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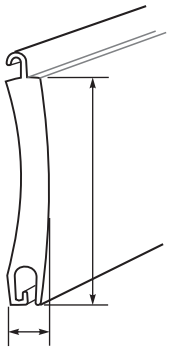
Motor Selection Guide
For Rolling Shutters and Doors

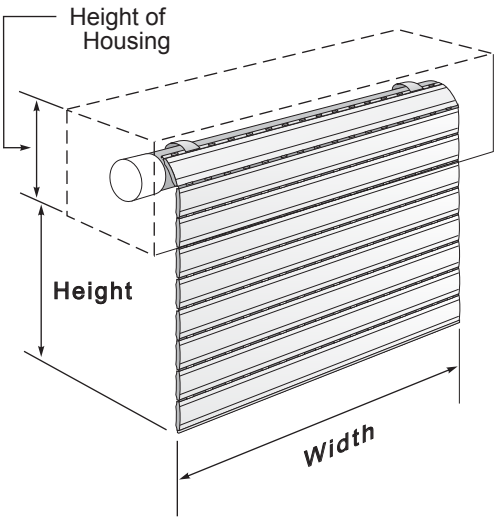
To select a motor in this guide you need to know the following:

1. Type of Slat: Height and Width
2. Total weight of shutter
3. Diameter of the tube



Type of slat:

It is important to consider the total size of the product you plan to produce before choosing an operator, since these variables affect the weight of what an operator can lift. The following charts represent some of the most common motor solutions. Choose the one that most closely corresponds to the weight that you calculate.



Total Weight of Shutter

Total weight = Width x (Height + Height of Housing) x Weight per sq. ft.

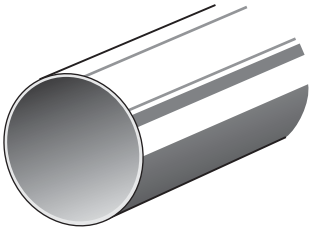
surface

Important Note:

The choice of a motor also depends on the type of installation.

- If you use one motor for two or more shutters add 20% for the first additional shutter to derive the total weight. Add an additional 10% for every shutter after that. Add an additional 10% for end retention shutters.
  Examples: 2 shutters/one motor = + 20% to the total weight.
  3 shutters/one motor = + 20% + 10% to the total weight.

- If the shutter is over 9 feet in height, add 10% to the total weight for every three feet beyond.
  Example: 11 feet in height= total weight + an additional 10% to the effective load to be lifted.



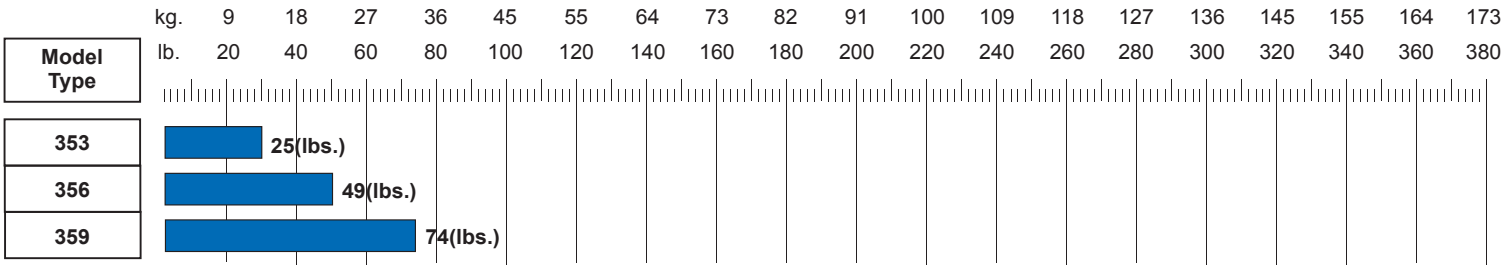
Diameter of Tube:

The lifting capacity of an operator decreases when the tube diameter increases. Therefore, it is necessary to choose the smallest tube while considering the load capacity of the tube and the optimum roll-up diameter of the slats. Keep in mind that if tube spacer rings are used, you have increased the tube diameter.

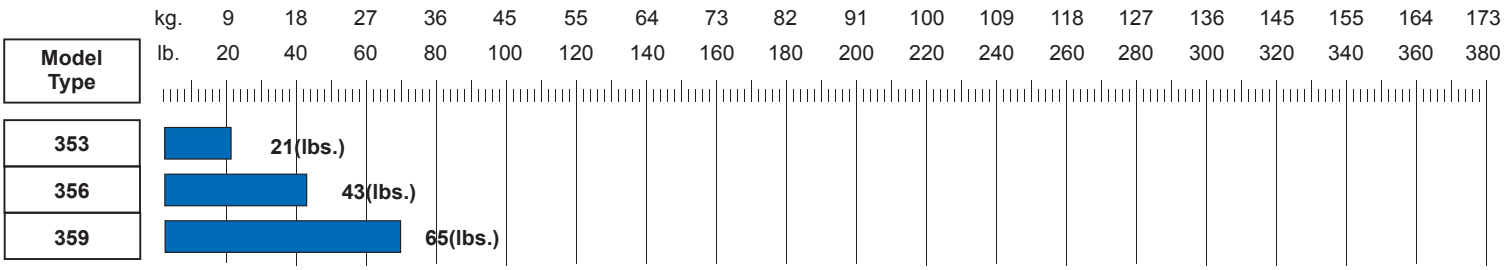
After choosing the chart that corresponds to the tube size being used, select the operator according to the total weight of the shutter.

Motor Selection Guide
For Type 3.5 Operators

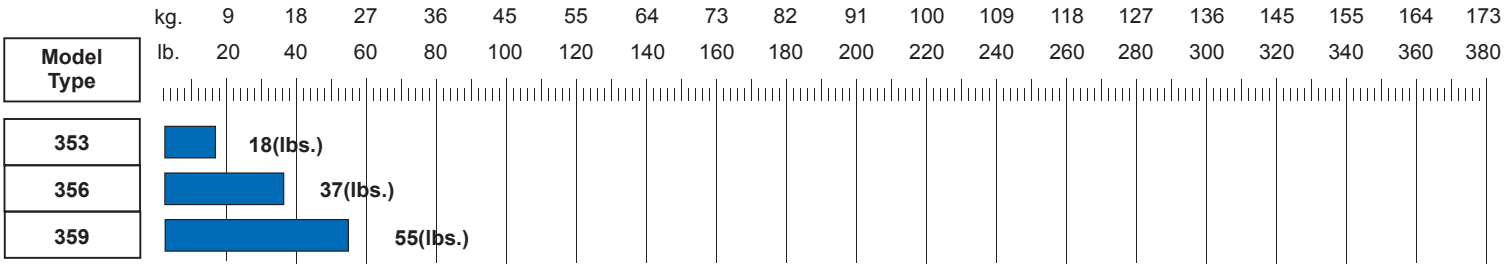
36mm (1.5 inch) TUBE DIAMETER



40mm (1.7 inch) TUBE DIAMETER



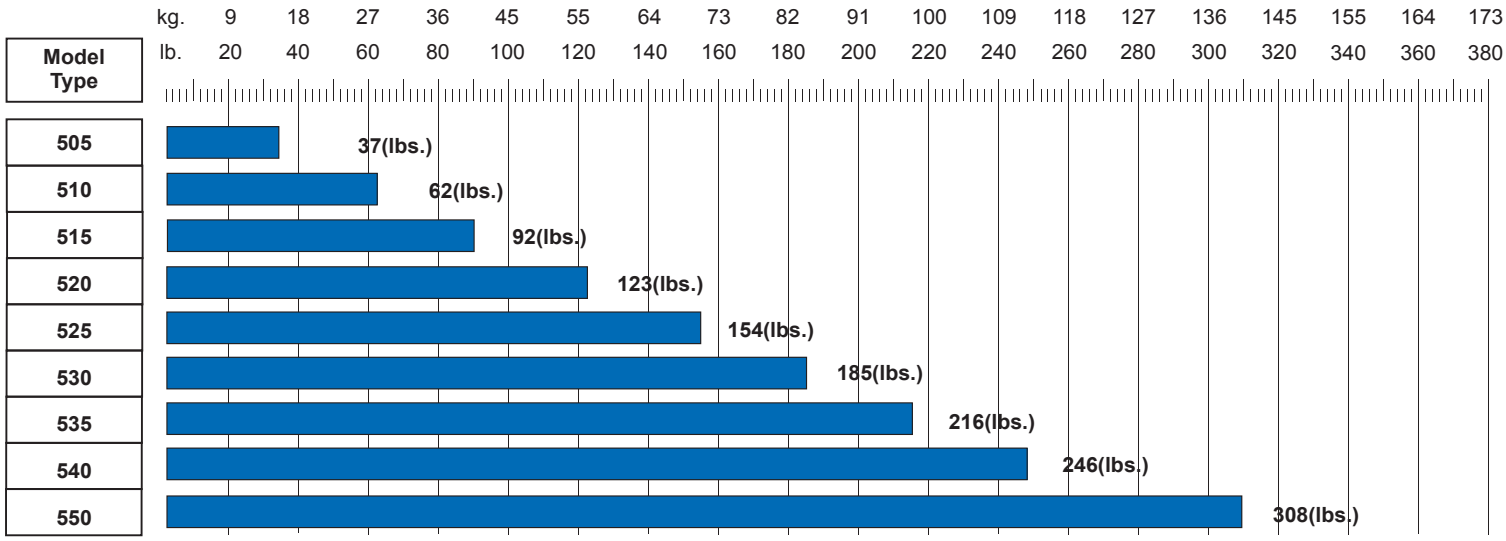
50mm (2.0 inch) TUBE DIAMETER



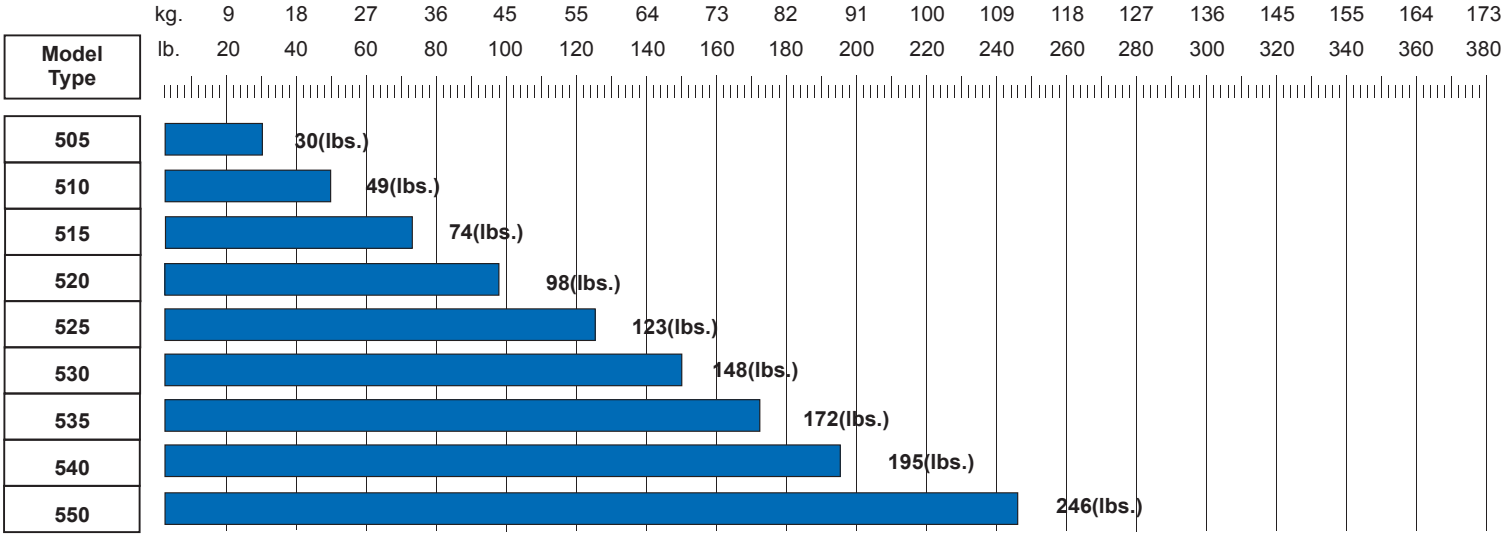
- **This chart reflects the recommended 30% security factor that is used for most applications.**
- **Shutters more than 9 feet high: add 10% to the effective load for every additional 3 feet.**
- **Add an additional 10% to the effective load for shutters using end retention.**
- **Double span shutters: add 20% to the effective load to be lifted.**
- **All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity**

