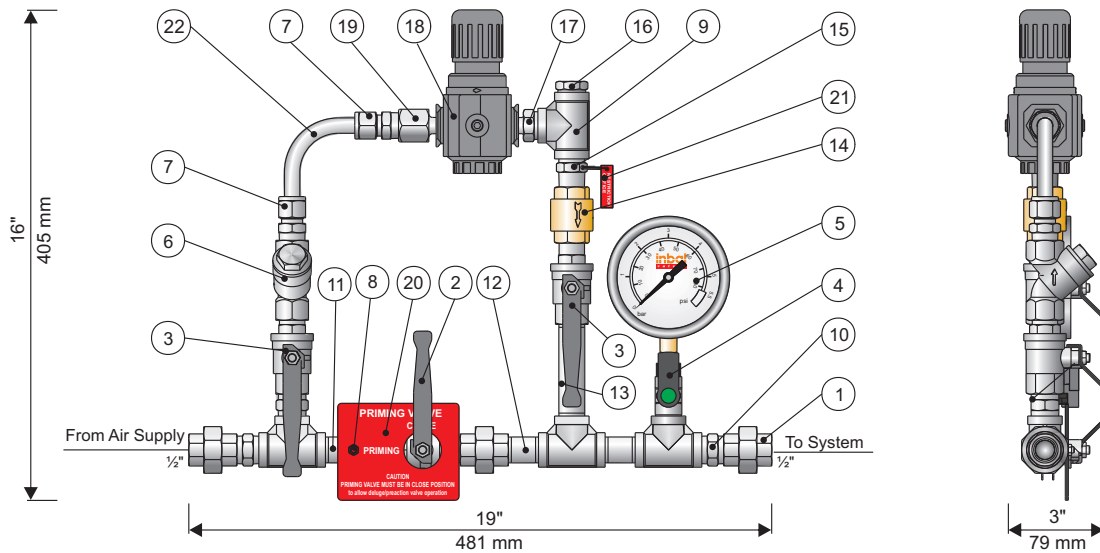


Figure (1)

Item	Cat. No.	Description	Standard Material	Bulletin No.	Quantity
1	210406008001	Union 1/2" FxF	Stainless Steel AISI 304		3
2	235102008000	Bypass Valve	Brass, Nickel Chrome plated	F40-08	1
3	235102008000	Shutoff Valve 1/2"	Brass, Nickel Chrome plated	F40-08	
4	235302008001	Pressure Gauge Valve 1/2"x1/4"	Brass, Nickel Chrome plated	F40-09	1
5	213102018000	Air Pressure Gauge	Burdon - Bronze; Case - ABS	F40-04	1
6	131003010000	Y-Pattern Strainer 1/2"	Bronze, Nickel Chrome plated	F40-03	1
7	318902016000	Flexible Fitting 1/2" NPT x 1/2"OD	Brass, Nickel Chrome plated		2
8	224306000003	Clamp kit 3/4"	Galvanized Steel		1
9	210106008001	Tee 1/2"	Stainless Steel AISI 304		4
10	212206008001	Hexagon Nipple 1/2"	Stainless Steel AISI 304		3
11	312206032001	Nipple 1/2" x 3"	Stainless Steel AISI 304		1
12	212206003001	Nipple 1/2" x 2"	Stainless Steel AISI 304		2
13	212206006001	Nipple 1/2" x 4"	Stainless Steel AISI 304		1
14	237102008000	Check Valve 1/2"	Brass	F40-12	1
15	112802008000	Restriction Orifice	Brass, Nickel Chrome plated	F40-01	1
16	212106008000	Plug 1/2"	Stainless Steel AISI 304		1
17	212206020001	Nipple 1/2" x 1/4"	Brass, Nickel Chrome plated		1
18	287006002003	Pressure Regulator	Aluminum Body		1
19	312006003001	Adapter 1/4"Mx1/2"F	Stainless Steel AISI 304		1
20	293108017000	Label	P.V.C		1
21	293108006000	Label	P.V.C		1
22	994006008000	Compensating Tube	Stainless Steel AISI 316		1

Note: See Technical Data for optional materials

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Installation

The installation of the Automatic Air Maintenance Device must be in a visible, free access, dry spot on the air supply line to the deluge, dry pipe, or preaction valve control trim.

Connect the **Inbal** Automatic Air Maintenance Device to the air supply source and the valve trim through a 1/2" pipe. Unions are provided at the inlet and outlet ends for servicing. Refer to the arrow on the Automatic Air Maintenance Device. The Automatic Air Maintenance Device is supplied assembled and set to 30 psi (2.1 bar).

For air fill close the Shutoff Valves (3) and open the Bypass Valve (2) in the **Inbal** Automatic Air Maintenance Device. Open the air supply control valve to pressurize the system. When the system pressure is equal to the designed / required pressure, close the Bypass Valve and open both Shutoff Valves.

Note: Failure to close the Bypass Valve and/or open the Shutoff Valves after the line has been pressurized neutralizes the Automatic performance of the Device. The dry pipe system or the dry pilot line may not function to open the **Inbal** Automatic Water Control Valve.

If the system pressure at any time exceeds the Pressure Regulator setting, air may be momentarily exhausted from the regulator bleed hole to retrieve the air pressure to the preset level.

To adjust the system pressure, pull the plastic knob on the Pressure Regulator and turn it clockwise to increase the system pressure, counter-clockwise to decrease the set

pressure. The system pressure should be set at the minimum required value to minimize the trip time of the system in the event of a sprinkler operation.

Push the plastic knob on the Pressure Regulator to lock the setting when the system stabilizes at the desired pressure.

Inspection, Maintenance & Testing

It is recommended that the **Inbal** Automatic Air Maintenance Device be periodically verified for proper operation and condition as part of the deluge, dry pipe, or preaction system testing procedure.

Verify that the regulated air pressure is at the proper setting. Verify that the Bypass Valve is sealed in a closed position and the Shutoff Valves are sealed in an open position.

The Y-Strainer should be cleaned quarterly. The Check Valve and the Orifice should be inspected biannually for debris or clogging.

If the system pressure is held higher than the preset level, close the Shutoff Valves, release the system pressure by remote to be slightly below the setting. If the pressure builds up again, the Bypass Valve and the Pressure Regulator should be inspected.

If the Pressure Regulator should be replaced, close first the Shutoff Valves and turn the plastic knob counter-clockwise to relieve the trapped pressure in the pipe section between the Pressure Regulator and the Shutoff Valve. ●

Piping & Instrumentation Diagram

