

ROLLING SHUTTERS



Effortlessly creating a secure barrier to protect your work environment while you're away.



- Protects you from crimes of opportunity.
- One time application means guaranteed payback.
- Unobstructed view when they are open unlike window bars.
- Pentagon shutters effectively secure high value liquor, tobacco and pharmaceutical products.



Vrinda
www.GlassEssential.com
 1-877-874-6321

ROLLING SHUTTERS



Pentagon's aesthetically pleasing shutters add beauty and value to your property while deterring intruders, giving you peace of mind.



- Reduced insurance costs.
- Shield from extreme weather conditions.
- Insulated shutters provide energy savings, summer and winter.
- Maintenance free.
- Easy manual or motorized operation available.

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SLAT DESIGNS



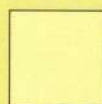
400 Series 420 Series 440 Series 450 Series 500 Series 520 Series 530 Series 540 Series 560 Series 561 Series

TYPE OF SLAT										
Height of Slat	40 mm	40 mm	37 mm	40 mm	53 mm	53 mm	66 mm	53 mm	56 mm	56 mm
Roll Formed Aluminum - Regular Density Foam	●				●					
Roll Formed Aluminum - High Density Foam		●				●				
Roll Formed Aluminum - Ultra Hard Resin			●					●		
Extruded Aluminum				●					●	●
Clear Lexan							●			
Perforated										●
AVAILABLE COLORS										
Arctic White	●	●	●	●	●	●	●			
Ivory Tusk	●	●		●	●	●	●			
Sand Beige	●	●	●	●						
Aluminum Grey	●	●	●		●	●	●	●		
Medium Brown	●	●	●	●	●	●	●			
Clear Anodized				●					●	●
MAX RECOMMENDED SIZES										
Maximum Width	126"	156"	204"	204"	192"	204"	120"	228"	228"	228"
Maximum Height	98"	144"	156"	168"	132"	144"	98"	168"	168"	168"
Maximum Area	80ft ²	100ft ²	140ft ²	140ft ²	110ft ²	140ft ²	50ft ²	200ft ²	200ft ²	200ft ²
MAX HEIGHT PER BOX SIZE										
5-3/8" (137 mm)	32"	32"	32"	32"						
6-1/2" (165 mm)	59"	59"	60"	56"						
8" (205 mm)	98"	98"	102"	94"	58"	58"	58"	61"	70"	70"
10" (250 mm)	165"	165"	168"	160"	102"	102"	102"	102"	140"	140"
12" (300 mm)	264"	264"	264"	230"	160"	160"	160"	160"	200"	200"
OPERATIONS AVAILABLE										
Tape Colier • Tape Winch • Manual Push-Up • Crank • Electric Motor • Electric Motor with Remote Control										

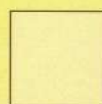
COLORS



Arctic
White



Ivory
Tusk



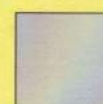
Sand
Beige



Aluminum
Grey



Medium
Brown



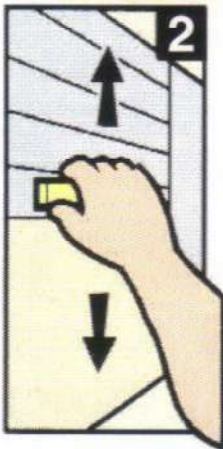
Clear
Anodized

OPERATORS



TAPE

Cost effective solution for interior applications such as residential and counter shutters



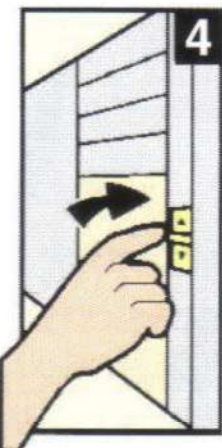
COUNTER BALANCE

This manual push up/pull down option is common. We use only high quality torsion springs mounted within the axle.



