

Operation and Maintenance Instructions for Motorized & Manual American Coolair Shutters Type S24-60 & LRW 16-66

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Operation and Maintenance Instructions for Type S Manual & Motor Operated Wall Shutters

Single-Panel Motor Operated Shutter Models S24 - S36

1) These shutters have two tiebars. Before mounting the shutter motor to the shutter, position the shutter motor on the bracket as shown in Figure 4 or Figure 5, depending on shutter motor model. Mount the motor and bracket to the bottom of the inside face on the back of the shutter. Holes in the shutter frame are pre-punched. Position the bracket so that it is attached to the shutter frame along both the bottom and side (Figure 1). Use the nuts and bolts provided to attach the bracket to the shutter frame.

2) With the shutter in the closed position, place a small S-hook in the lower center hole in the left tiebar. Manually rotate the operator arm so that it is pointing up. Cut the chain linkage to the correct length and attach it to the small S-hook. Attach the other end of the chain linkage to the large S-hook on the operator arm. Crimp the S-hook closed. Remove and discard the extra chain from the large S-hook in the operator arm. Discard the extra S-hook, which is not used.

3) Mount a return spring to the shutter frame using the clamping screw. Align the return spring parallel to the chain linkage. Connect the return spring wire to the upper center hole in the left tiebar. Adjust the tension to hold the shutter blades firmly closed. Discard the extra return spring.

4) Check the voltage on the motor. Connect the wiring and test the shutter's operation. Adjust the linkage if necessary.

Double-Panel Motor Operated Shutter Models S42 - S60

1) These shutter models consist of two panels divided by a center rail. Before mounting the shutter motor to the shutter, position the shutter motor on the bracket as shown in Figure 4 or Figure 5, depending on shutter motor model. Mount the motor and bracket assembly to the bottom center of the outside face on the rear of the shutter (See Figure 2). Holes in the center rail and the bracket are pre-punched. Position the bracket by aligning the holes in the left side of the bracket with the holes in the center rail. Bolt the bracket to the center rail using the 1/4" nuts and bolts provided.

Note: To avoid interference, the bolts must be inserted with the heads on the inside of the shutter and the hex nuts on the outside (bracket side).

2) With the shutter in the closed position, place a small S-hook in two of the center holes located in the factory-mounted pull bar. Manually rotate the operator arm so that it is pointing up. Cut the chain linkages to the correct length and attach them to the S-hooks. Crimp the S-hooks closed. Connect the other end of the chain linkages to the large S-hook on the operator arm. Crimp the large S-hooks closed.

3) Connect the return springs to the shutter frame using the clamping screws. Align the return springs parallel to the chain linkages. Connect the return spring wire to the upper center hole in each tiebar. Adjust the tension to hold the shutter blades firmly closed.

4) Check the voltage on the motor. Connect the wiring and test shutter's operation. Adjust the linkage if necessary.

Manually Operated Shutter Models S24 - S60

1) The chain linkage should be mounted as outlined previously for motor operation. Refer to figure illustrating linkage for correct shutter model.

2) For manual operation, attach extra link of chain to S-hook at point where operator arm is shown in figure.

3) Drill a hole (9/32" dia.) in the lower rail of shutter frame as shown in Figure 3. Attach the eye-bolt with the provided hardware as shown.

4) Thread the chain through eyelet of eye-bolt. Fasten chain anchor on wall below shutter to provide anchor for lower end of chain when shutter is in the "open" position.

