

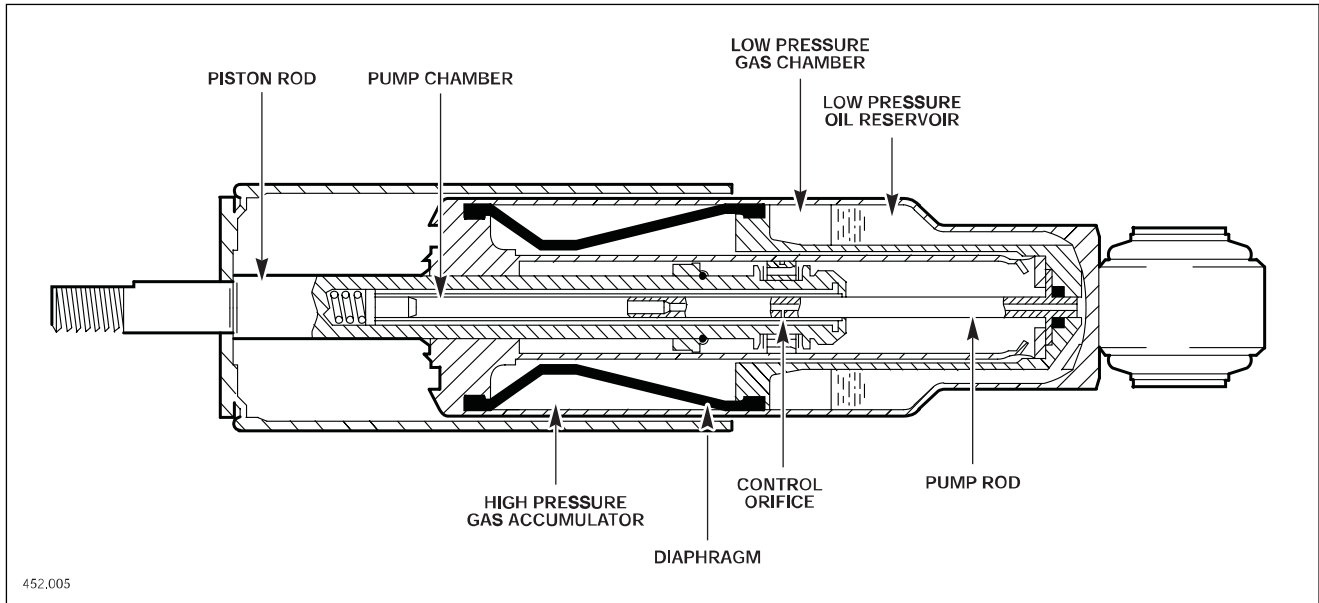
Adaptive Damping (XJ, XK, S-TYPE)

Adaptive damping enhances vehicle handling by the use of special dampers which are controlled by the adaptive damping control module (ADCM).

The adaptive damping system is completely automatic, requiring no input from the driver.

Damping is achieved by controlling the flow of fluid from one end of the damping chamber to the other. The more the flow of fluid is restricted, the firmer the damping action.

Adaptive Damper Cutaway (2001 MY XK Shown)



Adaptive Damping System Operation

The system selects the soft or firm damper setting according to the current road and driving conditions, to optimize vehicle ride and handling.

With the vehicle stationary, the dampers are in the firm setting, but will normally switch to the soft setting when vehicle speed exceeds 8 km/h (5 mph); all dampers are switched simultaneously. Sudden movement of the vehicle body, in response to road inputs, is detected by the vertical accelerometers, and the ADCM switches the dampers to the firm setting to give improved damping of the resultant oscillations. When cornering forces are detected by the lateral accelerometer, the ADCM switches the dampers to the firm setting to reduce the roll rate and improve wheel control.

After the event has passed, the dampers revert to the soft setting. When the footbrake is applied, the ADCM receives a signal and calculates the rate of vehicle deceleration. If the deceleration rate is greater than a certain threshold, the dampers are switched to the firm setting to reduce the pitch rate and improve wheel control.

If a system failure occurs, the ADCM grounds the output line to the instrument cluster message center, which displays a text warning: SUSPENSION FAULT or CATS FAULT (depending on the model) and illuminates the amber warning lamp. Under fault conditions the system always defaults to the firm setting, so that the vehicle will be safe to drive under all road and driving conditions.