CRANK ROD

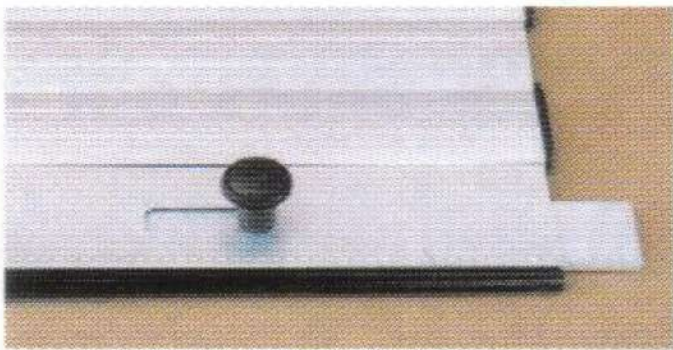
Precision gear driven roll shutters are smoothly operated by a crank rod, which effortlessly clips on or off in seconds



ELECTRIC MOTOR

Most desired! Internally concealed motor provides visually pleasing appearance. Easy operation by a variety of controls: rocker switch, high security key switch and cordless remote.

LOCKING




SLIDE BOLT
Cost effective
and reliable



KEYLOCK
Master keying
available

WHO NEEDS A ROLLSHUTTER?



Everyone!

RESIDENTIAL

Windows
Porches
Patios
Swimming Pool Areas
Bars
Sunrooms
Counters

RETAIL

Storefronts
Mall Closures
Product Displays
Pharmacy
Fast Food

RECREATIONAL

Concessions
Canteens
Kiosks
Pools
Stadiums
Community Centres
Storage Rooms
Gymnasiums

COMMERCIAL

Mailboxes
Windows
Doors
Storage
Service Departments

PROFESSIONAL

Medical
Dental
Schools
Clinics
Cafeterias
Libraries
Staff Rooms
Reception
Patient Records

PRODUCT DISPLAYS

Jewelry
Sunglasses
Liquor
Cameras
Pharmaceutical
Electronics

HOSPITALITY

Bars
Canteens
Lounges
Conservatories
Swimming Areas
Solariums
Reception

BENEFITS OF THE ROLLSHUTTER

SECURITY

- Visual deterrent to burglars - they are more likely to attempt a break-in on a house/business without rollshutters.
- In case of attempted break-in, it will take them much longer to get in and are likely to turn away before they are successful.
- With the help of an alarm system, the extra length of time required to break through the rollshutter will increase the chance of police arriving before thieves can flee.
- Helps to protect your property from vandalism. Even after excessive graffiti, you can save hours of clean up work by simply rolling up your shutter in the morning and your business still looks like new!

ENERGY EFFICIENT

Solar Heat:

- Rollshutters only need to be 2/3 down to be effective in reducing solar heat. The shutter deflects the sun's rays, keeping out unwanted heat in the summer, meaning air conditioning can be run less.

Cold:

- The air space between the rollshutter and the window and the shutter itself provide a layered insulation which reduces heat loss significantly. The bitter cold is kept out and the warm heat inside, lowering heating costs.

WEATHER PROTECTION

- Rollshutters provide a barrier to keep snow and rain off windows (snow should be cleared off shutter before opening) and will reduce damage to your windows from hail and debris during high winds.

LOW MAINTENANCE

- Rollshutters require very little maintenance. Wiping them clean or hosing them off from time to time is adequate to keep them rolling smoothly.

NOISE REDUCTION

- When the rollshutter is in the closed position it again acts as an insulation barrier and significantly reduces noise from outside entering your home. Very beneficial when trying to sleep while your neighbours are partying.

PRIVACY

- Rollshutters are ideal to use when its dark (or light) outside and you don't want bypassers to be peering in the windows watching you.