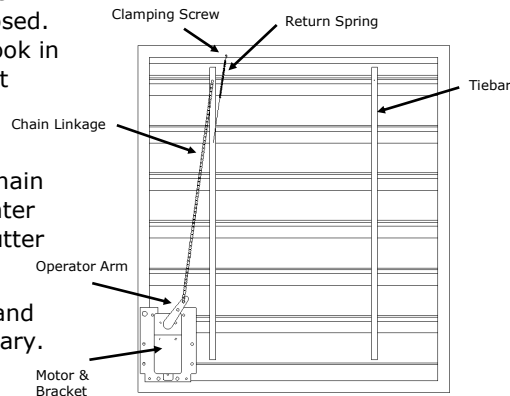


Figure 1
S24 - S36



Figure 3
Manual Chain Eyebolt

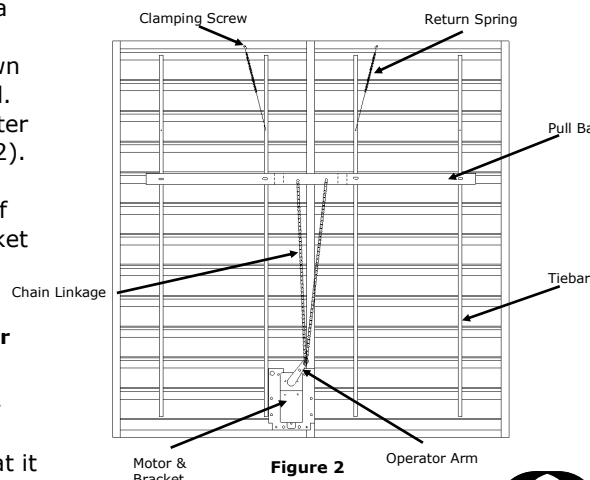


Figure 2

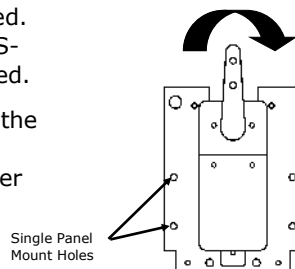


Figure 4
Multiproducts Motor

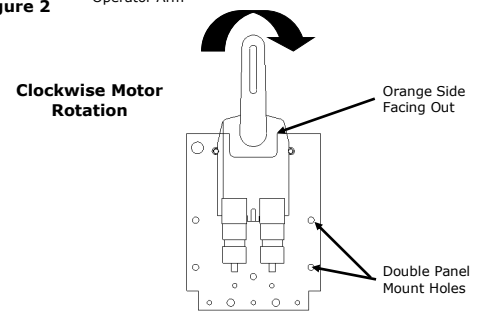


Figure 5
Belimo Motor

Operation and Maintenance Instructions for Type LRW 16-66 Motor Operated Wall Shutters

Single-Panel Motor Operated Shutter Models 16, 21, 23, 27, 33

- 1) Position the shutter motor on the bracket as shown in Figure 6 or Figure 7, depending on shutter motor model.
- 2) Align the motor bracket flush with the bottom flange and 1.5" inset from the left flange of the shutter. Use the 1/4" holes on the bracket as guides and attach the motor bracket to the shutter frame using the self-drilling screws provided.
- 3) With the shutter in the closed position, place a small S-hook in the top hole of the tiebar. See **DETAIL 1 PAGE 5**
- 4) Adjust the operator arm so that it is points 1 o'clock and attach the large S-hook to the end of the operator arm.
 - To rotate the operator arm on the Belimo shutter motor, the retaining clip on the arm must first be removed. When reattaching the operator arm be sure it is full seated and retaining clip re-installed.
- 5) With the shutter closed, connect one end of the chain to the tie bar hook, estimate the length of chain needed to reach the operator arm S-hook and attach. **DO NOT CUT CHAIN. FOR BELIMO MOTORS, SEE DETAIL 2 PAGE 5**
- 6) Drill a 1/8" hole in the top shutter flange approximately 1" to the right of the tie bar.
- 7) Connect a small S-hook to the end of the return spring and feed it into the 1/8" hole. Affix the opposite end of the spring to a hole in the tie bar. Adjust the spring tension to hold the shutter closed.
- 8) Check the voltage on the motor. Wire and test the shutter's operation. Adjust the linkage if necessary. Cut and discard extra chain.