Motor Selection Guide
For Type 5 Operators

50mm (2.0 inch) TUBE DIAMETER



60mm (2.5 inch) TUBE DIAMETER



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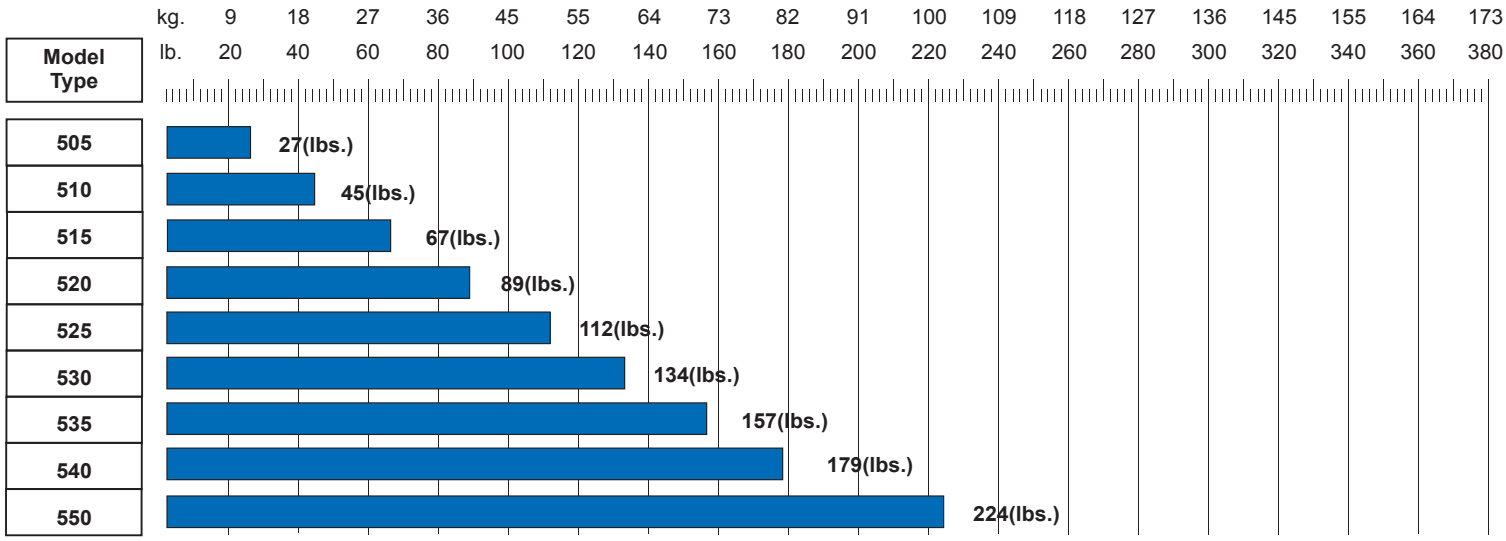
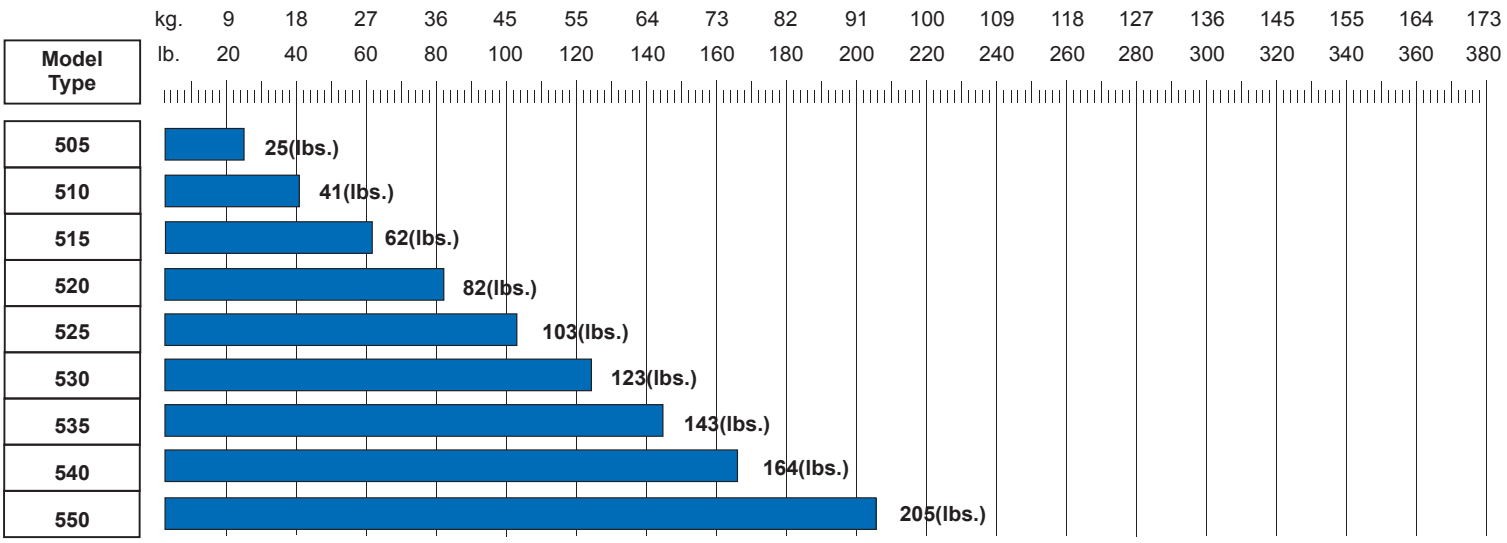
- **Double span shutters: add 20% to the effective load to be lifted.**
- **All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity**

Motor Selection Guide
For Type 5 Operators

70mm (2.75 inch) TUBE DIAMETER



78mm (3.0 inch) TUBE DIAMETER



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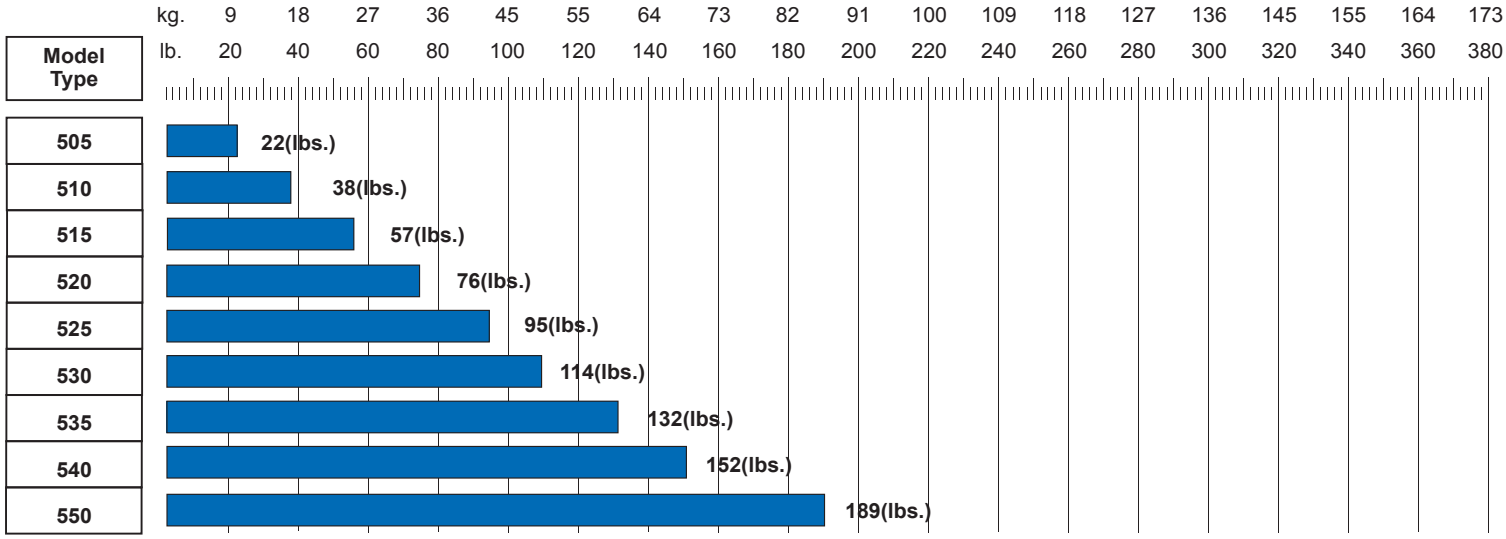
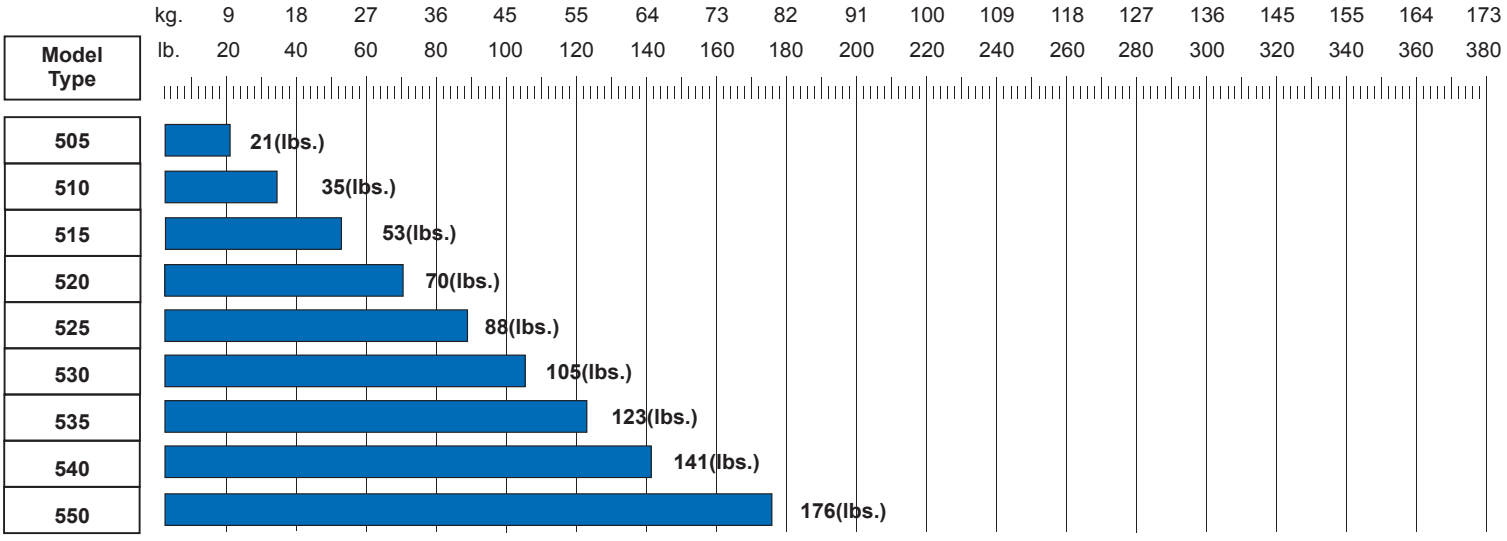
- **Shutters more than 9 feet high: add 10% to the effective load for every additional 3 feet.**
- **Add an additional 10% to the effective load for shutters using end retention.**
- **Double span shutters: add 20% to the effective load to be lifted.**
- **All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity**

