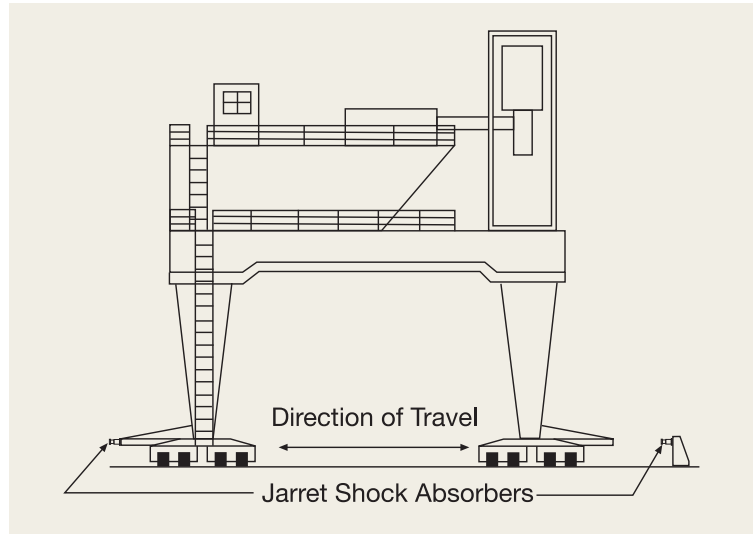


## Coke Oven Pusher Machine Jarret Shock Absorber Application

### Application Overview

The pusher machine is designed to operate on a track parallel to but independent of the battery. In general, it is a combination of three machines: A door extractor, a pusher and a leveler. The door-extracting element removes and holds the pusher-side door during the pushing operation. The pushing element pushes the coke cake from the oven, through the coke guide and into the quench car. The leveling element levels the coal charge to provide a free gas space below the roof of the charged oven. Generally, there are two pushers per track with only one in use at any given time.



### Problem

There are two potential problems that shock absorbers can solve on this machine. The first problem is stopping the pusher machine. There is a braking system to stop the machine in the desired position. If the braking machine fails or the operator over-travels the machine, the machine must be safely stopped overcoming both the momentum and, in some cases, the driving force of the motor as well. The stop must be gentle enough to prevent damage to the machine, end stop, other pusher or injury to the operator.

The second problem involves stopping the pusher ram. There is a control system and limit switches to stop the ram. If these systems fail, the ram must be stopped, overcoming both the momentum of the ram and in some cases the driving force of the motor as well.

### Product Solution

Jarret shock absorbers are ideal for these applications because they provide full energy absorbing capability at the low operating speeds common with this type of equipment. Since the reaction of a Jarret shock absorber increases with stroke, they will not bottom out when the machine or ram is driven into them. As they are stroked, the reaction increases to overbalance the drive force with enough remaining capacity to remove the kinetic energy, thereby assuring a gradual, shock-free stop, without reaching the end of the stroke, ie. bottoming out.

Jarret shock absorbers for end stop applications are normally selected to provide emergency stop capability with low deceleration forces in "power on" impacts to avoid injury to operators. The Jarret units can be mounted on the machine to impact against the end structure or they can be mounted on the end stop structure that the machine impacts. An inventory of standard sizes provides ready availability for most applications. Factory repair is available to recondition worn units if required (thus assuring long economical service).