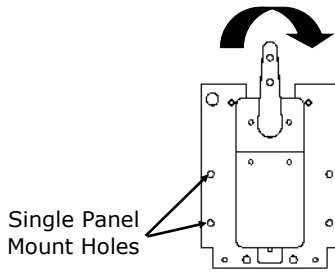


Figure 6
Multiproducts Motor

Clockwise Motor Rotation

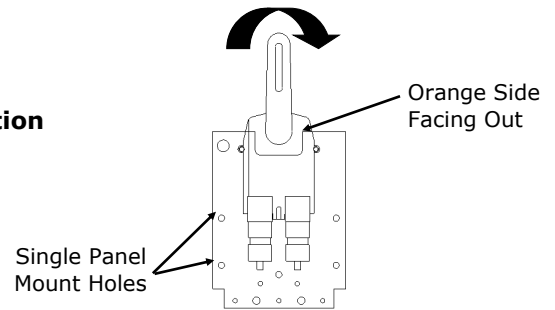


Figure 7
Belimo Motor

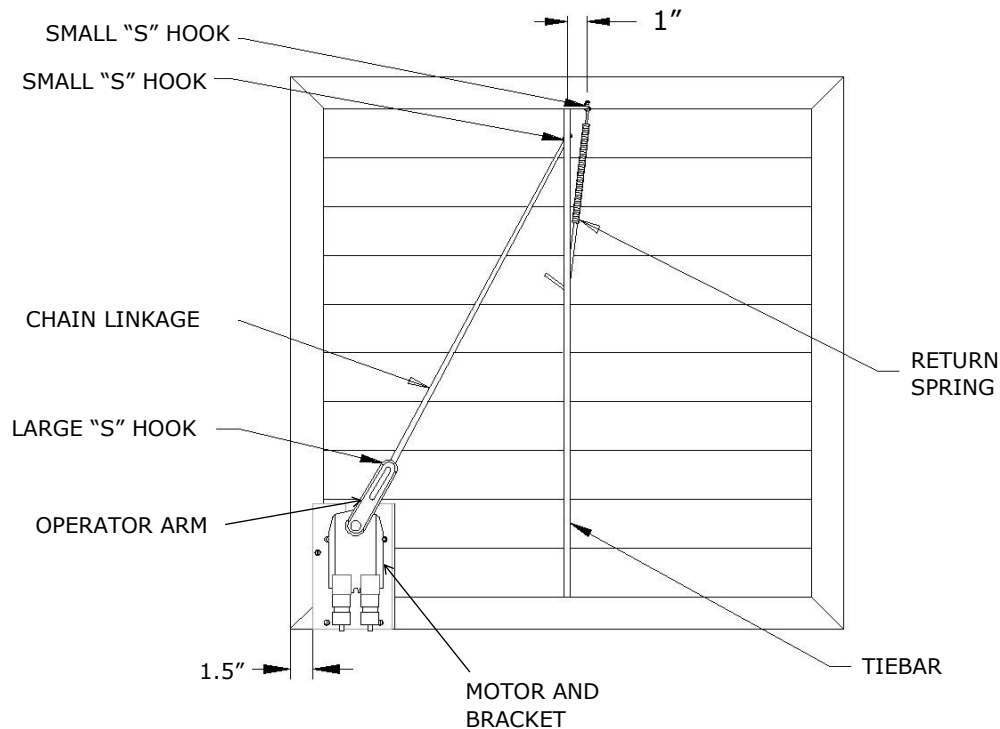


Figure 8
Single Panel LRW Shutter

Operation and Maintenance Instructions for Type LRW 16-66 Motor Operated Wall Shutters

Double-Panel Motor Operated Shutter Models 39, 45, 51, 57, 66

- 1) Position the shutter motor on the bracket as shown in Figure 9 or Figure 10, depending on shutter motor model.
- 2) Align the motor bracket flush with the bottom flange and center the 1/4" holes on the center flange
- 3) Using the motor bracket as a guide, drill through the center flange to use (2) 1/4" bolts to mount the bracket.
- 4) Attach the motor bracket to the center flange - inserting the bolts from the shutter blade side of the flange.
- 5) Affix (1) small S-hook to each tie bar in the top most hole.
- 6) The operator arm of the shutter motor should be in the 12 o'clock position.
 - To rotate the operator arm on the Belimo shutter motor, the retaining clip on the arm must first be removed. When reattaching the operator arm be sure it is full seated and retaining clip re-installed.
- 7) Attach the large S-hook to the end of the operator arm. **FOR BELIMO MOTORS, SEE DETAIL 2 PAGE 5**
- 8) With the shutter blades closed, attach one end of the chain to the S-hooks on the tie bars. Attach the free end to the S-hook on the shutter motor. **DO NOT CUT THE CHAIN UNTIL ALL STEPS ARE COMPLETE.**
- 9) If using return springs, drill (1) 1/8" hole, 1" to the outside of each tie bar on the shutter frame.
- 10) Remove the U-Shaped clamp from the end of the spring. Attach a small S-hook to the spring and feed the end of the hook into the drilled hole.
- 11) Feed the free end of the spring into the third hole from the top of the tie bar. Adjust spring tension as necessary.
- 12) Wire and test the shutter motor to be sure both panels of the shutter open fully. Cut and discard any extra chain.