Motor Selection Guide
For Type 5 Operators

85mm (3.25 inch) TUBE DIAMETER



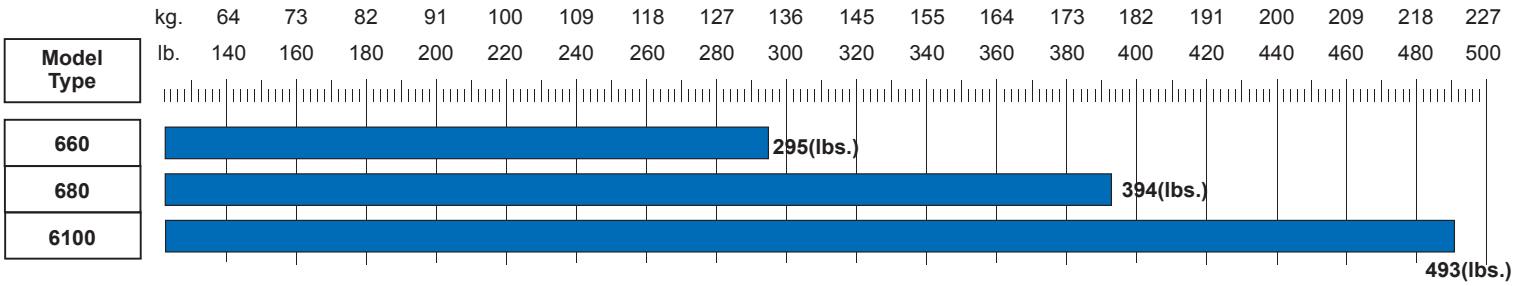
90mm (3.5 inch) TUBE DIAMETER



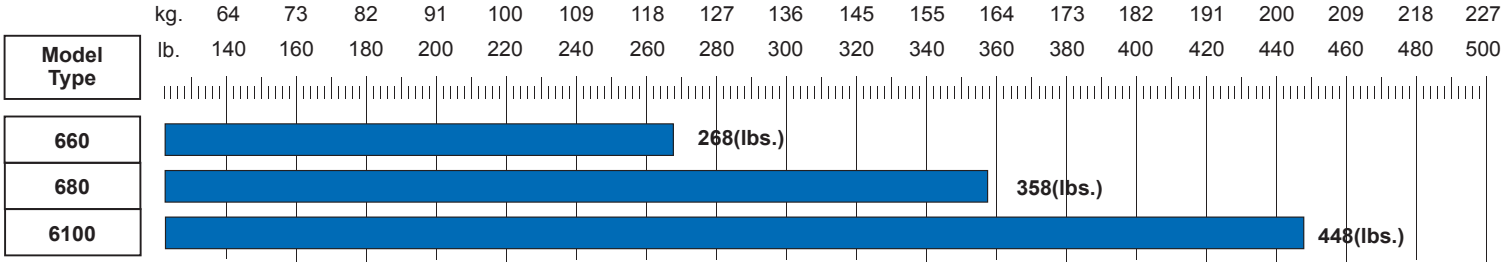
- This chart reflects the recommended 30% security factor that is used for most applications.
- Shutters more than 9 feet high: add 10% to the effective load for every additional 3 feet.
- Add an additional 10% to the effective load for shutters using end retention.
- Double span shutters: add 20% to the effective load to be lifted.
- All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity

Motor Selection Guide
For Type 6 Operators

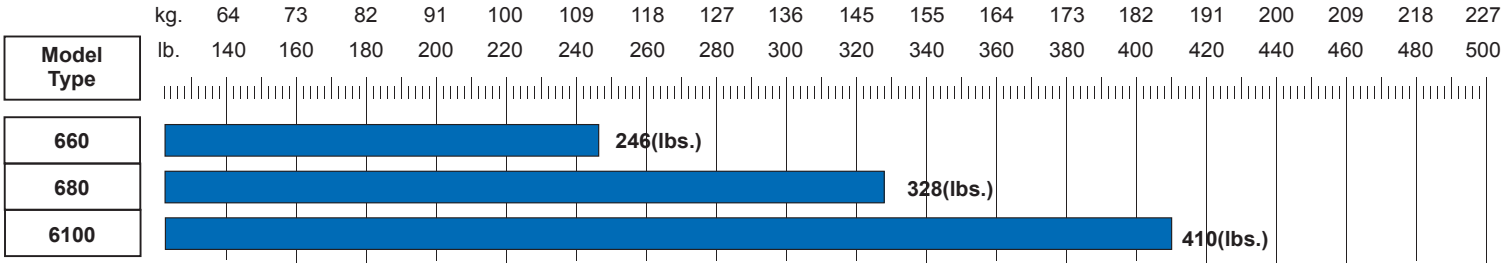
60mm (2.5 inch) TUBE DIAMETER



70mm (2.75 inch) TUBE DIAMETER



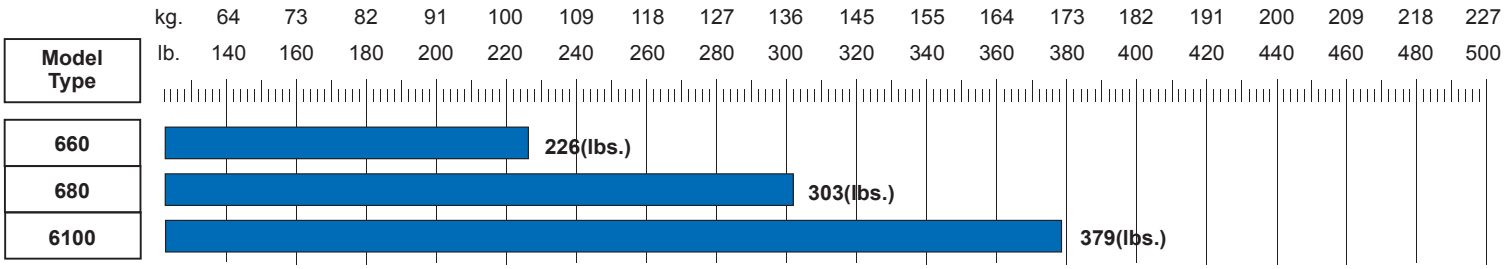
78mm (3.0 inch) TUBE DIAMETER



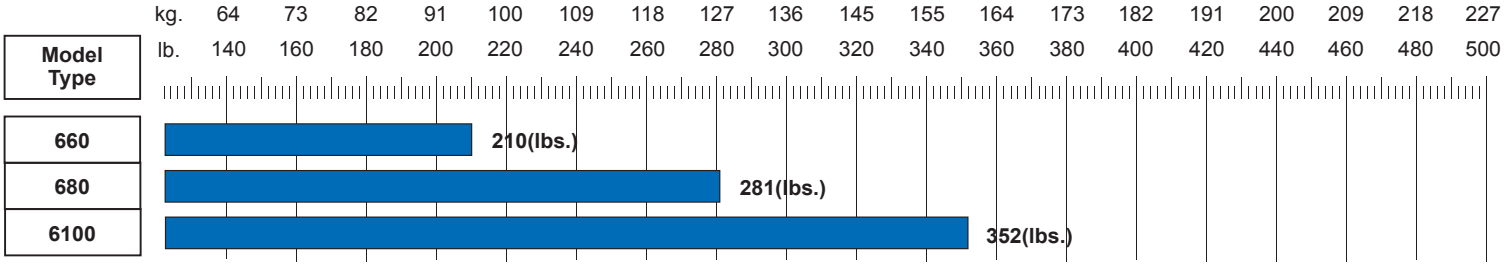
- **This chart reflects the recommended 30% security factor that is used for most applications.**
- **Shutters more than 9 feet high: add 10% to the effective load for every additional 3 feet.**
- **Add an additional 10% to the effective load for shutters using end retention.**
- **Double span shutters: add 20% to the effective load to be lifted.**
- **All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity**

Motor Selection Guide
For Type 6 Operators

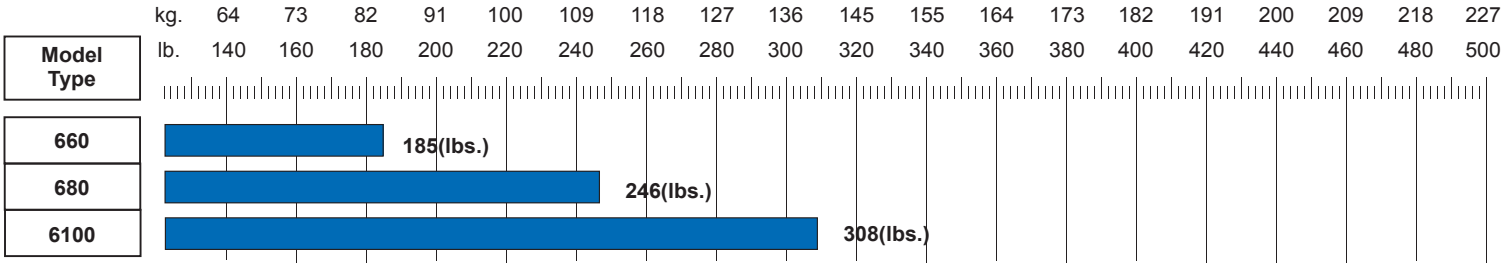
85mm (3.25 inch) TUBE DIAMETER



90mm (3.5 inch) TUBE DIAMETER



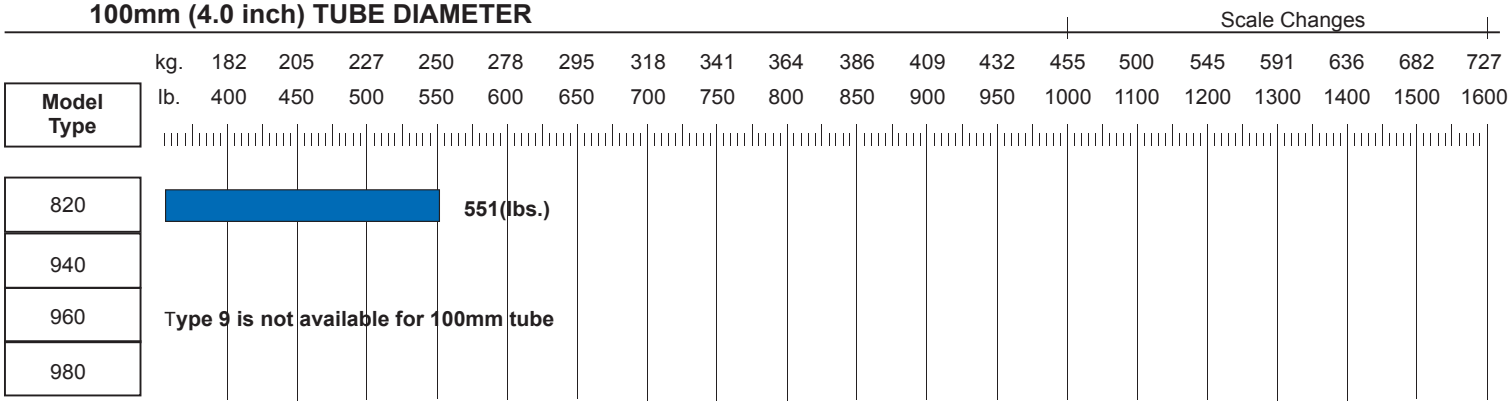
100mm (4.0 inch) TUBE DIAMETER



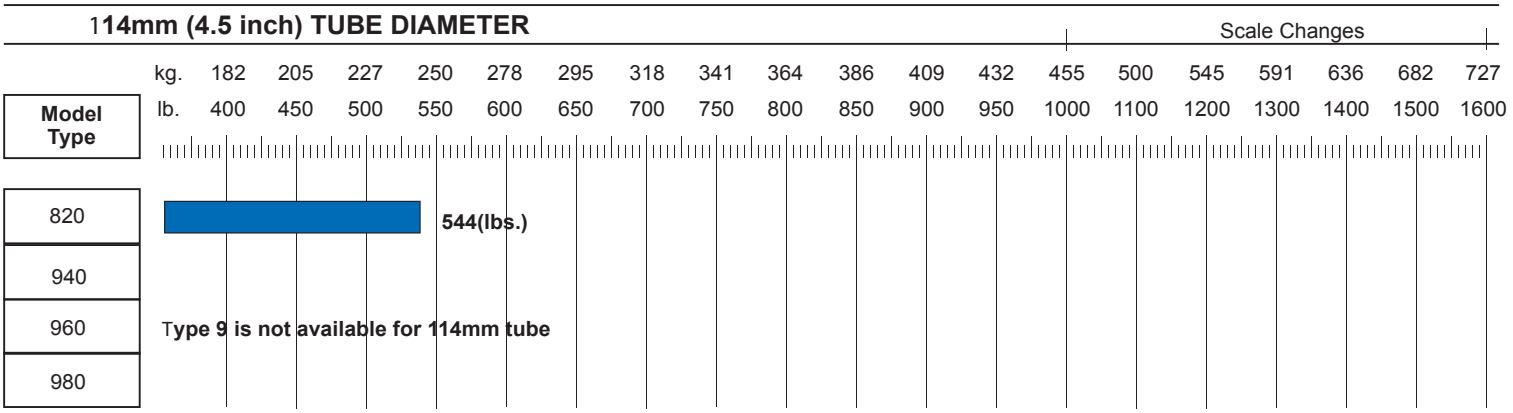
- **This chart reflects the recommended 30% security factor that is used for most applications.**
- **Shutters more than 9 feet high: add 10% to the effective load for every additional 3 feet.**
- **Add an additional 10% to the effective load for shutters using end retention.**
- **Double span shutters: add 20% to the effective load to be lifted.**
- **All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity**

