



**Figure 13-36.** A hydraulic power pack gear retraction system in the gear up condition.

### Large Aircraft Retraction Systems

Large aircraft retraction systems are nearly always powered by hydraulics. Typically, the hydraulic pump is driven off of the engine accessory drive. Auxiliary electric hydraulic pumps are also common. Other devices used in a hydraulically-operated retraction system include actuating cylinders, selector valves, uplocks, downlocks, sequence valves, priority valves, tubing, and other conventional hydraulic system components. These units are interconnected

so that they permit properly sequenced retraction and extension of the landing gear and the landing gear doors.

The correct operation of any aircraft landing gear retraction system is extremely important. *Figure 13-37* illustrates an example of a simple large aircraft hydraulic landing gear system. The system is on an aircraft that has doors that open before the gear is extended and close after the gear is retracted. The nose gear doors operate via mechanical linkage