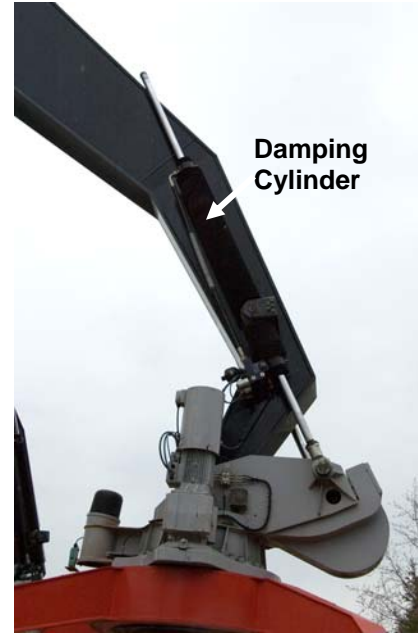


Fluid power at work in an AMUSEMENT PARK



The Sledge Hammer



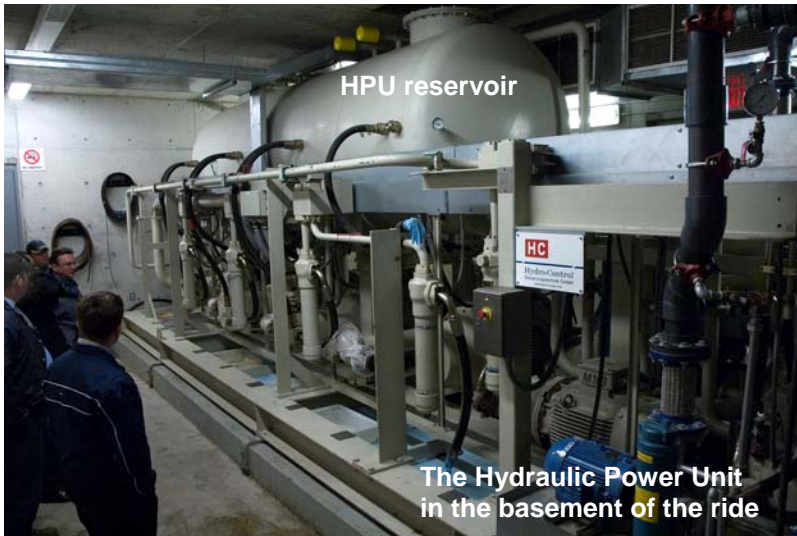
Damping Cylinder

The **Sledge Hammer** ride moves its passengers in a variety of axes. A hydraulic cylinder inside the central yellow tower is fed oil through an accumulator to move the black arms up and down the guide rods that are at the top.

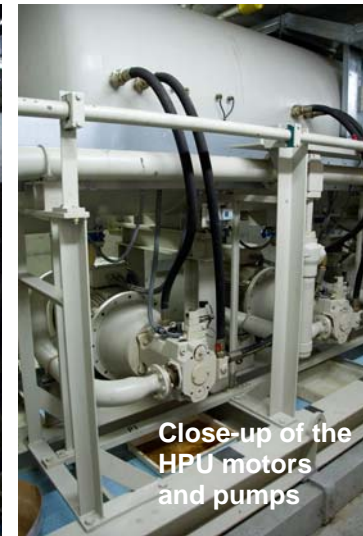
The hydraulic oil for the central cylinder is pressurized to (315 bar / 4500 PSI) by a large, multi-motor power unit in the basement of the ride.

At the ends of the arms above the seat cages, hydraulic cylinders are used to dampen the swinging motion of the cages.

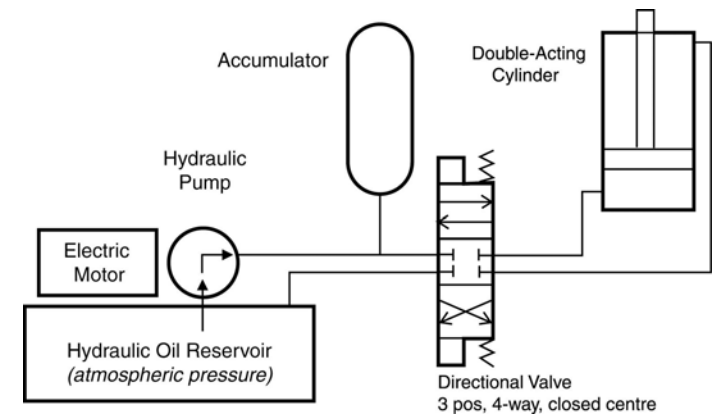
The rotation of the arm assembly is done electrically using a motor and gearbox.

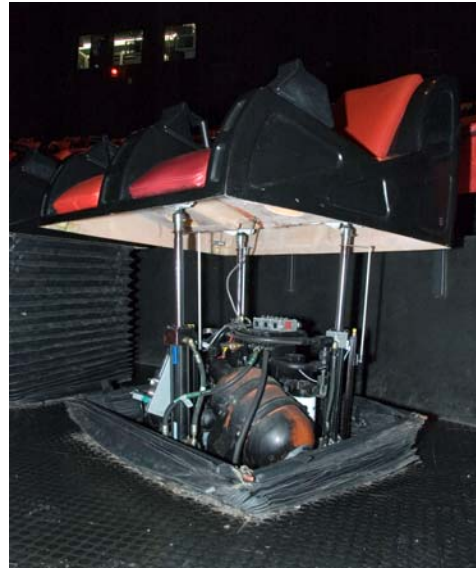


The Hydraulic Power Unit in the basement of the ride



Close-up of the HPU motors and pumps





Each pair of seats in this theatre is actuated by three cylinders powered by a hydraulic power unit located under the seats. The components of these power units are similar to those in the diagram on the previous page.

All the pairs of seats receive the same motion instructions via a program that synchronizes the motion of the seats with the action on the movie screen.

The amusement park management had the choice of powering all the seat cylinders from one, large central power unit. Why do you think they didn't take that route?



On the **Shockwave** ride, a hydraulic power unit beneath the ride provides power to two large cylinders that raise the mast and to a motor that rotates the main arm. Another power unit mounted under the Shockwave sign rotates the gondola star (seating) assembly.