Motor Selection Guide
For Type 8 Operators

100mm (4.0 inch) TUBE DIAMETER



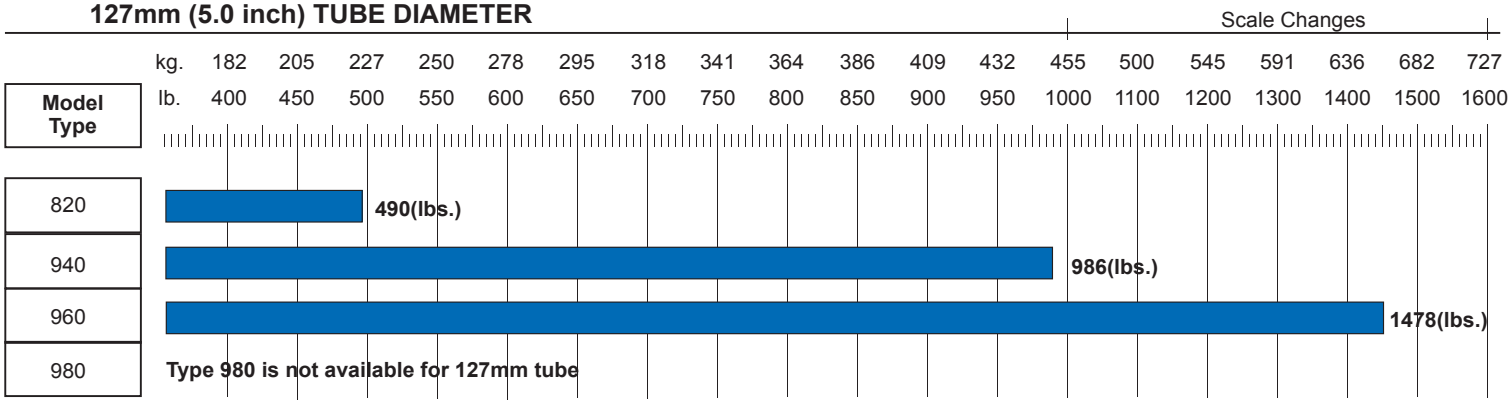
114mm (4.5 inch) TUBE DIAMETER



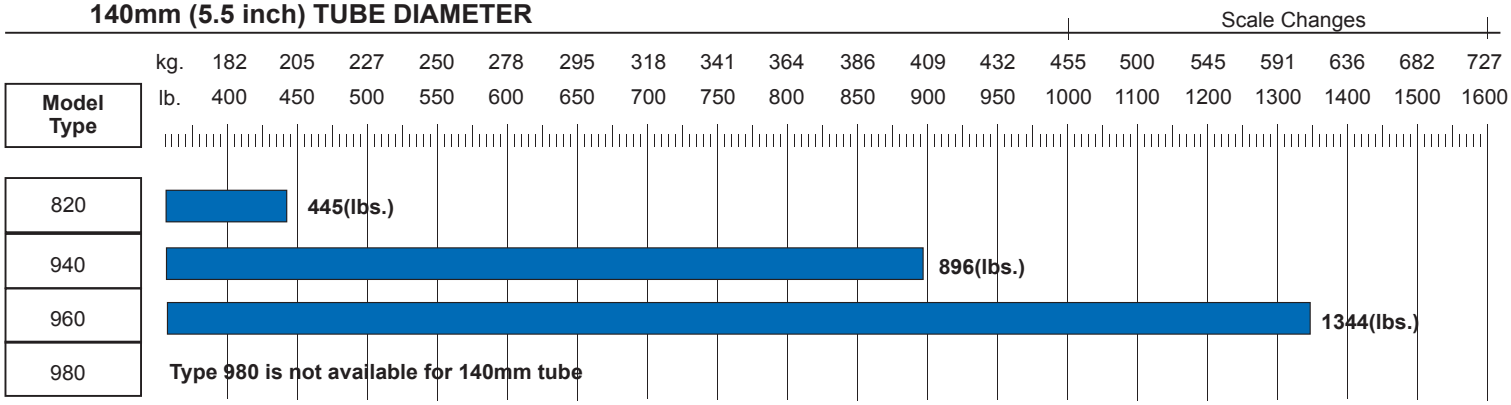
- **This chart reflects the recommended 30% security factor that is used for most applications.**
- **Shutters more than 9 feet high: add 10% to the effective load for every additional 3 feet.**
- **Add an additional 10% to the effective load for shutters using end retention.**
- **Double span shutters: add 20% to the effective load to be lifted.**
- **All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity**

Motor Selection Guide
For Type 8 and Type 9 Operators

127mm (5.0 inch) TUBE DIAMETER



140mm (5.5 inch) TUBE DIAMETER



- **This chart reflects the recommended 30% security factor that is used for most applications.**
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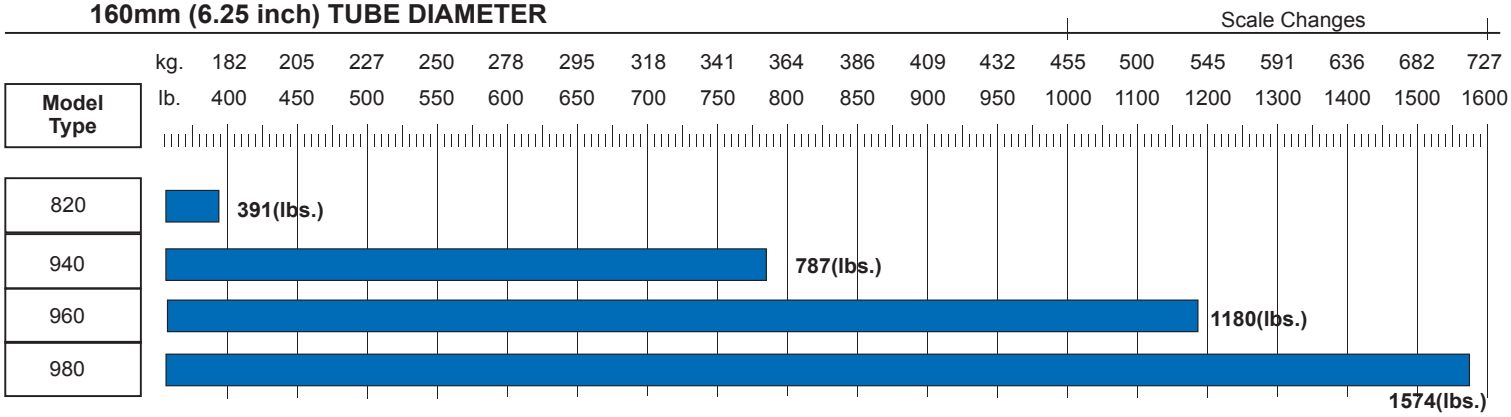
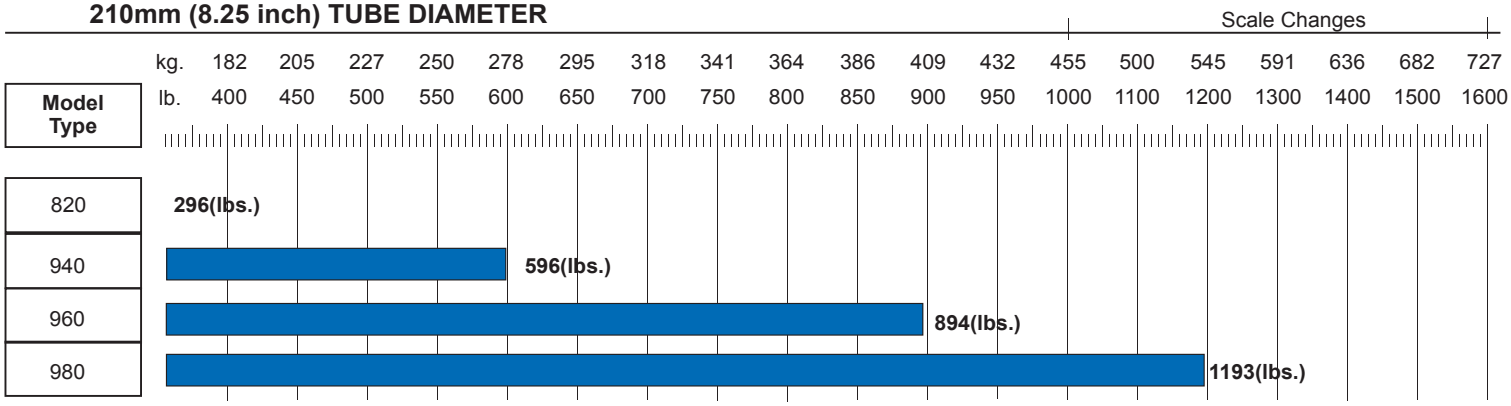
- **Add an additional 10% to the effective load for shutters using end retention.**
- **Double span shutters: add 20% to the effective load to be lifted.**
- **All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity**

Motor Selection Guide
For Type 8 and Type 9 Operators

160mm (6.25 inch) TUBE DIAMETER



210mm (8.25 inch) TUBE DIAMETER



- **This chart reflects the recommended 30% security factor that is used for most applications.**
- **Shutters more than 9 feet high: add 10% to the effective load for every additional 3 feet.**
- **Add an additional 10% to the effective load for shutters using end retention.**
- **Double span shutters: add 20% to the effective load to be lifted.**
- **All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity**

Motor Selection Guide
For Retractable Awning Systems

B Number of Arms **C** Length of Installation	**1 Pair** (2 arms) 20 ft. (6m)	**2 Pair** (4 arms) 33 ft. (10m)	**3 Pair** (6 arms) 50 ft. (15m)	**4 Pair** (8 arms) 66 ft. (20m)	**5 Pair** (10 arms) 82 ft. (25m)	**6 Pair** (12 arms) 100 ft. (30m)
A Projection of Arms	**D** Roller Tube O.D. Sizes					
5 ft. (1.50m)	2.5" (63)	525		535	550	660
	3.0" (78)	535		550	660	680
	3.5" (89)	535	550	660	680	
6.5 ft. (2.00m)	2.5" (63)	525	535	540	660	680 / 6100
	3.0" (78)	535	540	550	660	680
	3.5" (89)	540	550	660	680	
8 ft. (2.40m)	2.5" (63)	535	550	660	6100	
	3.0" (78)	550	660	680		
	3.5" (89)	550	660	680		
9 ft. (2.70m)	2.5" (63)	540	550	660	680	
	3.0" (78)	550	660	680	6100	
	3.5" (89)	550	660	680	6100	
10 ft. (3.00m)	2.5" (63)	540	550	680		
	3.0" (78)	550	680	6100		
	3.5" (89)	660	680	6100		
13.5 ft. (4.00m)	2.5" (63)	550	680	6100		
	3.0" (78)	680	6100			
16.5 ft. (5.00m)	2.5" (63)	550	680			
	3.0" (78)	680	6100			

Above chart is approximate. For more specific information, refer to factory.

This chart can be used to select the most suitable type of motor for your lateral arm awning system.
Important: The lateral arms referred to here are the standard aluminum type with built-in tension springs. When considering arms made of steel and/or using other types of spring mechanisms, please request additional information.

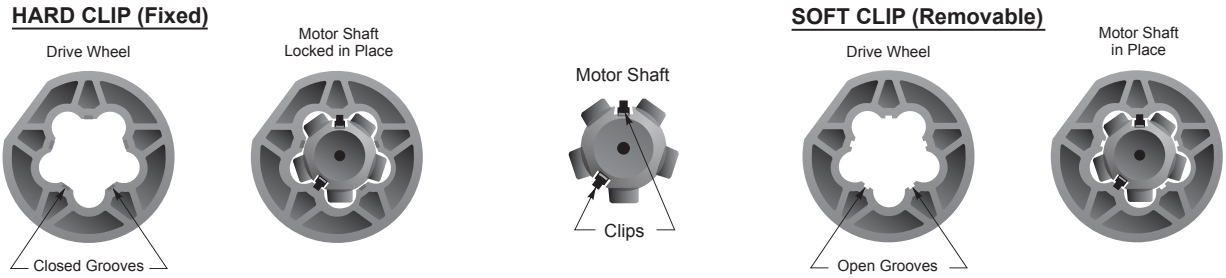
1. Locate the projection of your lateral arm on the above chart at point (A); e.g. 5 ft., 6 ft., 8 ft., etc.
2. Determine which roller tube diameter (D) is being used in your installation.
3. Locate the number of arms (B) and the length of your installation (C).
4. Read the correct motor from the chart at the intersection of your selections.

NOTE:
Because this chart must take into consideration lateral arms being manufactured by many different companies, it is only approximate. The relationship between the number of arms and the length of the awning is only a guide and will vary slightly from manufacturer to manufacturer.

Adaptor
Installation Instructions

Installation Instructions For Snap-On Adaptors

Type 3.5 / Type 5 / Type 6 / Type 5DMI / Type 6DMI



Installation of the drive wheel to the motor shaft:
Push the drive into the motor shaft until you hear a "click". Two clips lock the drive wheel into the motor shaft.

