

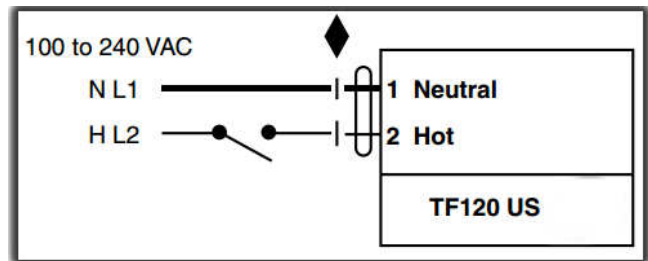


Intake Shutter & Motor Installation Tips

Shutter Motor Installation

General Safety Information

1. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA) in the United States.
2. Belimo shutter motors are double insulated, so an electrical ground connection is not necessary.
3. Always disconnect power source before working on or near a motor or its connected load. If the power disconnect point is out-of-sight, lock it in the open position and tag to prevent unexpected application of power.
4. Protect the power cable from coming in contact with sharp objects.
5. Do not kink power cable and never allow the cable to come in contact with oil, grease, hot surfaces, or chemicals.
6. Make certain that the power source conforms to the requirements of your equipment.



Shutter Motor Installation

1. Fasten motor bracket loosely to shutter frame with two motor plate bolts and nuts.
 2. With shutter closed and motor arm in closed position, loosen adjustable motor arm linkage.
 3. Connect motor arm linkage to tie bar and tighten securely.
 4. Tighten adjustable linkage that was loosened in Step 2 above.
- IMPORTANT:** Linkage bar must be on right side of tie bar.
5. Slide motor plate right or left to align linkage along side tie bar. Tighten motor plate securely to frame.
 6. Determine power supply voltage and wire shutter motor per appropriate wiring diagram . Be sure to insulate the unused lead.
 7. Discard one bolt and nut on aluminum unit.
- NOTE:** Unit not field serviceable and should be replaced as an assembly.

Mounting Motor and Arm Linkage

IMPORTANT NOTES:

1. Motors are fastened to the aluminum shutters with a single nut and bolt. Use the front slot on the motor bracket to mount it to the shutter.
2. Make sure the motor is off and the shutter louvers are completely closed when attaching the arm linkage to the tie bar.
3. The arm linkage section attached to the black shutter motor arm should not have to be adjusted. Only the slider on the arm linkage itself should be adjusted for a snug fit.



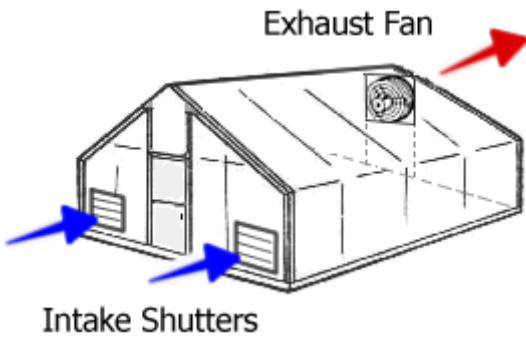
Setting the Rotation Limiter

The rotation limiter controls how far the arm on the shutter motor rotates. It should be set to the highest position to work properly with intake shutters. To do this, take a Phillips head screwdriver, and turn the screw counter clockwise to loosen the limiter screw (shown in picture to the right). Then slide the limiter as far up as it will go. Now tighten the limiter screw by turning it clockwise.



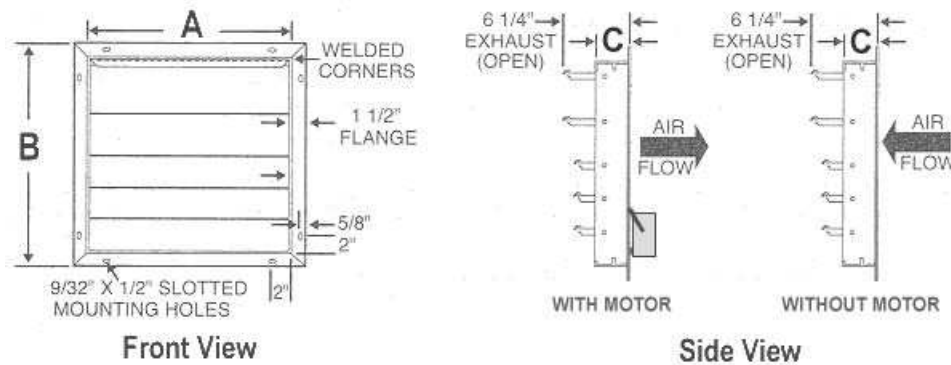
Intake/Exhaust Shutter Installation

1. Fasten the shutter motor to the shutter frame.
2. Mount shutter frame level and square to an outside wall. Care should be taken not to twist the shutter frame. **DO NOT** install shutter leaning forward or backward (vertical mount only).
3. Shutter should operate as freely after installation as it did before.
4. Caulking compound is recommended between the shutter frame edges and the wall.
5. Clean and lubricate shutter at the same time as the fan (usually annually).



SHUTTER LOCATION ON A GREENHOUSE

The picture to the left shows optimal fan and shutter placement in a greenhouse. The exhaust fan should be mounted near the peak so that it is exhausting the hottest air in the greenhouse. The intake shutters should be mounted on the opposite end of the greenhouse so that the cooler fresh air travels across the entire structure minimizing hot spots.



Intake Shutter Dimensions

| Shutter Size | A | B | C | Opening Size |
|--------------|----------|---------|---------|--------------|
| 12" | 12 1/16" | 15 1/8" | 2 5/16" | 12 1/4" sq. |
| 16" | 16 1/16" | 19 1/8" | 2 5/16" | 16 1/4" sq. |
| 20" | 20 1/16" | 23 1/8" | 2 5/16" | 20 1/4" sq. |
| 24" | 24 1/16" | 27 1/8" | 2 5/16" | 24 1/4" sq. |
| 30" | 30 1/16" | 33 1/8" | 2 5/16" | 30 1/4" sq. |