

Innovation Machine Door Lifter Quick Detach System

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The Problem

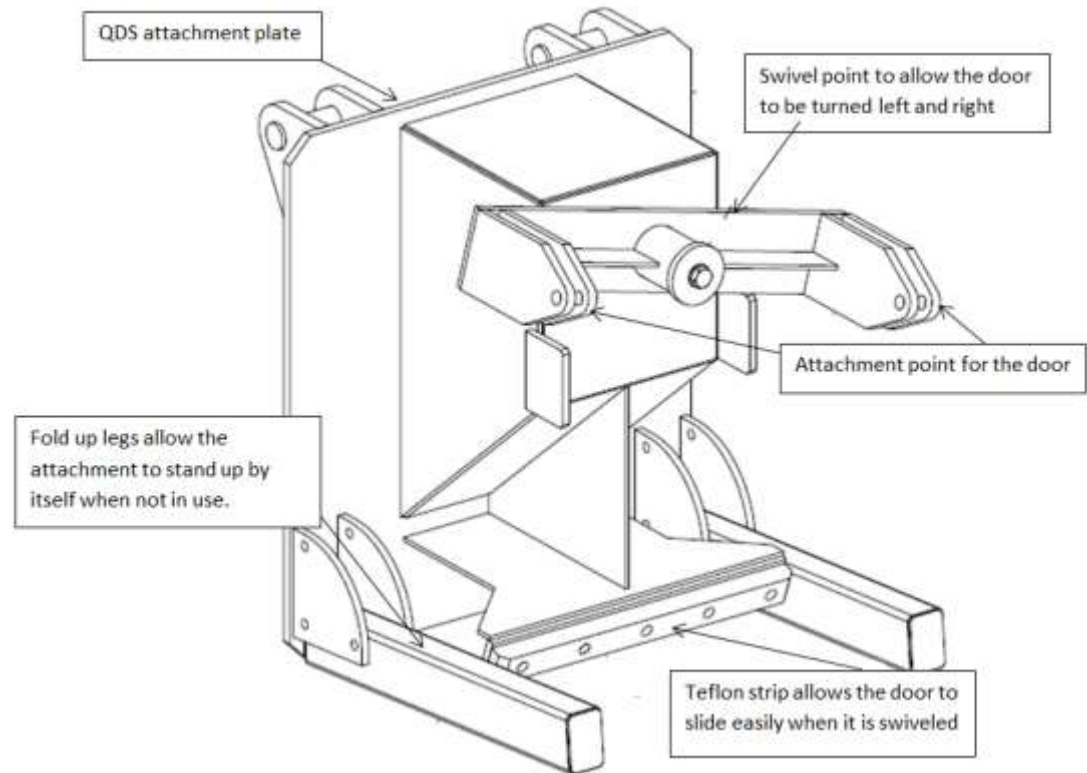
'Improving health & safety in challenging times

- An underground vent circuit requires the installation of ventilation control devices to direct the air where it is required
- If machine access is needed, doors need to be installed
- The doors are constructed from steel and are about 2.4m w x 2.6m h and weigh around 400kg each
- Doors are generally hung using a loader and chains or slings, there is no positive connection between the loader and the door, the man installing the pins has to stand against the rib while at least one other person moved the door into position
- All of this occurs in poor visibility and in a high noise environment making communication difficult



The Solution

- To remove the hazard of the door moving unexpectedly, a positive connection between the loader and door was required
- A QDS attachment was the answer to this problem, positive connection to the loader ensures that the door cannot fall or move without warning



The Solution



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The Solution



Benefits

- With the door on the ground, the attachment can be crowded all the way down to it, allowing for the door to be picked up by the loader
- Once off the ground, the door will hang vertically on the pins, but if required, it can be tilted back using the loader
- The door can be twisted easily around it's axis on a pivot by one person, to allow for uneven ground
- No one has to stand in the pinch point between the loader and the rib moving the door to line up the pins, this can all be done from the other side of the door, using a spotter at the back of the loader.
- As there is positive connection between the door and the loader, there is no risk of unexpected slipping of a chain or sling
- The unit is very simple to use
- Could be used on other vent equipment if the lifting points were fitted(eg, regulator)

Transferability

- Machine doors are used at all underground mines
- Regardless of who manufactures them, this attachment could be used to install the doors
- The attachment lugs can either be installed during manufacture, or fitted later by bolting them on
- The attachment will fit any loader with a QDS, only the length of the front arm needs to be made to suit if the loader does not crowd as far forward as an Eimco 130

Cost

- The unit cost around \$12000 to build
- Engineering drawings were around \$5000

