



Low Pressure Mine Door

American Mine Door[®] Co. has listened to our customers. After many requests for AMD Co. to design and manufacture a door that is specifically engineered for low pressure applications, we have completed a door design specific to your needs.

Same Design, Same Features – Lighter Weight at a Value Price

The AMD Co. “Low Pressure Mine Door” was designed around specific requests for a door with the following objectives:

- Lower water gauge pressure requirements.
- Two cylinders used to actuate – one on each door wing (powered system – manual door does not have cylinders).
- One top connecting bar – non-powered – to keep doors in time, and equal out stress forces.
- Lighter weight than our “high-pressure” designed mine doors.
- Thinner “opposing wings”, to enable ease of installation.
- Same hinge design, yet smaller diameter pins and joints.
- Less assembly on-site. This door requires minimal construction at the proposed location for the door. Less hardware and fewer connections.
- Perimeter bratticing is pre-installed vs. having to assemble and attach on-site.
- This design door package can be up to 35% less costly (size dependent) than our standard model doors.

Design Highlights

- Same proven “opposing wing” concept that has been in the AMD Co. design for over 60 years.
- Same hinge and bearing design (only smaller) which is a proven design in our standard mine doors.
- All sizes available, not limited to small size openings. Ideal for large opening with low water gauge requirements.
- Designed to safely operate up to 200 in. pounds torque, dependent on size of door.
- Our “low pressure door” can be operated manually, or with our standard pneumatic or hydraulic control systems.
- All the options that are currently available on our “standard” mine doors can be requested with the “low pressure mine door” system. These include:
 - Pneumatic and hydraulic operation available.
 - PLC control packages that – operate lights, horns, scanners, remote control systems, interlocks at airlocks etc.
 - Sliding man door in door wing.
 - Regulator installed into door wing.
- Perimeter brattice is the same MSHA approved rubber as our “standard” door systems.

- All door packages powder coated safety yellow for the most durable finish available.

Door Control and Actuation Features

Since this package was specifically designed for low pressure application, manual or air control actuation is typically implemented. The size and pressure requirements for these applications are typically less demanding, requiring less energy to operate the door system. Manual operation is used for areas that see minimal traffic as well as maintenance and storage areas where automation is not a priority. Air actuation is the standard package offered with these systems, yet in the event compressed air is not available, hydraulics systems can also be utilized. If automation is indeed required, American Mine Door Co. can offer all the same features as our high pressure door packages.

The American Mine Door Co. has the ability to design controls to operate your mine door package. After initial review of your specific needs, we prepare a written description of exactly how the control system we design will operate. At that time, you review the system operation overview and make any final alteration requests. American Mine Door Co. will build the controls in-house, complete a thorough testing of the system, and then complete wiring schematics and installation instructions for the customer.

Control Features:

- NEMA 12/13 enclosure
- Allen Bradley Micrologix 1000 PLC
- Line conditioner in each system
- All Allen Bradley components (relays, terminal blocks, switches, fuse holders etc.)

Available options and programmable logic control packages:

- Door interlock logic – lock out 1 door in airlock to maintain neutral airways.
- Logic for “T’s” and “cross” traffic patterns.
- Lighting systems (green, red and yellow shows traffic conditions).
- Buzzer/ horns for audible alerts.
- Proximity switches to detect vehicles entering doorways, obstructions in pathway.
- Remote control systems via remote transmitters.
- Cap lamp sensors to activate door systems.
- Other custom features requested by customers for unique situations.

Available control activation options:

- Our standard package includes air control system (control box, valve, air cylinders, 17 gallon storage tank, flow control valves).
- Manual operation with door close- manual lock.

Specifications

AMD Mine Ventilation Door Specifications- Low Pressure Mine Door

AMD MINE DOOR COMPONENTS - STRUCTURAL		
Item	Description	
FRAME POSTS	4" @ 7.25# CHANNEL	Standard
FRAME - CAP AND SILL	4" @ 7.25# CHANNEL	Standard
DOOR WINGS	4" @ 6.25# CHANNEL W/ 12 GA. SKIN	Standard
HINGES PIN AND SOCKET	ADJUSTABLE	Standard
CONNECTING BARS	1 1/4" PIPE W/ CLEVIS	Standard
TRAFFIC WINDOW	LEXAN - BOTH WINGS	OPTIONAL
PAINT	SAFETY YELLOW POWER COAT	Standard
INSTALLATION	DRAWINGS ALONG WITH TEXT DESCRIPTION	Standard
PERIMETER SEALANT	MSHA APPROVED RUBBER BRATTICING	Standard
DOUBLE SKINNED WINGS	12 GA.SHEET	Optional
ESCAPE HATCH/ REGULATOR	12 GA. SHEET	Optional
AMD MINE DOOR COMPONENTS - ELECTRICAL AND MECHANICAL		
Item	Description	
AIR OPERATION	CYLINDER/ RESERVOIR TANK	Standard
AIR OPERATION	CONTROL CABINET(VALVES/ FILTER, LUBRICATOR)	Standard
AIR OPERATION	ALL FITTINGS	Standard
ELECTRO-HYDRAULIC OPERATION	CYLINDER AND CONTROLS 120 VAC	Optional
PLC CONTROLS	ALLEN BRADLEY OR CUSTOMER DESIGNATED	Optional
ACTUATION DEVICES	PULL SWITCHES	Optional
ACTUATION DEVICES	REMOTE CONTROL - INFRARED	Optional
ACTUATION DEVICES	MOTION SENSOR	Optional
VISUAL/ AUDIO	RED/ AMBER/ GREEN LIGHTS	Optional
VISUAL/ AUDIO	WARNING HORNS	Optional
VISUAL/ AUDIO	REFLECTIVE STRIPPING	OPTIONAL

See Next Page for Example Door Installation Diagram