

# AMD with Adjustable Regulator for Fusible Plug Loops

## Model AMD-76

The Bermad AMD-76 Air Maintenance Device is a pressure control unit that automatically regulates a continuous pressurized air (or nitrogen) supply to a constant preset value.

The BERMAD AMD-76 is designed for use with dry pilot line deluge systems using a dry fusible plug loop.

The standard configuration includes a field adjustable pressure regulator, a Y strainer and two spring loaded check valves.

Additional options include Pressure Gauges, Pressure Switches/ Transmitters, Air Tank and Pressure Safety Valve (PSV).

The AMD unit is provided preassembled, tested and calibrated prior to shipment.



(for illustration only)

### Principle of Operation

The air or nitrogen supply enters the AMD-76 via the pressure supply ball valve [1] that must be kept open at all times that the AMD is in the automatic operation mode.

For added safety and convenience and as a guard against incorrect operation the AMD is equipped with a spring loaded Normally Closed (N.C) Bypass valve, ensuring an essential default closed position, on completion of system pressurization.

To quickly fill the system for initial pressurization the spring loaded (N.C) Bypass Valve [5] should be opened. Once the required system pressure has been reached, release the N.C Bypass valve handle, which will automatically return it to the closed position, allowing only a restricted airflow to the system through the fixed restriction orifice [4]. Twin check valves [2] retain the outlet pressure supply in the event that the air supply is interrupted. In such a case the AMD will maintain air pressure in the system for a limited period of time only. The Pressure Regulator [3] automatically maintains system pressure at the pre-set value.

The Fixed Restriction Orifice limits the air flow into the fusible plug system to a value that is significantly lower than will be exhausted when a fusible release device is activated. Thus ensuring a sufficient drop in pressure to activate low pressure triggered equipment such as deluge valves and alarm devices.

### Specifications:

- **Maximum Inlet Supply Pressure:** 12 barg / 175 psig
- **Factory Outlet Pressure Setting:** 2.5 barg / 36.26 psig
- **Field-Adjustable Outlet Range:** 1.0 to 7.0 barg / 15 to 100 psig

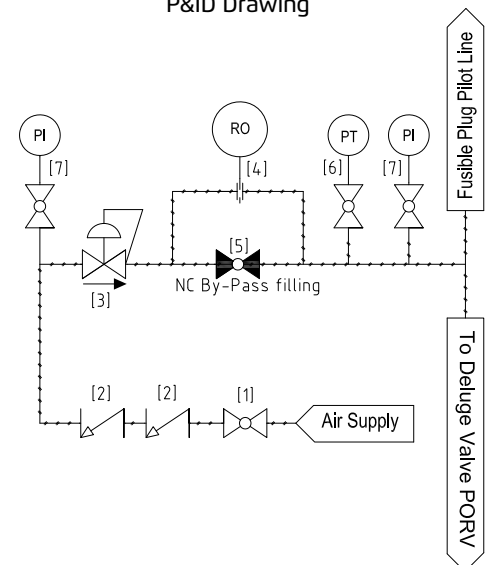
### Construction Materials:

- Brass Regulator
- Nickel Plated Brass accessories
- Stainless steel 316 Tubing and fittings

### Optional:

- All Stainless steel 316 (suffix code N)
- Stainless steel 316 back plate panel (suffix code BP)
- Stainless steel 316 instrument cabinet
- Brackets for direct mounting on BERMAD deluge valves
- Additional Instrumentation, see "Code Designations" on the next page

P&ID Drawing



## Installation

The Bermad AMD-76 must be installed in accordance with the following instructions:

1. The air or nitrogen supply provided to the AMD-76 device must be continuous, clean, dry, and oil free.
2. Before the AMD is installed, flush the pipeline to remove any dirt, debris, etc.
3. Unions should be installed upstream and downstream of the AMD to allow easy removal for servicing.
4. Connect the air supply to the AMD inlet port [1] and connect the AMD outlet port to piping with a minimum diameter of ½" (DN15).
5. Provide wiring to the instrumentation in accordance to the manufacturer's instructions.