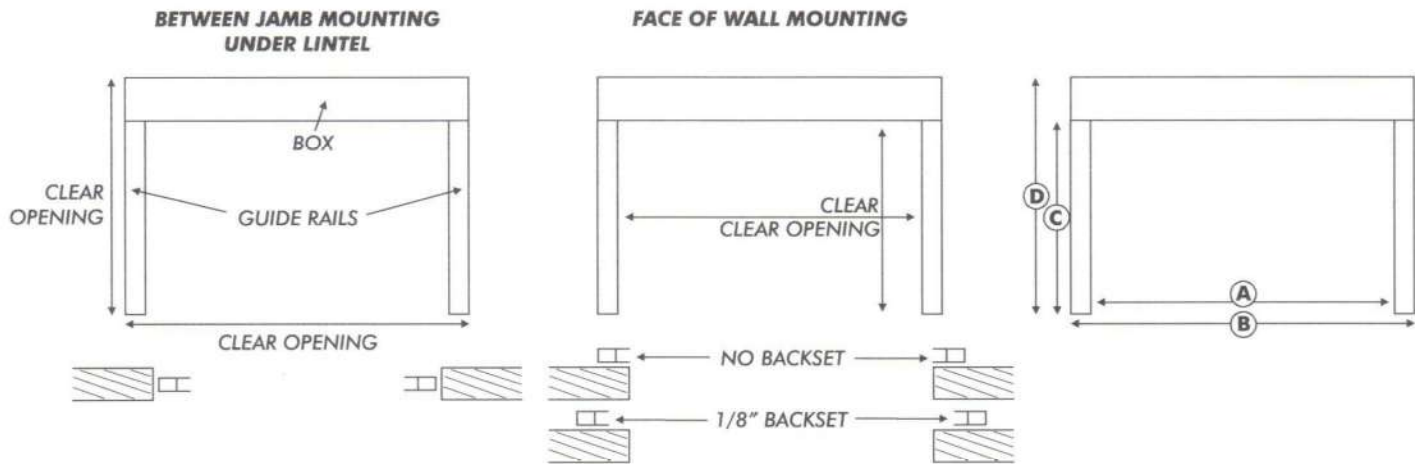
PREVENTS FADING

- Ultraviolet rays greatly fade interior furnishings, such as drapes, carpet and sofas. Using a rollshutter to control the amount of direct sunlight on your interior will prolong the life and longevity of your property.

AESTHETICALLY PLEASING

- Adding a rollshutter to your building/home adds value and character to your property.
- Rollshutters have been used in Europe for years and North America is beginning to use them more and more as they blend in with today's modern trends.
- An old building looks clean and newer when rollshutters are installed.
- Multiple rollshutters provide a tidy, uniform look, making people realize you care about your property.

DETERMINING SIZE



1. Our pricing is based on measurements taken from inside of guide rails (A) and under box (C).
2. If the shutter is between jamb, under lintel, please advise us when you give us the opening size and we'll deduct guide rail width and box height for pricing.
3. When taking final opening measurements you should take the measurement at various points of the width and height of the opening. For 'face of wall' applications give us the largest of these measurements; for 'between jamb' give us the smallest of these measurements.
4. On face of wall mount installations if space permits, we recommend 1/8" backset.
5. Please note: When in the open position, the bottom bar hangs below the bottom of the box 2". If you don't want this hanging down on a 'face of wall' mount application, please add 2" to the height.
6. SILL: If there is no ledge for shutter to rest on when in the closed position sill is required.
7. BUILD-OUT: In some situations there may be obstructions (ie. door handles) that require you to mount the rollshutter away from the opening. Indicate thickness required.

INFORMATION REQUIRED FOR PRICING

For us to provide you with a quotation we will need to know the following:

1. **Size:** See "How to Size a Shutter" Instructions.
2. **Type of Slat:** Each of our slats have different characteristics and are thereby suited to different applications. Look in our brochure or call our office for recommendations.
3. **Operation:** Manual Tape (common for residential and smaller shutters)
Manual Push Up (can be used on most shutters, although on larger shutters crank is recommended)
Manual Crank (recommended on larger shutters)
Electric Motor (can be used on any sized shutter; at the touch of a button even the largest shutter can be operated without any effort)
4. **Locking:** Self locking (not available on manual push up) shutter cannot be lifted more than 2".
Slide bolt (simple and cost effective; perfect for counters)
Keylock (high security; can be rekeyed to match existing locks)
Rocker Switch (electric only; suitable for window and counter applications)
Keyswitch (electric only; high security; can be rekeyed to match existing locks)
Hand held/wall mounted remote transmitter (electric only).
5. **Sill:** If there is no ledge for shutter to rest on when in the closed position, sill is required.
6. **Build-Out:** In some situations there may be obstructions (ie: door handles) that require you to mount the rollshutter away from the opening. Indicate thickness required.