There are two types of drive wheels: Removable or **"Soft Clip"** type, and fixed or "Hard Clip" type.

The "Soft Clip" drives are available only for round tubes in 2", 2.5" and 2.75" diameters. The drive wheel can be removed by physically pulling it off the motor shaft. For the ease of identification all "Soft Clip" drives are brown.

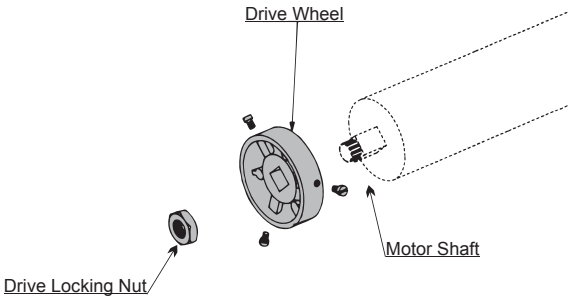
The "Hard Clip" drives can only be removed from the shaft by pressing the two clips inward at the same time. The motor must be out of the tube in order to have access to the clips. These drives are black.

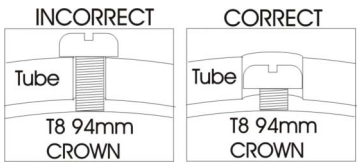
Installation in round tubes:
The drive must be riveted to the tube after the motor is inserted.

Installation in profiled tubes:
The drive doesn't need to be riveted to the tube because it is already in a positive lock position within the profiled tube.

Installation Instructions For Adaptors and Tube Mounting

Type 8 / Type 9 Operators



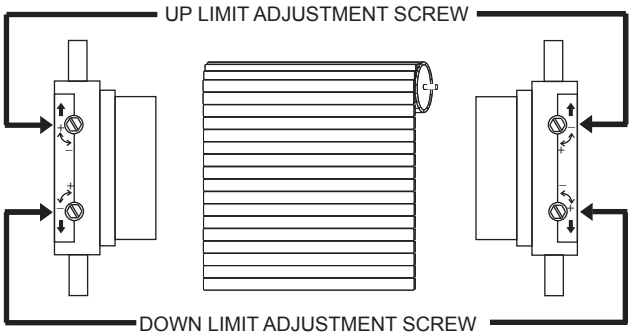


In this case, the screw creates a distortion of the crown that can generate a limit drift.

The screw is recessed and completely clear of the tube. The screw SIMU provides with the operator is the only qualified screw to be used.

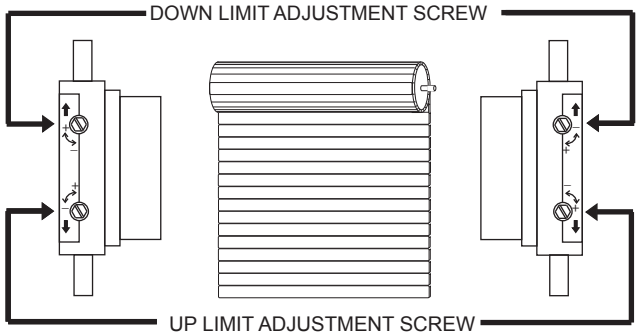
Limit Switch Adjustment
Type 3.5 / Type 5 / Type 6
Type 8 and Type 9 Operators

MATERIAL ROLLS DOWN ON SAME SIDE AS LIMITS



1

MATERIAL ROLLS DOWN ON OPPOSITE SIDE FROM LIMITS



2

1) Identify which limit adjustment screw controls the up limit and which controls the down limit (see above diagrams). It is important to note that the arrows by 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 an 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.

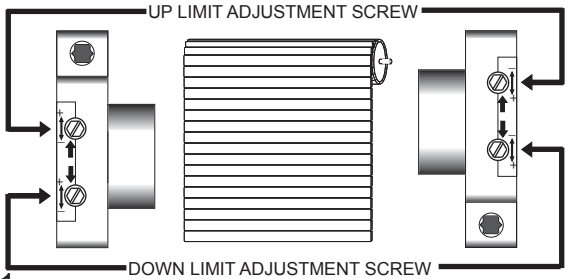
6) If the motor does not stop on its own at least 6 inches before the desired limit position, stop the motor with the control switch. Then turn the limit adjustment screw in the negative (counterclockwise) direction. Confirm that the motor is stopped at the limit and set the limit as per steps 4 and 5. If the motor is not stopped at the limit, continue turning the limit adjustment screw counterclockwise (up to 120 turns may be required)

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.

Limit Switch Adjustment
Type 5 and Type 6 DMI Operators

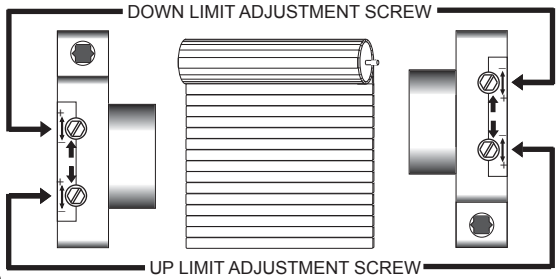
LIMIT ADJUSTMENT SCREWS ON OPPOSITE SIDE FROM MOTOR CABLE

MATERIAL ROLLS DOWN ON SAME SIDE AS LIMITS



1

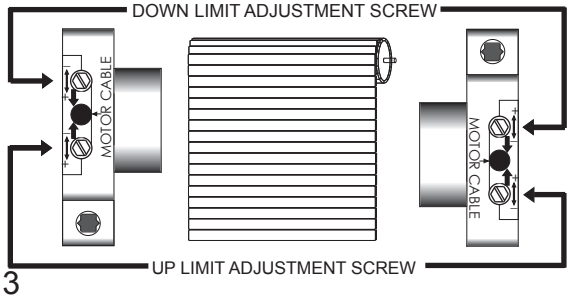
MATERIAL ROLLS DOWN ON OPPOSITE SIDE FROM LIMITS



2

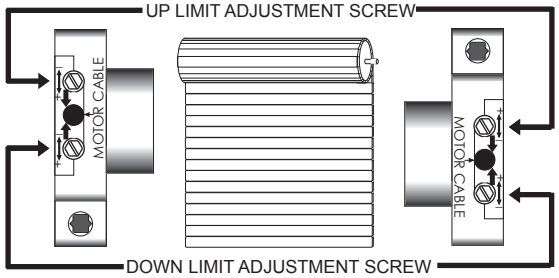
LIMIT ADJUSTMENT SCREWS ON SAME SIDE AS MOTOR CABLE

MATERIAL ROLLS DOWN ON SAME SIDE AS LIMITS



3

MATERIAL ROLLS DOWN ON OPPOSITE SIDE FROM LIMITS



4

1) Identify which limit adjustment screw controls the up limit and which controls the down limit (see above diagrams). It is important to note that the arrows by the limit adjustment screw refer to the tube's rotation. Thus if the material comes off the tube on the back side and you are adjusting the limits from the side that the motor cable is not on (as per diagram 2), the limit adjustment screw with the arrow facing up controls the down limit and vice versa.

2) Turning an adjustment screw positive (+) will increase the maximum travel in the direction that it controls, and turning it negative (-) will decrease the maximum travel. For the adjustment screws on the side without the motor cable, turning clockwise is positive (+) and counterclockwise is negative (-). For the adjustment screws on the side with the motor cable, turning clockwise is negative (-) and counterclockwise is positive (+)

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. 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. Then turn the limit adjustment screw in the negative 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, continue turning the limit adjustment screw. (up to 120 turns may be required)

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.

Wiring Considerations

(Four Wire Operators)

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 - SIMU operators are not universal motors.

1. Do Not Wire SIMU 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.

Correct:
Correct wiring solution is to use a double pole, double throw, center off switch which would isolate both motors.

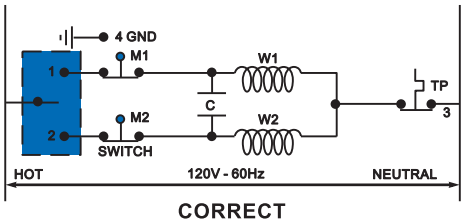
Incorrect:
Motor A stops at its limit in direction 2 before Motor B. Current in Motor B feeds back to Motor A through the capacitor C2 and microswitches M3 and M1. Both operators keep rotating in opposite directions at reduced power.

2. Do Not Control One SIMU Operator from Several Locations Without Using a Proper Controller.

Correct:
Possible problem: When switch (1) is turned on, the motor will begin running in direction 1. As it reaches its limit, the microswitch M1 will open. If at the same moment in time switch (2) is turned on, the motor will operate in the opposite direction. This is why we recommend the use of momentary switches with the SIMU TR115 sequence relay control.

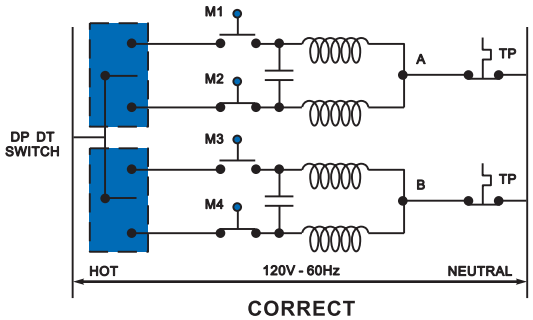
Incorrect:
The microswitch M1 closes, short-circuiting the capacitor which is loaded at its maximum voltage (180V). As a result the microswitch M1 is damaged. Solution: Use relays to build priorities between controls sending opposite signals. Do not use standard a “light” switch as a motor control.

Note: SIMU Control Systems are designed to comply with these two basic criteria and assure reliable operation of motorized systems. Non-compliance to these two basic principles void the SIMU warranty.

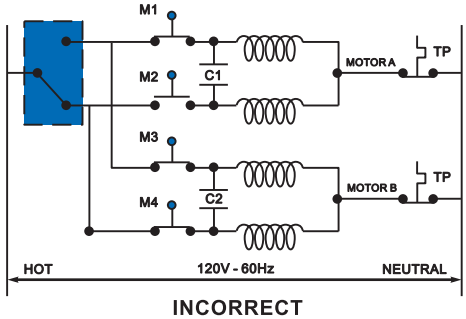


CORRECT

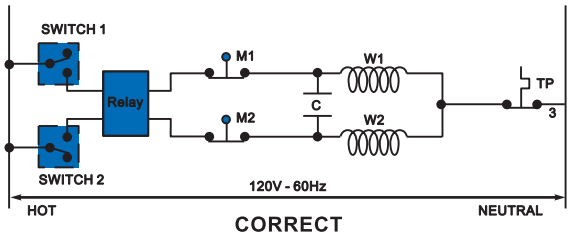
SYMBOLS			
M1	Microswitch	W2	Motor Winding
M2	Microswitch	TP	Thermal Protector
C	Capacitor	GND	Ground
W1	Motor Wiring		



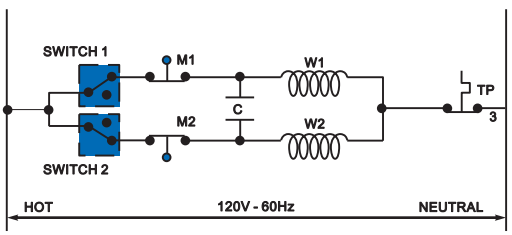
CORRECT



INCORRECT



CORRECT



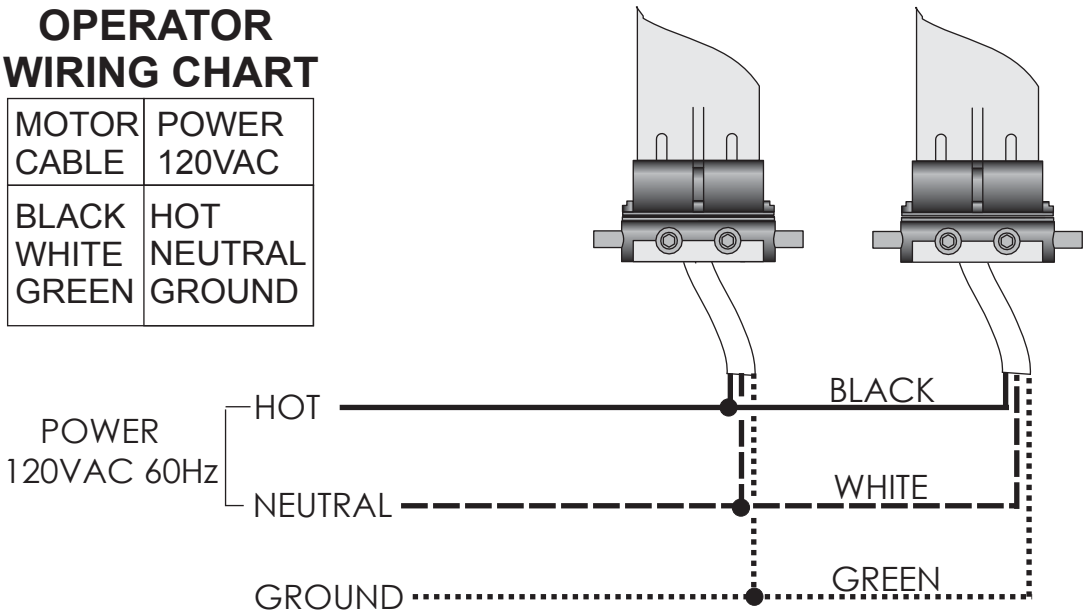
INCORRECT

Wiring Considerations

(Three Wire Operators / Hz Operators)

OPERATOR WIRING CHART

MOTOR CABLE	POWER 120VAC
BLACK	HOT
WHITE	NEUTRAL
GREEN	GROUND



1) FCC

-This device complies with part 15 of the FCC Rules. Operating is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

-Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2) Hz Operator Wiring

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

-The Hz 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 Hz operators.** This can be in the form of an inline off/on switch, a disconnect plug, or access to the operator cable for use of a 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.