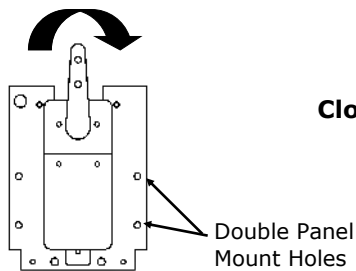


Figure 9
Multiproducts Motor

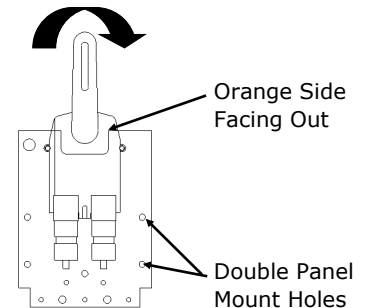


Figure 10
Belimo Motor

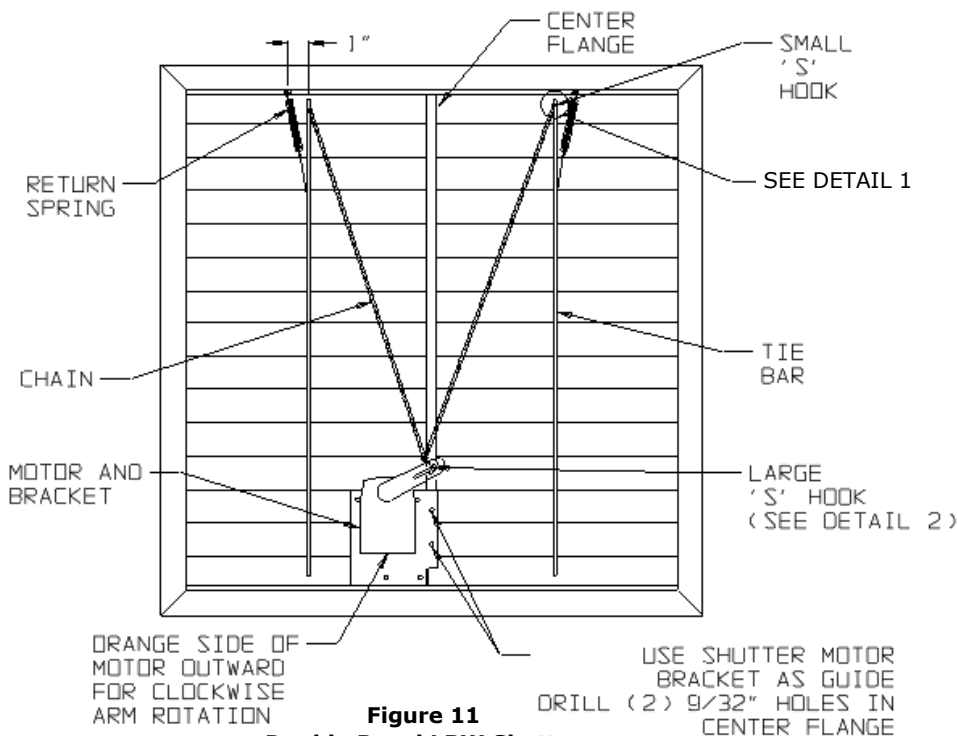


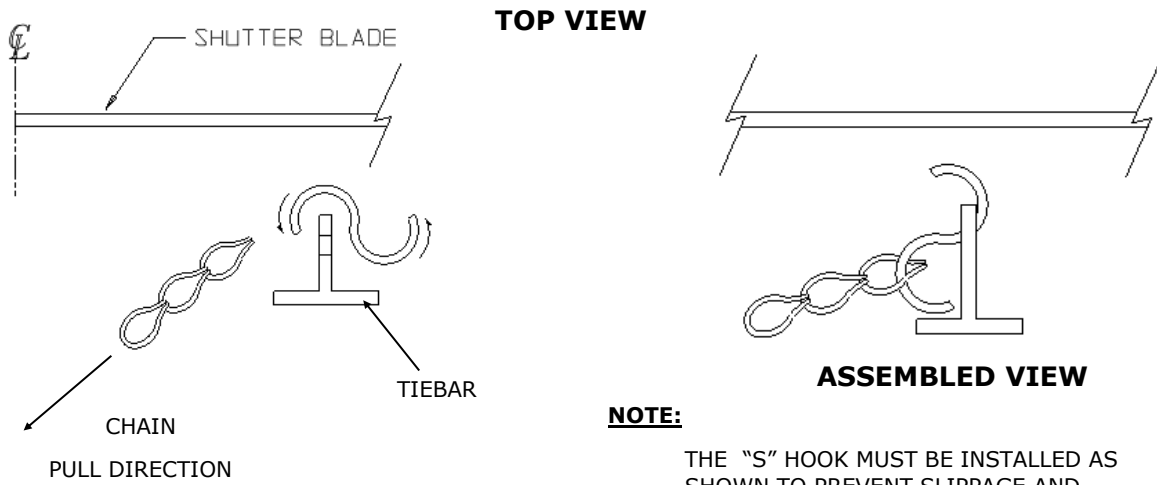
Figure 11
Double Panel LRW Shutter

Table 1
S Hook & Return Spring Location

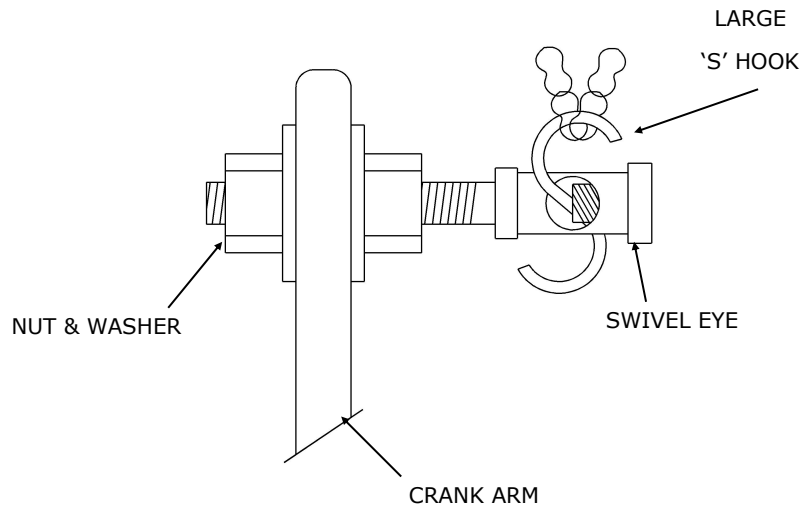
SHUTTER MODEL	HOLE IN TIEBAR (DOWN FROM THE TOP)	
	"S" HOOK FOR CHAIN	RETURN SPRING
39	1	3
45	1	3
51	1	3
57	1	3
66	4	3
4515	1	3
4527	1	3
6024	1	3
6036	1	3

Operation and Maintenance Instructions for Type LRW 16-66 Motor Operated Wall Shutters

Detail Images - Affixing S-Hooks to Tie Bars & Belimo Shutter Motor



DETAIL 1



DETAIL 2

Operation and Maintenance Instructions for Type LRW 16-66 Manual Operated Wall Shutters

Manual Operated Shutter Models LRW 16-66

1) With the shutter in the closed position, attach a small S-hook to the tie bar/s as shown in **Figures 12 & 13** depending on model. **SEE DETAIL 1 PAGE 5 FOR S-HOOK ATTACHMENT.**

- **DOUBLE PANEL SHUTTERS WILL HAVE TWO ATTACHMENTS**

- 1) Attach one end of chain to each S-hook.
- 2) Cut chain to desired length. **FOR DOUBLE PANEL SHUTTERS ATTACH FREE ENDS OF BOTH CHAINS TO A S-HOOK TO COMBINE THEM.**
- 3) Fasten a chain anchor at the desired location below the shutter.
- 4) To attach the return springs, drill a 1/8" in the top shutter frame 1" from the tie bar, on the opposite side of the chain.
- 5) Remove the U-Shaped clamps from the end of the spring. Attach a small S-hook to the spring and feed the end of the hook into the drilled hole.
- 7) Feed the free end of the spring into the third hole from the top of the tie bar. Adjust spring tension as necessary.