INSTRUCTIONS FOR FILLING OUT YOUR ORDER FORM

The instructions below are meant to help you fill out your order form. However, if you have any questions or need clarification on anything, please feel free to call.

Please fill in the following information:

1. Your invoice name, address and your name.
2. Today's date.
3. Your purchase order number, if applicable.
4. Where you want the shutters shipped to, if different from invoice to.
5. Authorized buyer's signature.
- A. Number of shutters with exactly the same specifications.
- B. Width in mm or inches. Indicate if this includes or excludes guide rails by circling the appropriate box.
- C. Height in mm or inches. Indicate if this includes or excludes box by circling the appropriate box. For face of wall, add 2" if you don't want bottom bar to hang down 2" into opening.
- D. Enter the mounting method for the guide rails. For an explanation look at 'D' on the order form. Please note: indicate if 1/8" backset is required by ✓ in small box.
- E. Enter the mounting method for the box. For an explanation look at 'E' on the order form.
- F. Enter the slat profile you want. See your Pentagon detail sheet for an explanation of each profile option. Profiles available are listed in 'F' on the order form.
- G. Light slots are small vents in the slats which allow light through the rollshutter in certain positions. If you would like light slots on your rollshutter enter Yes (Y) or No (N).
- H. Enter the colour for your rollshutter. See 'G' on the order form for colour options and abbreviations.
- I. If there is no ledge for the shutter to rest on when in the closed position, sill is required. Enter Yes (Y) (extra charge applies) if needed or No (N) if not required.
- J. If there is an obstruction that would hinder the rollshutter from closing completely, you will need build-out. Enter the thickness of the build-out required (extra charge applies). If no build-out is required, put N for No.
- K. Enter how you want us to drill your guide rails. See 'K' on order form for a diagram.
- L. Enter what type of operation you need. See 'L' on order form for list of operators available. For further explanation see Pentagon detail sheet.
- M. Enter which side you want your operator on. See diagram under 'M' on order form.
- N. Enter the position of your operator. Looking at Side A (box side) of your rollshutter, is it on the left or right? On electric operated shutters this will tell you which end the wire exits.
- O. This applies to electric motors only. Would you like to order a manual override for your shutter in case of a power failure? No (N) / Yes, side A (A) / Yes, side B (B).
- P. This applies to electric motors only. Look at diagram 'P' on order form and enter the exit position of the motor wire. If other, show on drawing where you would like it.
- Q. Enter the type of locking method you would like. See 'Q' on order form for options available.
- R. Enter which side of the shutter you want the locks on. See 'R' on order form for options.
- S. Is this shutter released for immediate production? Or do you want us to wait for site dimensions from you before releasing for production? Enter Yes (Y) for immediate; No (N) to wait.
- T. Enter the approximate date you would like to have the rollshutter shipped.

SECURITY SHUTTER INSTALLATION

INTRODUCTION

Thank you for purchasing a quality Security Shutter. We are assured you will be impressed by the product, however, if for any reason you find something not up to your standard, please fill in the "Customer Survey Report". Your comments will help us to improve.

SPECIAL NOTE

Please read all installation instructions, as most problems with shutters are related to poor installation, rather than the product. Also please note the shutter housing must be fastened to solid backing, or the housing could fall and cause bodily injury. You, the installer are responsible that the shutter is sufficiently supported. Be careful not to put undue weight or stress on the leg during installation as it is liable to break it. These instructions are for a "face of wall" installation, however a "between jamb mount" is similar except instead of fastening the guide rails through the front face, you attach them through the opening in the guide rail.

STEP 1 (fig. 1 & 2)

Your shutter has been professionally packaged to ensure you receive it in good order. Carefully unpack your shutter.

STEP 2 (fig. 3)

Remove the protective film from the top and back of the shutter housing. Remove the 2 shipping screws from the bottom bar. (not all models are shipped with them).

STEP 3 (fig. 4)

Compare opening size to actual shutter size as shown on shop drawing. Ensure opening is square and level.