3) Installation

-The Hz motor uses standard T5 (not DMI) accessories.

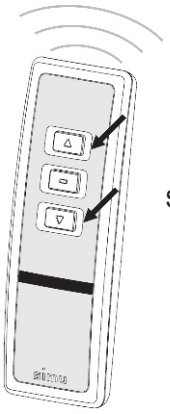
-Use only SIMU accessories (brackets, adaptors, clips....)

-Mount Hz motor heads **at least** 18 inches from each other to prevent RF interference.

-Always install the power cable with a drip loop to prevent water penetration

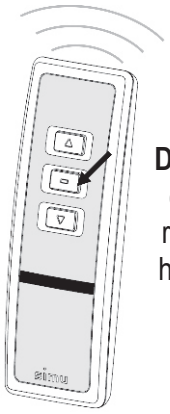
-SIMU motors conform to IP44 requirements and as such must be protected against direct weather elements such as rain, sleet, ...etc.

Hz-02 Plus Operators (Electronic Limit) Basic Programming

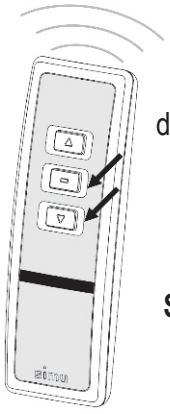


STEP 1
Wake the motor by pressing the **UP** and **DOWN** buttons simultaneously until the motor jogs

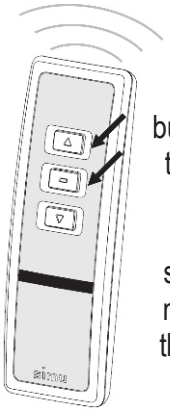
Note: After every command the motor will jog to confirm



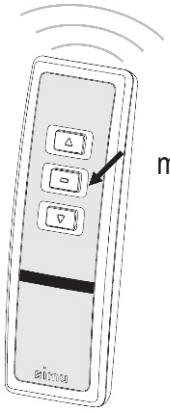
STEP 2
Check the direction of rotation with the **UP** or **DOWN** button. If needed, change the direction of rotation by pressing and holding the **STOP** button until the motor jogs.



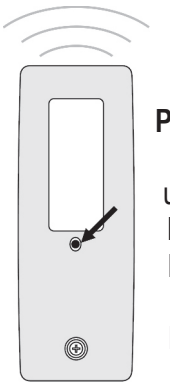
STEP 3
Run the motor to the desired upper limit. Press the **STOP** and **DOWN** buttons simultaneously until the motor starts to run downward. Use the **STOP** button to stop the motor near the desired lower limit.



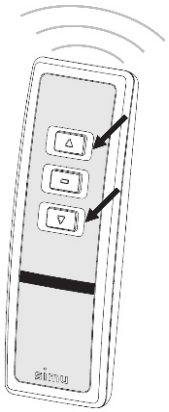
STEP 4
Use the **UP** or **DOWN** button to run the motor to the exact desired lower limit. Press the **STOP** and **UP** buttons simultaneously until the motor starts to run. Use the **STOP** button to stop the motor.



STEP 5
Press and hold the **STOP** button until the motor jogs to confirm the limit settings.
Note: Until this step, the up or down limit can be moved by repeating step 3 or step 4



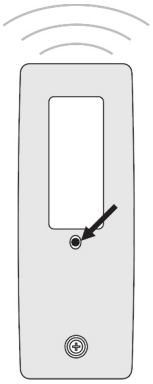
STEP 6
Press and hold the **PROGRAM** button on the back of the transmitter until the motor jogs. The buttons no long have to be held for the motor to run. Double check the limits are in the desired position



IMPORTANT: The programming button in step 6 will not work until the limits have been confirmed as per step 5

ADJUSTING THE LIMITS AFTER THE MOTOR HAS BEEN PROGRAMMED.
To change the upper limit run the motor to its upper limit and let it stop. Press the **UP** and **DOWN** buttons simultaneously until the motor jogs. Run the motor to the new desired upper limit. Press and hold the **STOP** button until the motor jogs. Check the new limit.

T**o change the lower limit** run the motor to its lower limit and let it stop. Press the **UP** and **DOWN** buttons simultaneously until the motor jogs. Run the motor to the new desired lower limit. Press and hold the **STOP** button until the motor jogs. Check the new limit.



T**o add or delete a remote/channel** press the **PROGRAMMING** button on the back of an already programmed remote/channel until the motor jogs. Next press the **PROGRAMMING** button on the back of the remote/channel you wish to add or delete until the motor jogs.

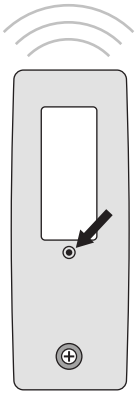
T**o reset the motor to factory mode** start with the motor connected to power. Cut power for 8 seconds, reconnect power for 8 seconds, cut power for 8 seconds and then reconnect power. The motor should start to run (if this does not happen repeat the 8 second power cuts until the motor does run). Allow the motor to stop on its own (do not press stop, up or down or you will have to repeat the double power cut) Once the motor stops on its own, press and **hold** the **PROGRAMMING** button for over 8 seconds. The motor should jog twice.

Hz-02 (Progressive Limit)
Basic Programming

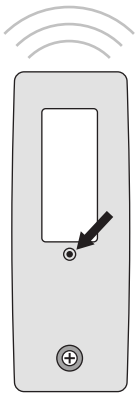
STEP 1
Wake the motor by pressing the **UP** and **DOWN** buttons simultaneously until the motor jogs.

Note: After every command the motor will jog to confirm

STEP 2
Check the direction of rotation with the **UP** or **DOWN** button. If needed, change the direction of rotation by pressing and holding the STOP button until the motor jogs.

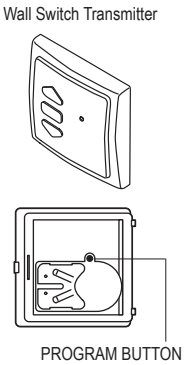


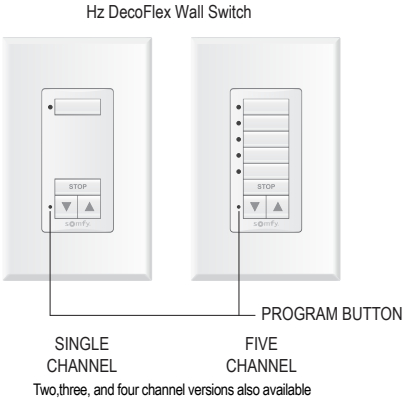
STEP 3
Press and hold the **PROGRAM** button on the back of the transmitter until the motor jogs. The buttons no long have to be held for the motor to run. Double check the limits are in the desired position.

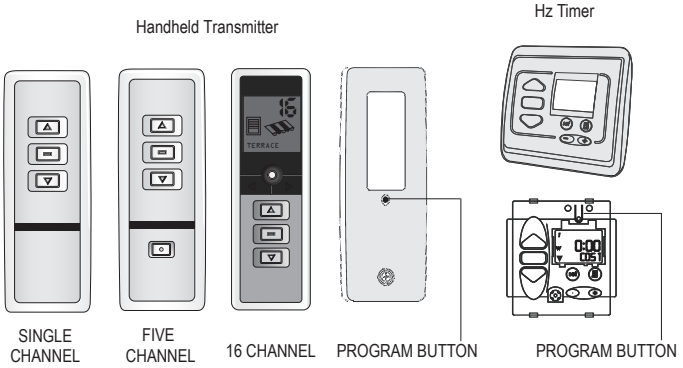


T**o add or delete a remote/channel** press the **PROGRAMMING** button on the back of an already programmed remote until the motor jogs. Next press the **PROGRAMMING** button on the back of the remote you wish to add or delete until the motor jogs.

T**o reset the motor to factory** mode start with the motor connected to power. Cut power for 8 seconds, reconnect power for 8 seconds, cut power for 8 seconds and then reconnect power. The motor should start to run (if this does not happen repeat the 8 second power cuts until the motor does run). Allow the motor to stop on its own (do not press stop, up or down or you will have to repeat the double power cut) Once the motor stops on its own, press and **hold** the **PROGRAMMING** button for over 8 seconds. The motor may jog twice.







AutoSun™ Motor System

AutoSun™ DC Hz motor

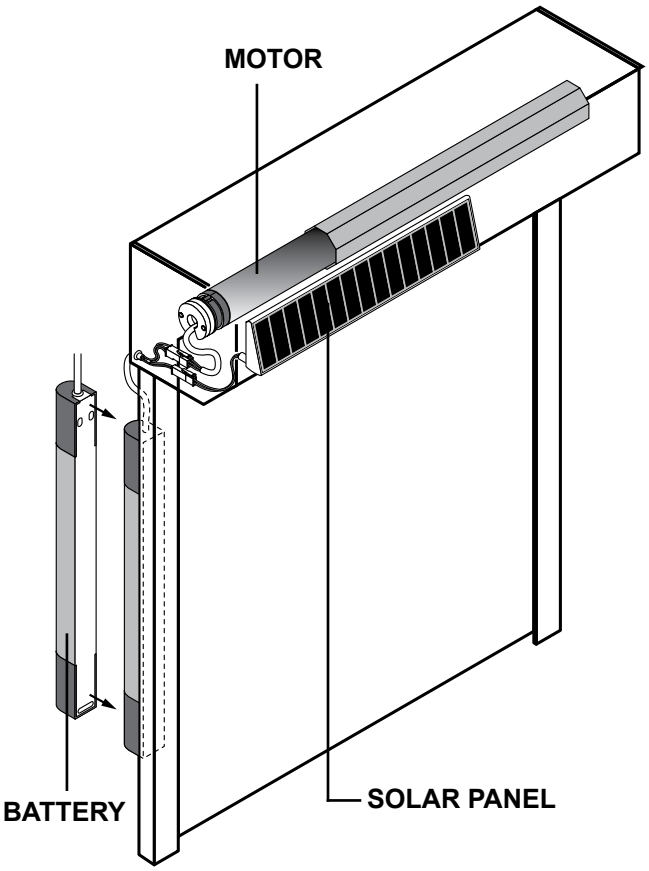
- AutoSun™ electric motor, dia. 40mm, 12V
- Compatible with existing Hz and RTS accessories

AutoSun™ battery

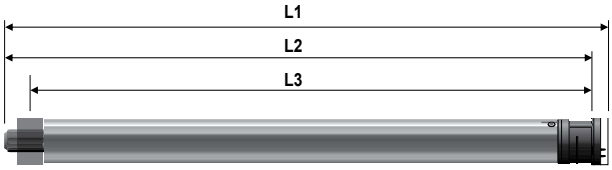
- NiMH technology
- Lead-free
- Operating Temperature is -4° F to +158° F
- Separate programming button

AutoSun™ solar panel

- Amorphous Silicon technology
- Works effectively even in overcast conditions



SOLAR PANEL MOUNTING CLIPS



Dimensions	3/23	6/18	10/12
L1 (mm)	18.5” (470)	18.5” (470)	18.5” (470)
L2 (mm)	17.83” (453)	17.83” (453)	17.83” (453)
L3 (mm)	17.05” (433)	17.05” (433)	17.05” (433)

Technical Characteristics

Power Supply	12V
Class	IP 44
Connection	3 wires: 0.75mm2
Operating Temperature	-4° F to +158° F (-20° C to +70° C)