## Placing in Service & Resetting Procedure

The Model AMD-76 system shall be placed in service / reset in accordance with the following instructions:

1. Open the Supply Isolating valve and introduce air pressure to the inlet of the AMD.
2. Verify that the inlet pressure gauge [7] indicates a high and stable pressure.
3. Open the Bypass valve [5] enough to slowly pressurize the complete system.
4. After the system pressure has stabilized to the required pressure, as shown by the outlet pressure gauge [7], release the Bypass valve handle which will automatically return it to the closed position. The AMD is now ready for standby service.

## Adjustment

While observing the outlet pressure gauge, slowly turn the regulator adjusting screw [3] clockwise to increase pressure or counter-clockwise to decrease pressure.

If the system is over-pressurized during fill and/or adjustment, the excess pressure must be released.

After the pressure regulator has been set to the desired pressure, lock the adjusting screw with the locking nut.

The AMD will then automatically maintain the pre-set system pressure.

Any installed instrumentation shall be calibrated according to the manufacturer's instructions.

## Maintenance

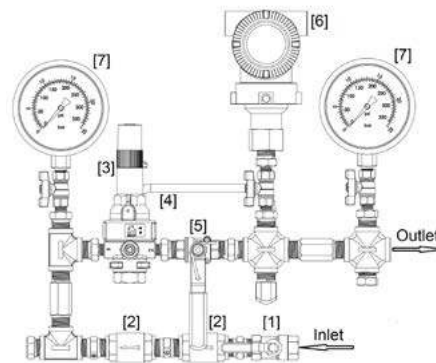
The following inspection procedure shall be performed, in addition to any specific requirements of authorities having jurisdiction. The AMD should be checked for correct pressure regulation after installation or servicing. If adjustment is necessary, refer to the "Adjustment" section above. Any malfunction must be immediately corrected.

It is recommended that the AMD-76 be inspected, tested and maintained by qualified Inspection personnel.

## Inspection and Testing

The Model AMD-76 must be inspected at least quarterly in accordance with the following instructions:

1. Verify that the Bypass Valve [5] is closed.
2. Verify that the Air Supply Isolating Valve [1] is Open and verify that any control valve in the air supply trim to the system being pressurized is open.
3. Verify that the fusible plugs system pressure downstream of the AMD is as per the system requirement. If adjustment is necessary refer to the "Adjustment" paragraph.
4. Drain accumulated moisture from the system piping and/or Air Tank (if mounted) by slowly opening a draining valve.  
The Air Maintenance Device is now ready for service.



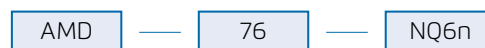
## Components

- (1) Pressure Supply Ball Valve
- (2) Spring Loaded Check Valves
- (3) Pressure Regulator (PCV) Model 2PB
- (4) Fixed Restriction Orifice
- (5) Spring loaded N.C. Bypass Ball Valve

## Optional:

- (6) Pressure switch/transmitter
- (7) Pressure gauges
- (8) Back-Plate Panel (not shown)

## Code Designations



| Factory Fitted Options                    | Code |
|---|------|
| S.S 316 Trim Accessories                  | N    |
| Solenoid Valve (to be specified)          | 55   |
| Pressure Transmitter                      | Q    |
| Pressure Switch, General Purpose          | P    |
| Block & Bleed Valve / Two Valve Manifold  | B    |
| Ex Proof Pressure Switch                  | P7   |
| Ex d ATEX Pressure Switch                 | P9   |
| Pressure Gauge 2.5" Brass Socket Glycerin | 6    |
| Pressure Gauge 4" S.S Socket and Glycerin | 6n   |
| Pressure Gauge 4" Monel Socket            | 6m   |
| Air Pressure Tank/Reservoir and PSV       | AT   |
| Stainless Steel 316 Back Plate Panel      | BP   |
| Stainless Steel 316 Instrument Cabinet    | IC   |