STEP 4 (fig. 5)

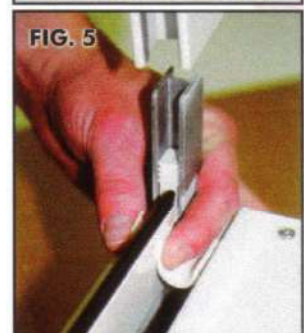
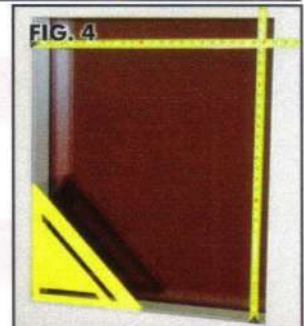
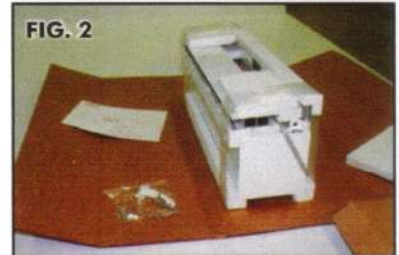
Slide the guide rails down over the end cap legs. Be careful to align the plastic entry guide into the end of the guide rail. Make sure the large holes in the guide rail face the box side of the shutter. Larger shutters are supplied with support brackets - secure both of these now with the screws provided.

STEP 5

Now roll the shutter onto its back and then into the upright position. Grasp the guide rail and the bottom of the shutter housing box and carefully position up against opening. Be very careful when moving the shutter into this position, as undue pressure on the endcap leg could weaken or break it.

STEP 6 (fig. 6)

Once you have the shutter at the proper height, and centered on the opening, adjust the guide rails vertically to make sure the housing is level. Making sure they are equal distance apart at the top and bottom, fasten a screw into the top hole on each guide rail.



Steps 7-12 are only for when the manual tape operation is being mounted on the other side of the wall from the shutter. All other operations go to step 13.

STEP 7 (fig. 7)

Make a vertical 2" long mark alongside the top of end cap on the control side, and 2" across the top of the box. Remove the 2 screws in the top of the guide rails and carefully lower shutter to a stable surface.

STEP 8

On the vertical line just made, measure in towards the window $5/8"$ (16mm) and mark. Then measure down from the horizontal line 1" (25mm) and cross the first mark.

STEP 9 (fig. 8)

On this mark drill a 1" (25mm) hole for the control tape. Control hole must be drilled perfectly straight and level to avoid fraying of the strap.

STEP 10

Insert control tube into hole until it is flush with the inside wall. Make a mark on the tube flush with the outside of the wall. Remove tube and cut off excess tube with a hacksaw. File this cut so that it does not snag the tape. Insert tube into hole so that it is flush on both sides of the wall.

STEP 11 (fig. 9)

Now holding the tape assembly pull out all of the tape until you can see where the tape is hooked onto the tape wheel. Lock tape wheel with a temporary screw to stop the wheel from winding the tape back up. Make a mark on the tape so that you know which side faces out when you reconnect it later. Note the routing of the tape and then remove it from the assembly. Unhook the tape and pull out of the assembly.

STEP 12 (fig. 10)