Performance

Rated Torque (Nm)	3	6	10
Power (W)	17	24	32
Current (A)	1.4	2	2.6
Weight (kg)	1.7 lbs. (0.77)	1.76 lbs. (0.80)	1.76 lbs. (0.80)

Motors

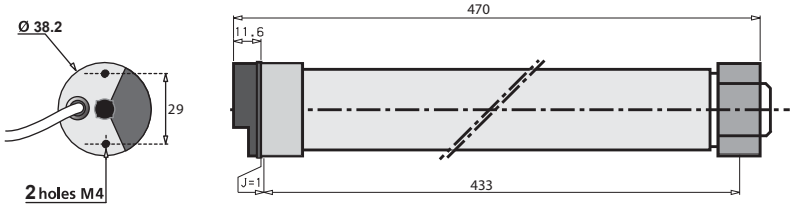
CAT.NO.	DESCRIPTION
2006996	T3.5 Autosun 3Nm 23rpm 12V
2006998	T3.5 Autosun 6Nm 18rpm 12V
2007000	T3.5 Autosun 10Nm 12rpm 12V

Accessories

CAT.NO.	DESCRIPTION
9014734	BATTERY
9014736	SOLAR PANEL
2006055	BATTERY CHARGER
9015292	SOLAR PANEL MOUNTING CLIPS

Operators
Type 3.5 DCE Hz
12 Volt

-Fits in 1.5" or 1.75" tube
-Electronic limit setting
-8 feet of motor cable
-IP 44 Rated



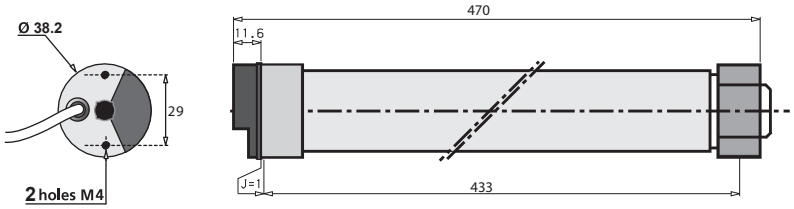
Approximate shipping weight = 3 lb.

12 Volt Operators

Reference	Torque (in. lb./Nm)	Speed (rpm)	Watts	Amps
2007711 2007712	3 5	18 12	24 32	2 2.6

Operators
Type 3.5
12/24 DC and 120V-60Hz AC

-Fits in 1.5" or 1.75" tube
-Progressive limit setting
-8 feet of motor cable
-UL Recognized (120V)
-CSA Approved (120V)
-IP 44 Rated



Approximate shipping weight = 3 lb.

12 Volt Operators

Reference	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (max. turns)
2006973	26	3	23	17	1.4	40
2006975	52	6	18	26	2.2	40
2006977	88	10	12	30	2.5	40

24 Volt Operators

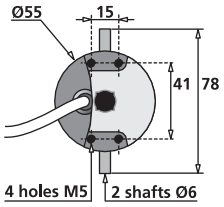
Reference	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (max. turns)
2006974	26	3	28	22	0.9	40
2006976	52	6	18	25	1.05	40
2006978	88	10	12	29	1.2	40

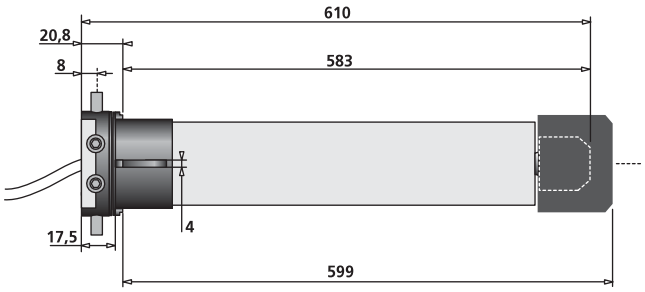
120 Volt Operators c UL us

Reference	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (max. turns)
2004351	35	4	30	100	1.0	40
2004371	52	6	14	105	1.0	40
2004372	79	9	14	135	1.2	40

Operators
Type 5
12 and 24 Volt DC

-Diameter 47mm (2.0 in.)
-Progressive limit setting
-8 feet of motor cable
-Long running time
-IP 44 Rated





Approximate shipping weight = 8 lb.

12 Volt Operators

Reference	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (max. turns)
2004492	130	15	15	60	5.1	30
2004493	176	20	10	57	4.6	30
2004494	305	35	6	54	4.5	30

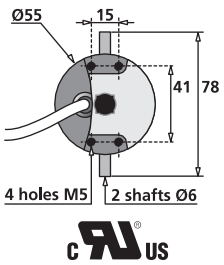
24 Volt Operators

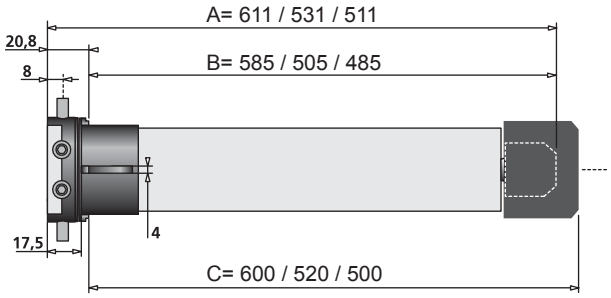
Reference	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (max. turns)
2004495	130	15	15	60	2.4	30
2004496	176	20	10	57	2.4	30
2004497	305	35	6	54	2.2	30

Ask us for our complete line of switches, remote controls, battery back-up systems and automatic control devices.

Operators
Type 5
(120V - 60Hz) AC

-Diameter 47mm (2.0 in.)
-Progressive limit setting
-8 feet of motor cable
-UL Recognized
-CSA Approved
-IP 44 Rated





Operators

Approximate shipping weight = 8 lb.

Dimension detail in millimeters

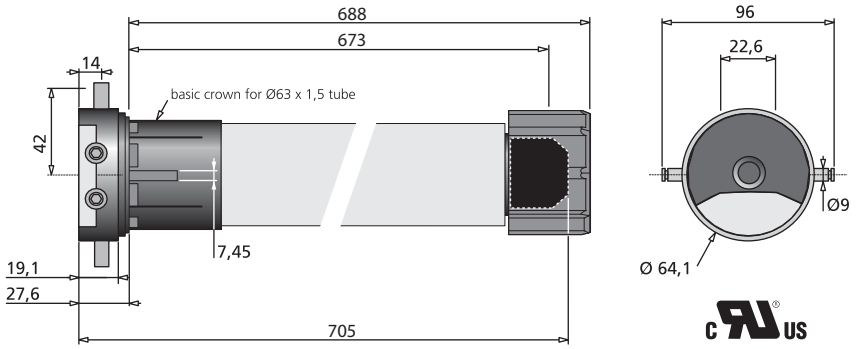
Reference	Dimensions A	B	C	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (max. turns)	Run Time (minutes)
2000644	531	505	520	44	5	35	110	1.0	28	5
2000645	611	585	600	88	10	35	150	1.3	28	5
2000649	511	485	500	88	10	12	80	0.7	28	5
2000646	531	505	520	132	15	18	130	1.1	28	5
2000650	531	505	520	176	20	12	130	1.1	28	5
2000647	611	585	600	220	25	18	180	1.6	28	5
2000651	611	585	600	264	30	12	170	1.5	28	5
2000648	611	585	600	308	35	18	250	2.1	28	5
2000652	611	585	600	352	40	12	210	1.8	28	5
2000653	611	585	600	440	50	12	210	2.1	28	5

- 220 volt operators are available as a special order.

- All Simu 120V-60Hz AC operators come standard with a built in electric brake and limit switch.

Operators
Type 6
(120V - 60Hz) AC

-Diameter 60mm (2.5 in.)
-Progressive limit setting
-8 feet of motor cable
-UL Recognized
-CSA Approved
-IP 44 Rated



Approximate shipping weight = 12 lb.

Operators

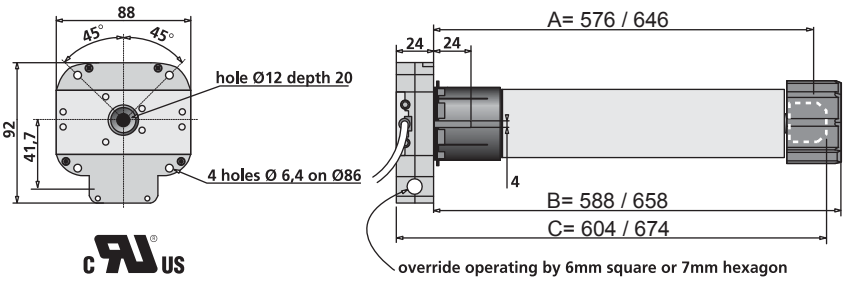
Reference	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (max. turns)	Run Time (minutes)
2004339	220	25	54	430	3.8	22	4
2000985	530	60	14	285	2.5	22	4
2000986	704	80	14	390	3.4	22	4
2000987	880	100	14	430	3.8	22	4

- 220 volt operators are available as a special order.

- All Simu 120V-60Hz AC operators come standard with a built in electric brake and limit switch.

Operators
Type 5DMI Override
(120V - 60Hz) AC

-Diameter 47mm (2.0 in.)
-Progressive limit setting
-8 feet of motor cable
-UL Recognized
-CSA Approved
-IP 44 Rated



Operators

Approximate shipping weight = 9 lb.

Dimension detail in millimeters

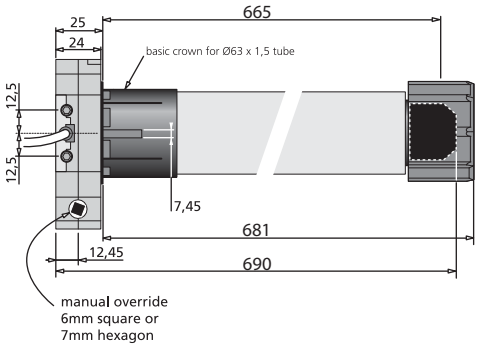
Reference	Dimensions A	B	C	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (max. turns)	Run Time (minutes)
2000772	576	588	604	88	10	12	80	0.7	28	5
2000769	576	588	604	132	15	18	130	1.1	28	5
2000773	576	588	604	176	20	12	130	1.1	28	5
2000770	576	588	604	220	25	18	180	1.6	28	5
2000774	576	588	604	264	30	12	170	1.5	28	5
2000771	646	658	674	308	35	18	250	2.1	28	5
2000775	646	658	674	352	40	12	210	1.8	28	5
2000776	646	658	674	440	50	12	210	2.1	28	5

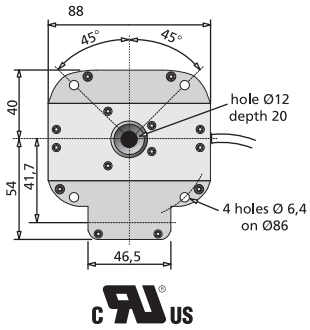
220 volt operators are available as a special order.

All Simu 120V-60Hz AC operators come standard with a built in electric brake and limit switch.

Operators
Type 6DMI Override
(120V - 60Hz) AC

-Diameter 60mm (2.5 in.)
-Progressive limit setting
-8 feet of motor cable
-UL Recognized
-CSA Approved
-IP 44 Rated





Operators

Approximate shipping weight = 14 lb.

Reference	Torque		Speed	Watts	Amps	Limit Switch (max. turns)	Run Time (minutes)
2001040	530	60	14	285	2.5	28	5
2001042	704	80	14	390	3.4	28	5
2001044	880	100	14	430	3.8	28	5

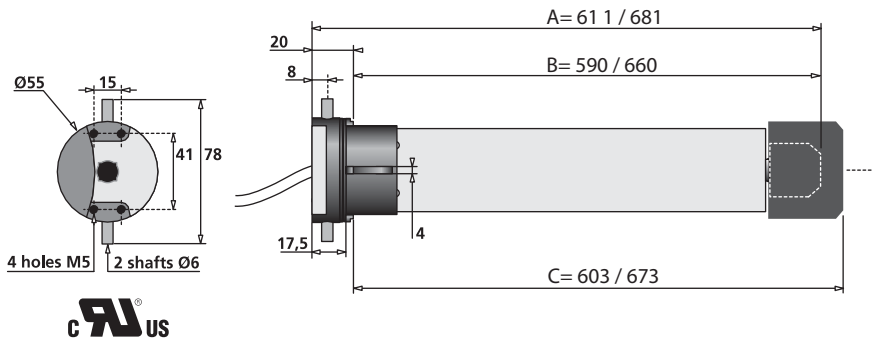
220 volt operators are available as a special order.

