

Medium Pressure Mine Door

American Mine Door® Co. works with and assists every customer to help determine the best solution for your specific application.

We take into consideration the width, height, water gauge, service requirements, budget, and application to offer the most economical and effective solution for your ventilation door needs, including two different door actuation designs. (See Door Actuation Options later in this document.)

By designing a medium-pressure mine door system, our expert team can now cover a greater range of applications for our customers. Medium-pressure doors are typically smaller in width and height, than our high-pressure mine doors, as there's less water gauge air pressure to contend with.

Our medium-pressure doors use less materials, narrower wing panels, and smaller frames, reducing both weight and – more importantly – cost. Benefits of installing medium-pressure mine doors include:

- Same operating principles as our high pressure doors.
- Less weight improves transportation and installation
- Designed for lower pressure applications
- Fast acting, reduces idle time at door
- Minimal maintenance for years of dependable service
- Optional air regulators and sliding man doors can be installed into the door wings.
- Can be fully automated with our optional controls packages.



Operation and Design of the AMD Mine Ventilation Door

Our door wings open in opposite directions. This unique design feature allows our mine doors to withstand many inches of water gauge pressure. The same air pressure that assists the door in opening also assists it in closing. Consequently, air pressure is equalized.

Ramp slope effects are cancelled as one door wing operating downhill aids the other wing uphill. Due to the equal force principal, our mine doors can be installed in almost any slope application.

To assure maximum lifetime value, our mine doors are reusable, and can be easily moved from one location to another.

Safety Features

Safety is everyone's top priority at American Mine Door Co. We have incorporated safety into the design of our doors by risk assessments during design, engineering and controls. Below are some benefits of using our mine doors:

- Doors were designed to cancel the effects of static pressure by incorporating our "opposing wing" design. Making the pressure on the door system equal out significantly reduces potential stored energy concerns.
- Optional Traffic control using lighting systems, alarms, surface control, remote control systems, thru-door scanners and roof mounted equipment detectors (identify objects within the path of the door wing closure) and bump panels are all examples of available safety options to our customers.
- Custom controls packages designed to fit your specific needs. We can design a system to control almost any situation unique to your mine.
- Door packages are painted (2-part epoxy paint) high visibility safety yellow. Reflective striping as an available option.
- Optional personnel door escape ways installed within the door wing.
- Optional air regulators installed into door wing.

Door Benefits/ Overview of Options

ITEM	DESCRIPTION
Operational Design and Features	<ul style="list-style-type: none"> • Opposing wing design cancels out the effects of static air pressure • A top connecting bar is used to tie both door wings together. • Allows traffic into neutral airways where a permanent stopping is impossible to construct. • Door remain closed if air currents are reversed. • Reduce icing conditions by installing an American Mine Door at the portal. • Used in all types of mines: uranium, salt, potash, gypsum, clay, gold, coal, titanium, molybdenum, platinum, palladium, diamond, and potash.
Door sizes	8' wide to 20' wide 8' height to 16' height
Operational water gauge pressure	Up to 400,00 IN/LB./Torque
Operational Service	365 days a year for many years without failures.
Installation	12/6 pitch, reduces the distance to open and close the wings. Door packages are easy to install, drawings are included with every package.
Economics	The most effective and economic door system available.
Door Activation	Pull cord, push button, remote control, proximity sensor, manual
Safety	Available - light packages, reflective stripping, buzzers, proximity sensors, sonic sensors, high visibility safety yellow paint, cap lamp sensors and bump panels.
Options-custom design	We are capable of designing almost any custom door systems to fit your requirements. We will custom manufacturer the steel fabrication (add man door, regulator, etc.), controls (custom PLC programs to run auxiliary options) and safety systems (able to include your mines specified devises).

Specifications

AMD Mine Ventilation Door Specifications – High Pressure

AMD MINE DOOR COMPONENTS - STRUCTURAL		
Item	Description	
FRAME POSTS	6" @ 15.3# CHANNEL	Standard
FRAME - CAP AND SILL	6" @ 15.3# CHANNEL	Standard
DOOR WINGS	6" @10.5# CHANNEL W/ 10 GA. SKIN	Standard
HINGES PIN AND SOCKET	ADJUSTABLE	Standard
CONNECTING BARS	1 1/2" PIPE W/ CLEVIS	Standard
TRAFFIC WINDOW	LEXAN - BOTH WINGS	Standard
PAINT	SAFETY YELLOW 2-PART EPOXY PAINT	Standard
INSTALLATION	DRAWINGS ALONG WITH TEXT DESCRIPTION	Standard
PERIMETER SEALANT	MSHA APPROVED RUBBER BRATTICING	Standard
DOUBLE SKINNED WINGS	10 GA.SHEET	Optional
ESCAPE HATCH/ REGULATOR	10 GA. SHEET	Optional