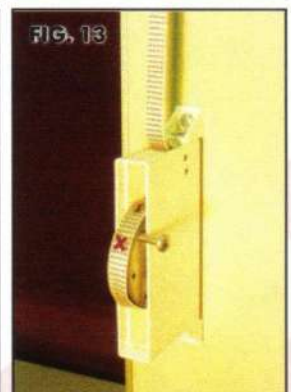
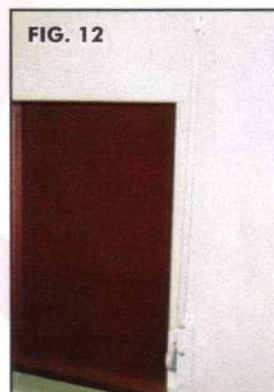
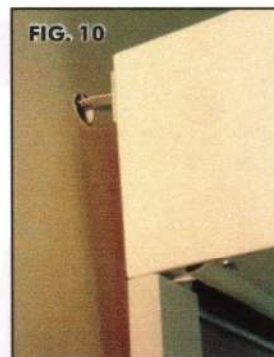
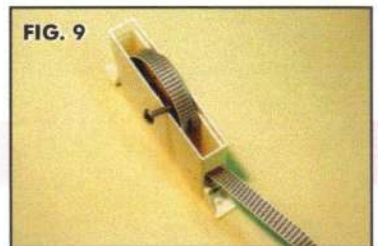
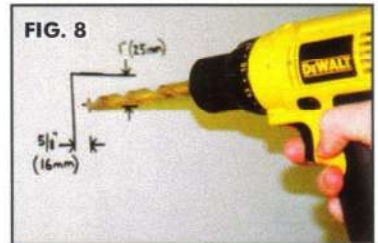
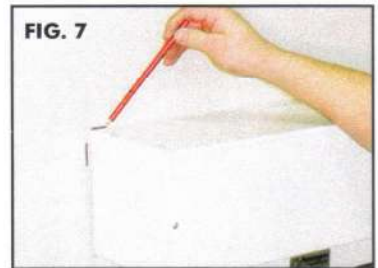
Lift shutter up against the opening and with it slightly leaning out, feed the end of the strap through the control tube. Make sure it is not twisted. Gently lower shutter down guide rails. Be sure to prevent tape from twisting as it is pulled into the box. Re-fasten the top two screws.

STEP 13 (fig. 11)

Double check guide rails are level and equal distance apart top and bottom, fasten shutter using screws provided through the remaining holes. DETERMINE WHICH OF STEPS 14-17 APPLIES TO YOUR APPLICATION.

STEP 14 - FOR TAPE OPERATION MOUNTED ON OTHER SIDE OF WALL TO SHUTTER (fig. 12 & 13)

Where tape came out of control tube, check tape has sufficient clearance. Thread the tape through the tape guide and then fasten it to wall over the $3/4"$ control tube. Making sure the tape is not twisted, feed tape into pull tape assembly under the catch plate and over the support pin and behind the retraction wheel until it comes out the bottom. Now hook tape onto tape wheel making sure



the mark you made is facing out. Pull tape where it comes out of assembly until retraction wheel starts to turn. Still holding tape, remove the temporary screw you put in from tape wheel and slowly feed the tape in to the assembly. Tape should wind up onto wheel. Mount pull tape assembly at the desired height. Snap front cover onto assembly. Test operation. GO TO STEP 18.

STEP 15 - TAPE OPERATION MOUNTED SAME SIDE AS SHUTTER (fig. 14)

Pull tape assembly to desired height and fasten to outside edge of guide rail using drill/tap screws provided or mount to wall. Test operation. GO TO STEP 18.

STEP 16 - CRANK OPERATION (fig. 15)

If crank operation is on the same side as the shutter, the swivel assembly will need to be attached. Slide crank bar up through end cap, making sure it engages with crank assembly. Fasten to shutter using screws provided.

If crank operation is on the other side of the wall from the shutter, remove the shutter housing lid and using a long 1/4" drill bit, place drill bit through the square hole in the crank assembly and drill right on through the wall. Then from the other side of the wall enlarge the hole using a 3/8" or 1/2" bit. Push crank swivel through the hole in the wall and through the crank assembly and fasten to the wall. Swivel bar may need to be cut to length.

Use crank handle to test operation. Mount crank handle clips in the desired position. GO TO STEP 18.

STEP 17 - ELECTRIC MOTOR OPERATION (fig. 16)

Once electric motor has been wired up by an authorized electrician, test shutter operation. See wiring diagram for correct wiring procedures. The limit switch has been factory preset, and should not need to be adjusted. However if for some reason the limits do need adjusting, this may be done using the tool provided. Before the electrician energizes the unit, you need to be sure the bottom bar is in the side rails and not pushed up into the box. Ideally you should be present when the unit is energized. Be sure to read all instructions and warnings before attempting this. GO TO STEP 18.