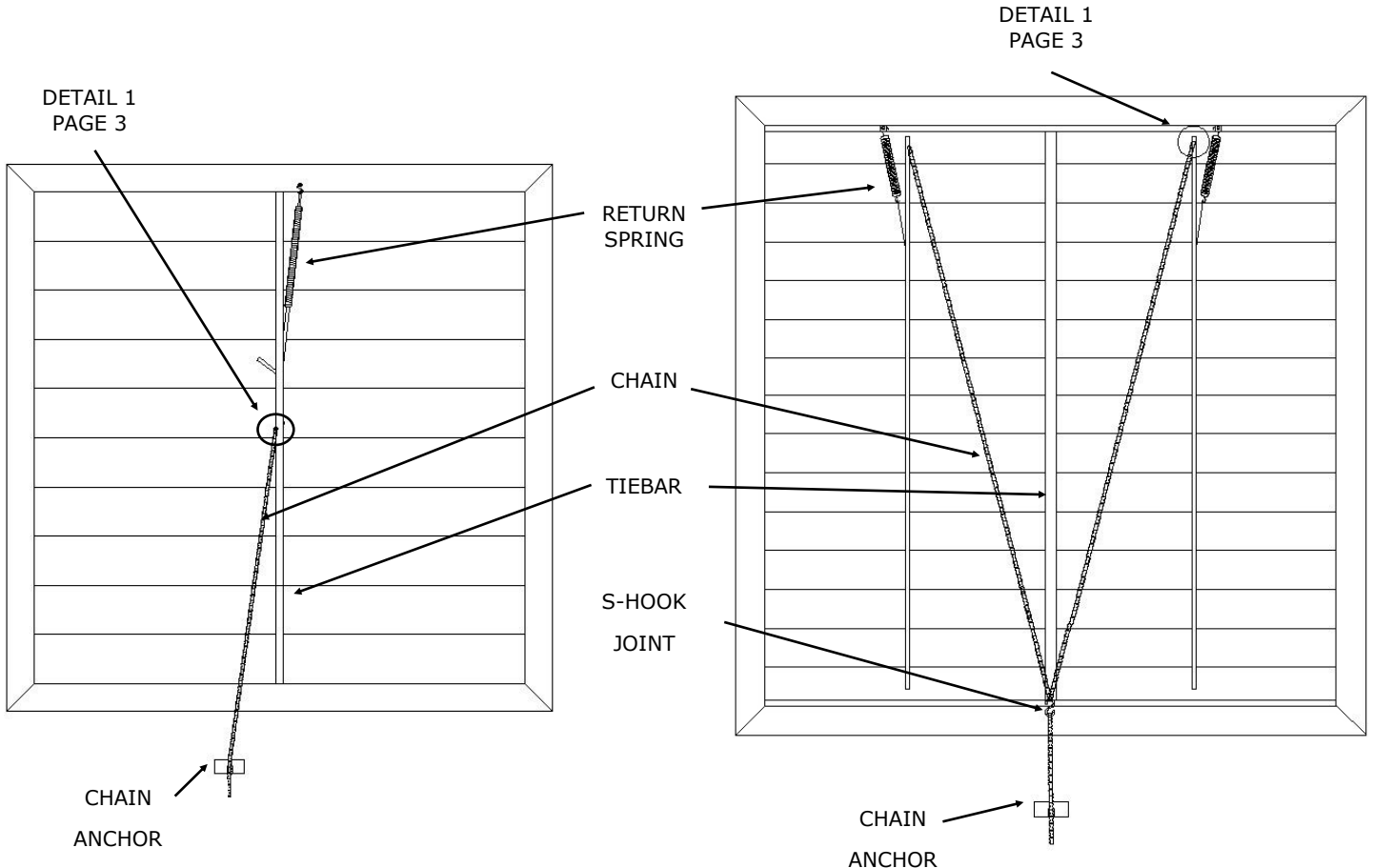


Figure 12
Single Panel LRW Shutter

Figure 13
Double Panel LRW Shutter

Installation Instructions for Type S Manual & Motor Operated Wall Shutters

Pre-Installation Check of Shutter

Before installation, carefully check for shipping damage which may affect the operation of the unit. Concealed damage to the shutter is possible. If damage is found, file a claim immediately with the delivering carrier.

