

## AMD with Adjustable Regulator

### Model AMD-74

#### Description

The Bermad AMD Air Maintenance Device is an automatic pressure regulating type that automatically controls the supplied air pressure to a constant preset value. It is suited for use in a dry pilot actuated Deluge system, Dry Pipe or Preaction systems. The AMD shall be utilized in applications where there is a compressed air or nitrogen source, which is provided at a higher pressure than the desired system pressure, including a field-adjustable pressure regulator.

The supply system shall include an air tank, (separately provided) connected to the specific port. Major components illustrated in Figure 1 are factory assembled.

#### Construction Materials:

Brass accessories and Stainless steel fittings

- Maximum Inlet Air (or Nitrogen) Supply Pressure: 12 bar / 175 psi
- Field-Adjustable Outlet Pressure Range: 1.0 to 7.0 bar / 15 to 100 psi

#### Option:

- All Stainless steel 316 (model: AMD-74-N)  
AMD inlet and outlet Pressure gauges

#### Principal of Operation

The AMD Air Pressure Maintenance Device regulates and restricts airflow. The By-Pass Valve [1] in the AMD is opened to instantly fill the system during the initial pressurization. Once the required system pressure has been reached, the By-Pass Valve closes and will be locked with a Tamper-Proof arrangement to allow restricted airflow through the fixed orifice.

The Air Supply Isolating Valve [2] must be in the open position to place the AMD in the automatic operation mode.

If a small leak in the system occurs, the Pressure Regulator [3] will automatically maintain system pressure at the preset level. The Restriction orifice [4] in the tube fitting limits the flow of air from the Pressure Regulator into the system to a value, which is significantly lower than it will be exhausted by a release device operation. The device will maintain air pressure in the system for a limited period of time in the event that the air supply is interrupted.

#### Installation

The AMD Automatic Air Maintenance Device must be installed in accordance with the following instructions:

1. The air or nitrogen supply provided to the Air Pressure Maintenance Device must be continuous, clean, dry, and oil free.



Figure 1

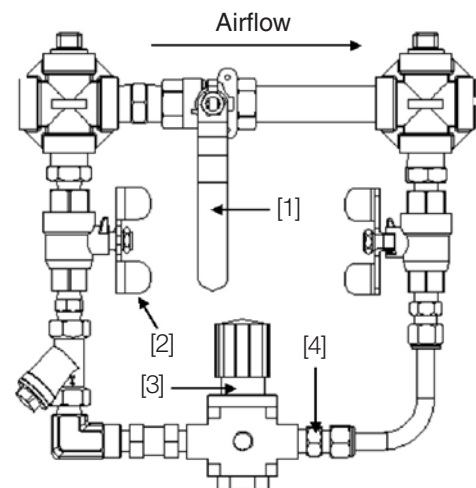


Figure 2

#### Notes:

- Instrument Air supply is recommended, however suitable consideration must be given to the removal of excessive moisture from the compressed air supply.
- Before the valve is installed, flush the pipeline to remove any dirt, debris, etc. Not flushing the line may result in system malfunctioning.
- 2. Unions should be installed upstream and downstream of the Air Pressure Maintenance Device to allow easy removal for servicing.
- 3. Connect the air supply to the AMD's inlet port, also connect the AMD's outlet port to with a minimum of 1/2" (DN15) pipe size.
- 4. Provide wiring the any installed instrumentations as with according to the manufacturer instructions.

## Placing in Service & Resetting Procedure

The Model AMD Automatic Air Maintenance Device must be set in accordance with the following instructions:

1. Determine the pressure that meets the minimum requirements of the system to be pressurized.
2. Close the AMD By-Pass Valve, Supply Isolating Valve.
3. If the AMD requires adjustment, the Pressure Regulator adjusting screw must be turned counter-clockwise completely (the screw must be loose) to reduce the system pressure to "0".
4. Open the Air Supply Isolating Valve and the Air Tank isolating valve. Apply air pressure supply to the AMD and to the air tank, the inlet pressure gauge shall indicate high and stable pressure supply.
5. Open the By-Pass Valve slowly to pressurize the system while observing the outlet pressure gauge. Close the By-Pass Valve and Lock it with the Tamper-Proof arrangement, after the system pressure has been stabilized to the required system pressure, as determined in step 1.

## Adjustment

While observing the outlet pressure gauge, adjust the outlet pressure of the pressure regulator. Slowly turn the adjusting screw clockwise to increase pressure or counter-clockwise to decrease pressure.

After the pressure regulator is set, lock the adjusting screw in that position with its fastening nut.

Any installed instrumentations shall be calibrated with according to manufacturer instruction.

1. The Air System Pressure should be set at the minimum required value, in order to minimize the system response time, the recommended setting is approx. 0.4 bar / 5.5 psi above the release device trip point.
2. If the system was over-pressurized during fill and adjustment, the system pressure must be released and reduced to the desired value.
3. The AMD will then automatically maintain the preset system pressure. The Check Valve prevents the bleeding down of the system pressure.

## Maintenance

The following inspection procedure shall be performed, in addition to any specific requirements of the NFPA 25 and also to any requirements of the authorities having jurisdiction. The Air Pressure Maintenance Device should be checked for correct pressure regulation after installation or repair by noting the air pressure reading within the system. If adjustment is necessary, refer to the 'Adjustment' paragraph above. Any malfunction must be immediately corrected. The installing contractor or product supplier should be contacted relative to any questions. It is recommended that the AMD be inspected, tested, and maintained by a qualified Inspection Service.

## **Notes:**

1. Prior to any maintenance work on the fire protection system that it controls, permission to shut down the affected fire protection systems must first be obtained from the proper authorities and all personnel who may be affected by this decision must be notified.
2. After placing a fire protection system in service, notify the proper authorities and advise those responsible for monitoring proprietary and/or central station alarms.
3. It is also recommended that accumulated moisture be removed from air supply moisture filtration equipment, at least quarterly. More frequent inspections may be necessary in particularly humid environments

## Inspection and Testing

The Model AMD must be inspected quarterly in accordance with the following instructions:

1. Verify that the By-Pass Valve is closed and Locked with Tamper-Proof arrangement
2. Verify that the Air Supply Isolating Valve is Open and verify that any control valve in the air supply trim to the system being pressurized is open.
3. Verify that the system pressure is essentially the same as the previously established requirement. If adjustment is necessary refer to the 'Adjustment' paragraph above.
4. Release accumulated moisture from Air Tank by opening the drain valve slowly.

The Air Maintenance Device is now ready for service.