STEP 18 (fig. 17 & 18)

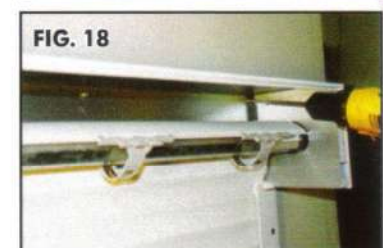
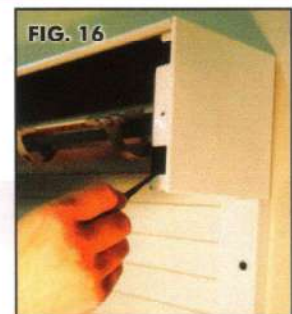
Lower shutter to the bottom. If supplied remove the box support brackets. Remove screws from shutter housing front cover, and carefully remove cover. Fasten the box inside at the top to the wall at about every 18" (460mm). Remove protective film from housing front cover. Replace cover and fasten with screws. Reattach box support bracket if applicable.

STEP 19 (fig. 19)

Carefully hammer plastic hole covers into the large holes on the guide rails.

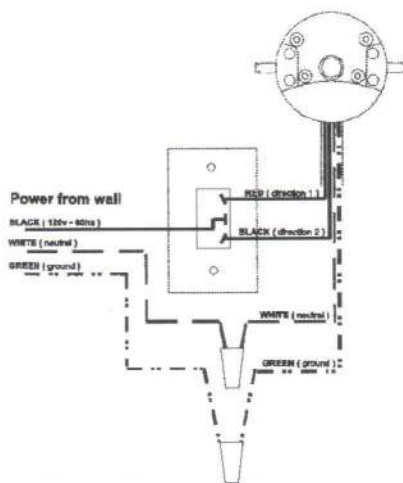
STEP 20

Screw on sill angle at bottom of shutter (if required) to stop bottom bar at end of guide rail.

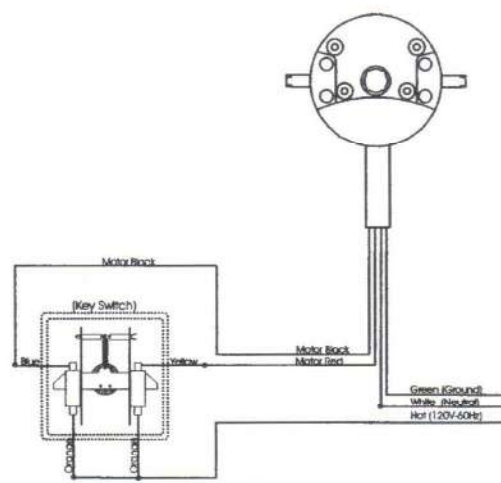


WIRING INSTRUCTIONS FOR MOTORS

Wiring for one motor & one rocker switch



Wiring for one motor & one key switch switch



WARNING

DO NOT wire more than one operator to a single pole switch. A second operator can be wired to the second pole of a double pole double throw (DPDT) switch.

DO NOT connect two switches to an operator without a relay.

Because of the type of motor (Asynchronous with built-in capacitor) and the built-in limit switches, it is important to follow two important recommendations to assure proper operation of the motorized systems - All operators are not universal motors.

DO NOT wire operators in parallel. Parallel wiring means several operators are wired to only one electrical contact per direction of rotation. There will be constant feedback from one motor to another, so stopping points will not be stable and there is a risk of motor burn out. The correct wiring solution is to use a double pole, double throw, centre off switch which would isolate both motors.

DO NOT control one operator from several locations without using a proper controller. These motor control systems are designed to comply with these two basic criteria and assure reliable operation of motorized systems. Non-compliance to these basic principles void the motor warranty.

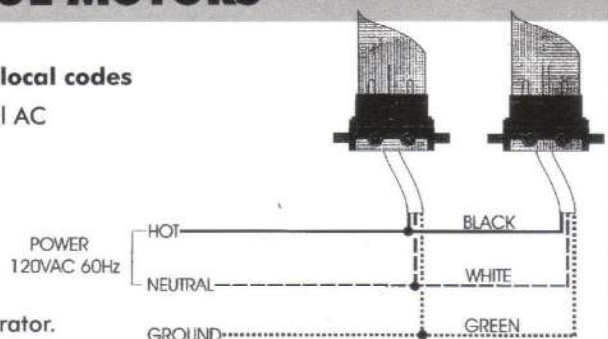
We have a full range of switches, relay systems, remote control systems, group control systems, battery backup systems and electronic sensing edges. Consult factory for further details.

