

SKYFOLD® Safety Features

Skyfold Solutions are designed with safety in mind. This is reflected not only in the system's design philosophy, but also in certain specific sub-systems and components. The following offers a brief overview of Skyfold Mirage's various safety features.

Skyfold Classic™, Zenith® & Zenith® Premium:

- Skyfold Operable Walls are operated with two switches wired in series that must be operated simultaneously. The main switch requires the use of a key to activate the system. Once the key is turned to the desired operation, "up" or "down", the wall can then be operated by depressing the push button on both switches simultaneously. When either or both push buttons are released, the wall stops immediately, without coasting.
- The gear motor that powers the entire system is a heavy-duty, sealed, industrial motor designed for hundreds of stops and starts an hour. It is rated for service several orders of magnitude more rigorous than the service it experiences on Skyfold Operable Walls.
- The gear motor has an electromagnetic brake on the opposite end of the output shaft. When there is power at the motor, this brake is energized in the open position. In the case of loss of power, this brake activates instantly and prevents any movement of the motor until power is restored. This brake is rated for 200% of the motor's full torque rating.
- The motor assembly uses a spring-cushioned torque arm in order to soften the system's starts and stops. As part of this assembly, there is a sensor on the torque arm that detects higher than normal torque levels. In the event of a mechanical jam, or if the upper limit switch fails to operate, this over-torque sensor quickly cuts power to the motor.
- The gear motor controls contain the latest in overload protection and other electrical safeguards.
- The line shaft that rotates all of the cable drums is continuous throughout the gear motor, without a coupling. This assures a higher degree of safety in the interface between the gear box and the line shaft.
- Separate from the gear motor assembly is a closed loop hydraulic checking device powered by the line shaft itself. When the wall is traveling downwards, the hydraulic checking device builds up a certain hydraulic pressure that is dependent on wall travel speed. In normal operation, this pressure is very low and this checking device offers no appreciable braking force on the wall. If, at any time, the wall speed is substantially greater than normal, this checking device offers sufficient braking force to lower the wall at a speed no greater than 150% of normal operating speed.

- 8. The cables that lift and support Skyfold Operable Walls are aircraft-grade wire cable of the greatest strength and quality. These cables are sized to offer a high degree of safety.
- Each of these cables is lifted by a separate cable drum that is keyed into the solid steel line shaft. In the unlikely event that a cable fails, none of the other cables will be affected.
- Each cable drum is supported by two pillow block bearings, one on each side, for maximum safety.
- The cable is wrapped over the drum such that at least two full wraps remain on the drum with the wall in the down position.
- The bottom edge of the wall is equipped with an obstruction sensor that runs the entire length of the wall. When the obstruction sensor comes in firm contact with an obstruction while the wall is descending, power is cut to the lifting motor, the electromagnetic brake engages and the wall's decent is instantly halted. The wall will automatically reverse direction and ascend for 3 seconds to clear the obstruction. This not only protects persons in the vicinity of the wall but also protects the wall itself. If a chair or table has been mistakenly left in the path of the wall, the wall will simply stop and auto-reverse when it touches the obstruction.

Skyfold Mirage®:

- Skyfold Mirage Operable Walls are operated with two switches wired in series that must be operated simultaneously. The main switch requires the use of a key to activate the system. Once the key is turned to the desired operation, "up" or "down", the wall can then be operated by depressing the push button on both switches simultaneously. When either or both push buttons are released, the wall stops immediately, without coasting.
- The gear motor that powers the entire system is a heavy-duty, sealed, industrial motor designed for hundreds of stops and starts an hour. It is rated for service several orders of magnitude more rigorous than the service it experiences on Skyfold Mirage Operable Walls.
- The gear motor has an electromagnetic brake on the opposite end of the output shaft. When there is power at the motor, this brake is energized in the open position. In the case of loss of power, this brake activates instantly and prevents any movement of the motor until power is restored. This brake is rated for 200% of the motor's full torque rating.
- The motor assembly uses a spring-cushioned torque arm in order to soften the system's starts and stops. As part of this assembly, there is a sensor on the torque arm that detects higher than normal torque levels. In the event of a mechanical jam, or if the upper limit switch fails to operate, this over-torque sensor quickly cuts power to the motor.
- The gear motor controls contain the latest in overload protection and other electrical safeguards.
- The line shaft that rotates all of the cable drums is continuous throughout the gear motor, without a coupling. This assures a higher degree of safety in the interface between the gear box and the line shaft.

- Separate from the gear motor assembly is a closed loop hydraulic checking device powered by the line shaft itself. When the wall is traveling downwards, the hydraulic checking device builds up a certain hydraulic pressure that is dependent on wall travel speed. In normal operation, this pressure is very low and this checking device offers no appreciable braking force on the wall. If, at any time, the wall speed is substantially greater than normal, this checking device offers sufficient braking force to lower the wall at a speed no greater than 150% of normal operating speed.
- The cables that lift and support Skyfold Mirage are aircraft-grade wire cable of the greatest strength and quality. These cables are sized to offer a high degree of safety.
- Each of these cables is lifted by a separate cable drum that is keyed into the solid steel line shaft. In the unlikely event that a cable fails, none of the other cables will be affected.
- Each cable drum is supported by two pillow block bearings, one on each side, for maximum safety.
- The cable is wrapped over the drum such that at least two full wraps remain on the drum with the wall in the down position.
- The partition is equipped with an optical sensor that cuts power to the lifting equipment if an object or person passes between the emitter and receiver. The wall automatically reverses direction and ascends for 3 seconds to clear the obstruction. This not only protects persons in the vicinity of the wall but also protects the wall itself.