Automatic
Automatic shutters are constructed with galvanized steel frames and drilled for ease of installation. Aluminum felt-edged blades open from fan pressure and close automatically when fan is off. All aluminum construction is available as an option.

Motor-Operated, End-Pivoted
Used for exhaust only. Constructed of galvanized steel frames and aluminum felt-edged blades. Flanges are drilled for ease of installation. Motor-operated units are furnished with electric actuators. These actuators are not equipped with end switches. All aluminum construction is available as an option.

Motor-Operated, Center-Pivoted
Can be used in either supply or exhaust applications. Constructed of galvanized steel frames and blades with stainless steel jamb seals. Blades are held in place with oil-impregnated bronze bushings. Motor-operated units are supplied with electric actuators that are furnished with end switches.

Manually-Operated
Manually-operated shutters are of the same rugged construction as the automatic shutter. This shutter is supplied with a six-foot pull chain connected through a pulley on the inside of the shutter. Spring arrangement holds louver tightly closed when unit is not in use. All aluminum construction is available as an option.

Extra Heavy-Duty
Extra heavy-duty shutters are recommended where discharge velocity exceeds 2400 FPM or where velocity is low and excessive fluttering action is a concern. All extra heavy-duty shutters have 16-gauge aluminum blades. Can be provided as automatic, manual or motorized operation.

Typical Shutter Installations

**AUTOMATIC TYPE:**
Designed for horizontal airflow — gravity close. Optional bird screen shown.

**CEILING TYPE:**
Designed for vertical airflow. Auto-matic gravity close. Exhaust only.
Motor operated shutters used in air-handling systems should be wired to allow the shutter to open before the fan is started. A shutter end switch should be mounted in the fan starter circuit. The shutter end switch may be one of two types:

1. **LEVER OR LINKAGE ACTUATED**: Allen Bradley 802TAW1 or equal. Mount switch to be actuated by shutter linkage or shutter leaf when shutter is approximately 80% to 90% open.

2. **MOTOR MOUNTED AUXILIARY SWITCH**: Switch mounts on side of motor opposite shutter linkage and is actuated by shaft. Set so cam actuates switch when shutter is 80% to 90% open.

The following end switches can be used on various motors:

- A. Control Transformer (115V Secondary)
- B. On-Off Selector Switch
- C. Shutter Motor (115V)
- D. Shutter End Switch
- E. Holding Coil — Fan Starter (115V)
- F. Thermal Overload Contactors

All shutter motors operated on 115 volts.