WIRING FOR H_z REMOTE CONTROL MOTORS

H_z Operator Wiring

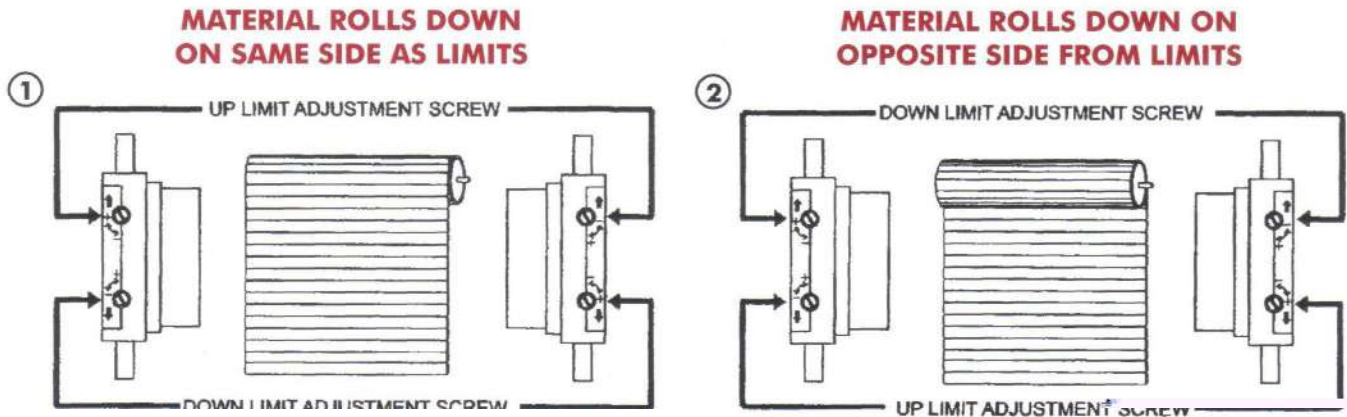
All wiring must conform to the National Electrical Code and local codes

- The H_z operator can be wired to power in parallel (unlike normal AC tubular operators)
- **It is recommended that provisions be made to cut power individually when wiring H_z operator.** This can be in the form of an inline off/on switch, a disconnect plug, or access to the operator cable for use of an installers power cable with off/on switch. The ability to cut the power to each motor individually is required to easily program the receiver in the operator.



LIMIT SWITCH ADJUSTMENT

Your electric roll shutter will leave the factory with the limit switch set for the correct position. However should your roll shutter need adjusting follow the instructions below.



up limit and which controls the down limit (see above / the limit adjustment screw refer to the tube's rotation.

Thus if the material comes off the tube on the back side and the limit adjustment screws face the front (as per diagram 2), the limit adjustment screw facing up controls the down limit and vice versa.

- 2) Turning adjustment screw clockwise will increase the maximum travel in the direction that it controls, and turning it counterclockwise will decrease the maximum travel.
- 3) To set a limit, run the motor in the selected direction.
- 4) If the motor stops on its own before reaching the desired stop, turn the appropriate limit screw positive (clockwise). Every 2 to 3 turns of the limit adjustment screw will allow the motor to travel about 1 inch further. After every few turns of the limit adjustment screw, use the control switch to move the motor to the new limit position. (If the motor does not stop on its own before reaching the desired limit, go to step 6).
- 5) When you are approximately at the desired limit position, use the control switch to run the motor away from the limit 2 to 3 feet, and then back. This will allow you to see precisely where the limit is set. Make small adjustments and repeat.
- 6) If the motor does not stop on its own at least 6 inches before the desired limit position, stop the motor with the control switch 15-18 inches away from the desired stop and then turn the limit adjustment screw 20 revolutions in the negative (counterclockwise) direction. Confirm that the motor is stopped at the limit and set the limit as per steps 4 and 5. If the motor is not stopped at the limit, stop it 15-18 inches away from the desired stop and continue turning the limit adjustment screw counterclockwise (max. 20 revolutions).

NOTE: The motor has a built in thermal cutoff. If after several minutes of use the motor will not run in either direction, allow the motor to cool for approximately 20 minutes.