Alternate Installation Methods

All shutter models are shipped with flanges detached (but in the same carton as the shutter). This allows the shutter to be mounted either to the outside face of the wall opening and flush with the outside wall (Figure 14), or recessed into the wall opening and flush with the outside wall (Figure 15). The shutter may also be mounted without the use of flanges if desired.

Installation Procedures

CAUTION: The Type S shutter is made up of many precision made parts. For the shutter to function properly, care must be taken when mounting and installing to avoid damage.

- Do not twist the shutter frame or force shutter when attaching it to the wall opening.
- Caulk around the edge of flanges and wall to prevent water leakage.
- When face-mounting the shutter to a wall, caulk joint of top flange and shutter frame. See Fig 14 and Detail 1.
- When flush mounting the shutter, caulk joint of bottom flange and shutter frame, and also under weep holes (recommended bead of caulk along the bottom edge of the shutter frame before flange is attached) see Figure 15 and Detail 2. After the flange is attached, caulk under weep hole to avoid leaking behind the flange. Do not block weep holes with caulk.

Note: When flush mounted, the bottom flange must be behind the bent edge of the bottom filler strip (see Detail 2). Wall opening should be a minimum 1/4" larger than the shutter frame.

- If the shutter is mounted without the use of flanges, do not attach to the wall opening through the side of the shutter frame. Instead, use angle clips and holes through which flange is normally attached.
- On 42"- 60" shutters, the center flanges (two shortest flanges) need to be mounted to the center frame rail of the shutter in order to minimize air and water leakage. The rear center flange, which has 5 holes, mounts to the tiebar (or blade linkage) side of the shutter. The front center flange, which has 3 holes, mounts on the opposite side of the shutter.

Note: When attaching the top and bottom flanges to the top and bottom frame rails of the shutter, make sure that the large hole on the corner of the flange fits over the rivets on the corner of the shutter frame. See Detail 2.

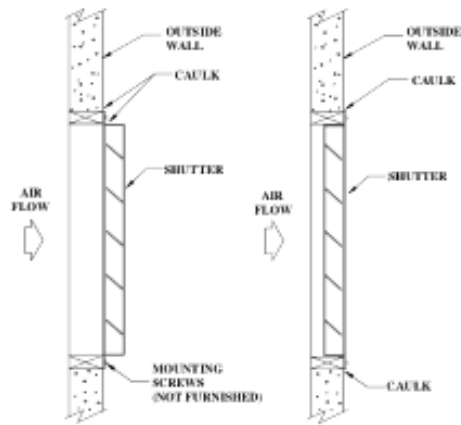
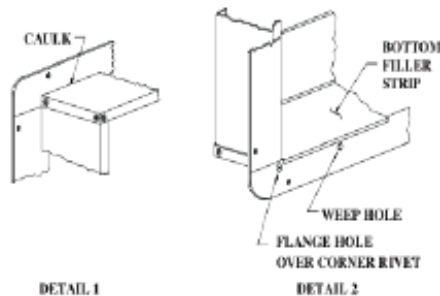


Figure 14

Figure 15



DETAIL 1

DETAIL 2

Fan Shutter Spacing

For improved fan performance and extended fan and shutter life, a space equal to one-half of the propeller diameter between the fan and shutter is recommended. If job conditions will not provide recommended space, the following minimums should be observed:

- S24 - S48 5 inches
- S54 - S84 7 inches

Notice : Do not return damaged or defective parts to American Coolair Corp without prior authorization. If repairs under warranty are claimed, see warranty terms on the reverse. Claims for warranty repairs regarding the motor should be made directly with the motor manufacturer.



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