AMD MINE DOOR COMPONENTS - 57 HI 5 HCB GMGH9 A G		
Item	Description	Number of doors that can be actuated by one system
MANUAL OPERATION	Mine Door is manually opened and closed by a person	N/A
PNEUMATIC OPERATION	Includes: NEMA13 Enclosure with 4-way valve, 5 port, 3 position (center exhaust), filter, terminal strip, door open/door close speed controls, check valve. Includes one 6" bore air cylinder, 17 gallon air storage tank and all fittings. No air hose included.	Single Door Actuation Only
HYDRAULIC OPERATION	Standard Hydraulic Package: 20 gallon Hydraulic Power Unit complete with dual stack valves with a pressure relief valve, settable to a minimum of 650 psi and four flow controls for (2) A & B side to cylinder and two 4-way valves with spring return to center position. Center position drains A and B back to tank. Solenoid Valves to be 24 Volts DC. Tank to have 1000 watt immersion heater installed to the bottom side of the reservoir. System will have a 1 gallon accumulator, pressure gauge, pressure switch & 6 gpm pump. Standard 3 hp, 3 phase, 60 Hz. motor. System also has a pressure switch to cycle pump motor between 550 and 650 psi. NEMA 12/13 Control Enclosure standard. Hydraulic Hoses and fittings - Available upon request. *OPTIONAL SYSTEMS AVAILABLE AT CUSTOMER REQUEST	One Door System OR 2 Door Air-Lock
ESCAPE HATCH/ REGULATOR	10 GA. SHEET	Optional

AMD MINE DOOR COMPONENTS - ELECTRICAL

Item	Description	
1 DOOR PLC SYSTEM	AMD offers currently designed and proven single door PLC controls systems. This system will operate one Mine Door and any optional components at customers request. Our standard systems use Schneider PLC's, if your mine only used Allen Bradley brand PLC's, AMD can substitute almost any brand PLC into our control systems. AMD offers currently designed and proven single door PLC controls system. This system will operate one Mine Door and any optional components at customers request. Our standard systems use Schneider PLC's, if your mine only used Allen Bradley brand PLC's, AMD can substitute almost any brand PLC into our control systems. Available peripheral devices: Roof Mounted Equipment Detectors, Thru-Door Scanner, Rope Pull Switches, Mushroom Head Push-buttons, Traffic Lighting and Audible Alarms, Cap Lamp Sensors, Limit Switches.	Available on all Mine Door Models
2 DOOR (AIR-LOCK) PLC SYSTEM	AMD offers currently designed and proven two door PLC controls system. Only one PLC control system is used to operate both doors. Typically used for "air locks", our PLC control systems will "lock-out" door #1 when door # 2 is open. Once door #1 closes, door #2 is allowed to open, maintaining integrity of your ventilation control plan. Traffic lighting and audible alarms are used to notify equipment drivers of door status at the entry and exit of each door. This system will operate two Mine Doors and any optional components at customer's request. Our standard two door control systems use Schneider PLC's, if your mine only used Allen Bradley brand PLC's, AMD can substitute almost any brand PLC into our control systems. Available peripheral devices: Roof Mounted Equipment Detectors, Thru-Door Scanner, Rope Pull Switches, Mushroom Head Push-buttons, Traffic Lighting and Audible Alarms, Cap Lamp Sensors, Limit Switches.	Available on all Mine Door Models
3 DOOR (AIR-LOCK/TEE) PLC SYSTEM	AMD offers currently designed and proven three door PLC controls system. Only one PLC control system is used to operate all three doors. Typically used for "T style air locks", our PLC control systems will "lock-out" door #1 and door #2 when door # 3 is open (alternating as each door is opened or closed, once any one of the three doors are opened, the other two doors are "locked out"). Once door #3 closes, door #2 and door #1 are allowed to open, maintaining integrity of your ventilation control plan. Traffic lighting and audible alarms are used to notify equipment drivers of door status at the entry and exit of each door. This system will operate three Mine Doors and any optional components at customer's request. Our standard three door control systems use Schneider PLC's, if your mine only used Allen Bradley brand PLC's, AMD can substitute almost any brand PLC into our control systems. Available peripheral devices: Roof Mounted Equipment Detectors, Thru-Door Scanner, Rope Pull Switches, Mushroom Head Push-buttons, Traffic Lighting and Audible Alarms, Cap Lamp Sensors, Limit Switches.	Available on all Mine Door Models
4 DOOR (AIR-LOCK/ CROSS) PLC SYSTEM	AMD offers currently designed and proven four door PLC controls system. Only one PLC is used to operate all four doors. Typically used for "cross style air locks", our PLC control systems will "lock-out" doors #1, #2 and #3 when door #4 is open (alternating as each door is opened or closed, once any one of the four doors are opened, the other three doors are "locked out"). Once door #1 closes, doors #2, #3, and #4 allowed to open, maintaining integrity of your ventilation control plan. Traffic lighting and audible alarms are used to notify equipment drivers of door status at the entry and exit of each door. This system will operate four Mine Doors and any optional components at customer's request. Our standard four door control systems use Schneider PLC's, if your mine only used Allen Bradley brand PLC's, AMD can substitute almost any brand PLC into our control systems. Available peripheral devices: Roof Mounted Equipment Detectors, Thru-Door Scanner, Rope Pull Switches, Mushroom Head Push-buttons, Traffic Lighting and Audible Alarms, Cap Lamp Sensors, Limit Switches.	Available on all Mine Door Models