All Simu 120V-60Hz AC operators come standard with a built in electric brake and limit switch.

Operators
Type 5 Hz-02 Plus
(120V - 60Hz) AC

simu-Hz Radio System

-Diameter 47mm (2.0 in.)
-Integrated radio
-Electronic limit setting
-8 feet of motor cable
-UL Recognized
-CSA Approved
-FCC Approved
-IP 44 Rated



Operators

Approximate shipping weight = 9 lb.

Reference	Dimensions A	B	C	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (rotation time)	Run Time (minutes)
2005131	607	586	599	44	5	35	110	1.0	3 minutes	5
2005132	607	586	599	88	10	35	150	1.3	3 minutes	5
2006352	607	586	599	88	10	12	80	0.7	3 minutes	5
2005133	607	586	599	132	15	18	130	1.1	3 minutes	5
2006353	607	686	599	176	20	12	130	1.1	3 minutes	5
2005134	681	660	673	220	25	18	180	1.6	3 minutes	5
2005136	681	660	673	264	30	12	170	1.5	3 minutes	5
2005135	681	660	673	308	40	18	250	2.1	3 minutes	5
2005137	681	660	673	440	50	12	250	2.1	3 minutes	5

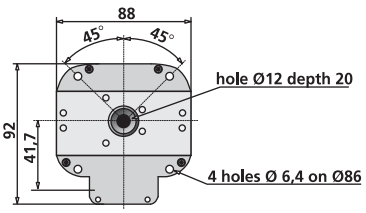
- 220 volt operators are available as a special order.

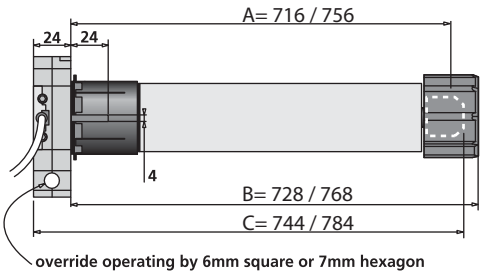
- All Simu 120V-60Hz AC operators come standard with a built in electric brake and limit switch.

Operators
Type 5DMI Hz Override
(120V - 60Hz) AC

simu-Hz Radio System

-Diameter 47mm (2.0 in.)
-Integrated Radio
-Progressive limit setting
-18 feet of motor cable
-UL Recognized
-CSA Approved
-FCC Approved
-IP 44 Rated





Operators

Approximate shipping weight = 10 lb.

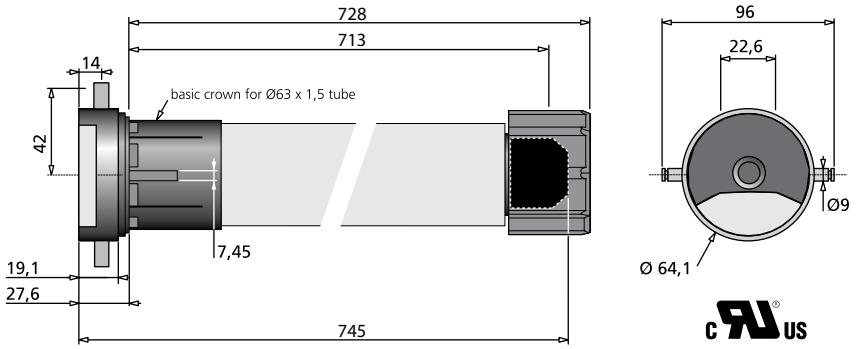
Reference	Dimensions A	B	C	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (max. turns)	Run Time (minutes)
2004240	716	728	744	132	15	18	130	1.3	28	5
2004244	756	768	784	220	25	18	180	1.6	28	5
2004242	756	768	784	264	30	12	170	1.5	28	5
2004241	756	768	784	308	35	18	250	2.1	28	5
2004243	756	768	784	440	50	12	250	2.1	28	5

220 volt operators are available as a special order.

All Simu 120V-60Hz AC operators come standard with a built in electric brake and limit switch.

Operators
Type 6 Hz-02 Plus
(120V - 60Hz) AC

-Diameter 60mm (2.5 in.)
-Integrated radio
-Electronic limit setting
-8 feet of motor cable
-UL Recognized
-CSA Approved
-FCC Approved
-IP 44 Rated



Approximate shipping weight = 12 lb.

Operators

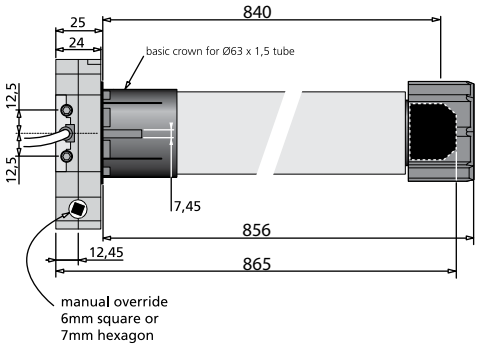
Reference	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (rotation time)	Run Time (minutes)
2006060	530	60	14	285	2.5	3 minutes	4
2006061	704	80	14	390	3.4	3 minutes	4
2006062	880	100	14	430	3.8	3 minutes	4

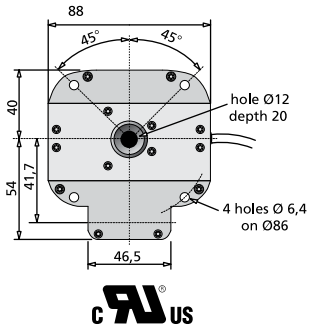
- 220 volt operators are available as a special order.

- All Simu 120V-60Hz AC operators come standard with a built in electric brake and limit switch.

Operators
Type 6DMI Hz Override
(120V - 60Hz) AC

-Diameter 60mm (2.5 in.)
-Integrated Radio
-Progressive limit setting
-8 feet of motor cable
-UL Recognized
-CSA Approved
-FCC Approved
-IP 44 Rated





Operators

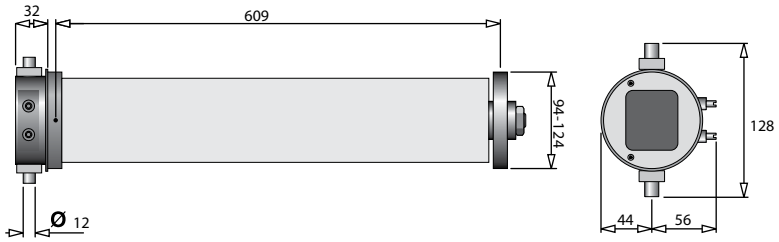
Reference	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (max. turns)	Run Time (minutes)
2006056	530	60	14	285	2.5	28	5
2006057	704	80	14	390	3.4	28	5
2006058	880	100	14	430	3.8	28	5

- 220 volt operators are available as a special order.

- All Simu 120V-60Hz AC operators come standard with a built in electric brake and limit switch.

Operators
Type 8
(120V - 60Hz) AC

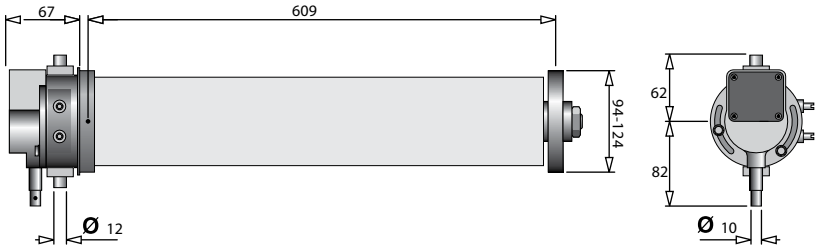
-Diameter 94mm (3.7 in.)
-Progressive limit setting
-2 feet of motor cable
-IP 44 Rated



Standard Operators

Approximate shipping weight = 50 lb.

New Reference	Diameter	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (max. turns)	Run Time (minutes)
2006336	100-106	1750	200	10	600	5.1	13	4
2004248	94	1750	200	10	600	5.1	13	4



Override Operators

Approximate shipping weight = 55 lb.

New Reference	Diameter	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (max. turns)	Run Time (minutes)
2006337	100-106	1750	200	10	600	5.1	13	4
2004249	94	1750	200	10	600	5.1	13	4

- 220V-50Hz operators are available as a special order.

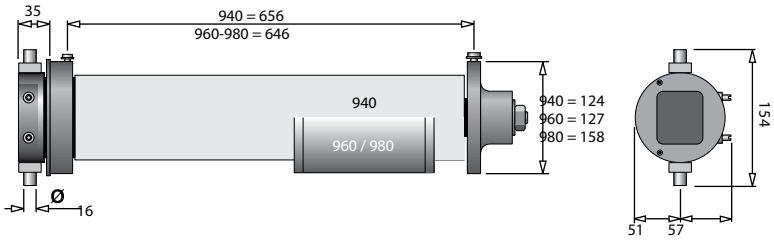
- All Simu 120V-60Hz AC operators come standard with a built in electric brake and limit switch.

- Reference **2006336** and **2006337** represents operators with adjustable adaptors. Adaptors will adjust between 100mm - 106mm. Drive wheel is included and is attached to operator.

- Reference **2004248** and **2004249** do not include adaptor drive wheel. See page 37 for available sizes.

Operators
Type 9
(240V - 60Hz) 3 Phase AC

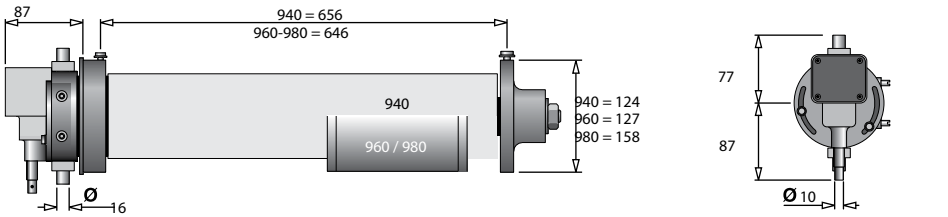
-Diameter 124mm (5 in.)
-Progressive limit setting
-3 feet of motor cable
-IP 44 Rated



Standard Operators

Approximate shipping weight = 60 lb.

Reference	Diameter	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (max. turns)	Run Time (minutes)
2006276	124	3520	400	8	750	2.6	13	10
2006204	127	5280	600	9	1100	5.2	15	10



Override Operators

Approximate shipping weight = 65 lb.

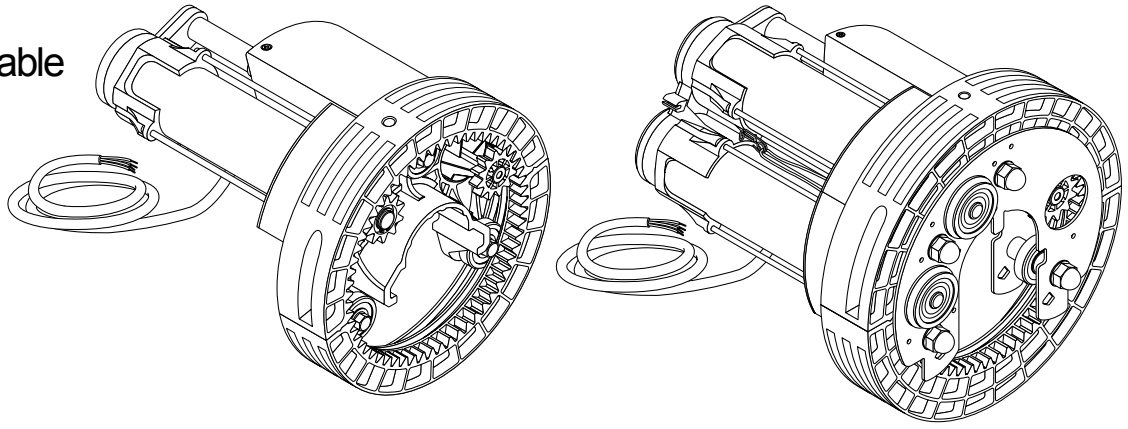
Reference	Diameter	Torque (in. lb./Nm)		Speed (rpm)	Watts	Amps	Limit Switch (max. turns)	Run Time (minutes)
2006277	124	3520	400	8	750	2.6	13	10
2006218	127	5280	600	9	1100	5.2	15	10
2006223	158	7040	800	9	1270	5.2	15	10

- Operators must run at 240V-60Hz 3 phase, do not use with 208V-60Hz 3 phase

- All Simu 240V-60Hz 3 Phase AC operators come standard with a built in electric brake and limit switch.

Operators
Type Centris
(120V - 60Hz) AC

-Fast set limits
-12 feet of motor cable
-5 cycles per day
-UL Recognized
-CSA Approved
-Brake release



Operators

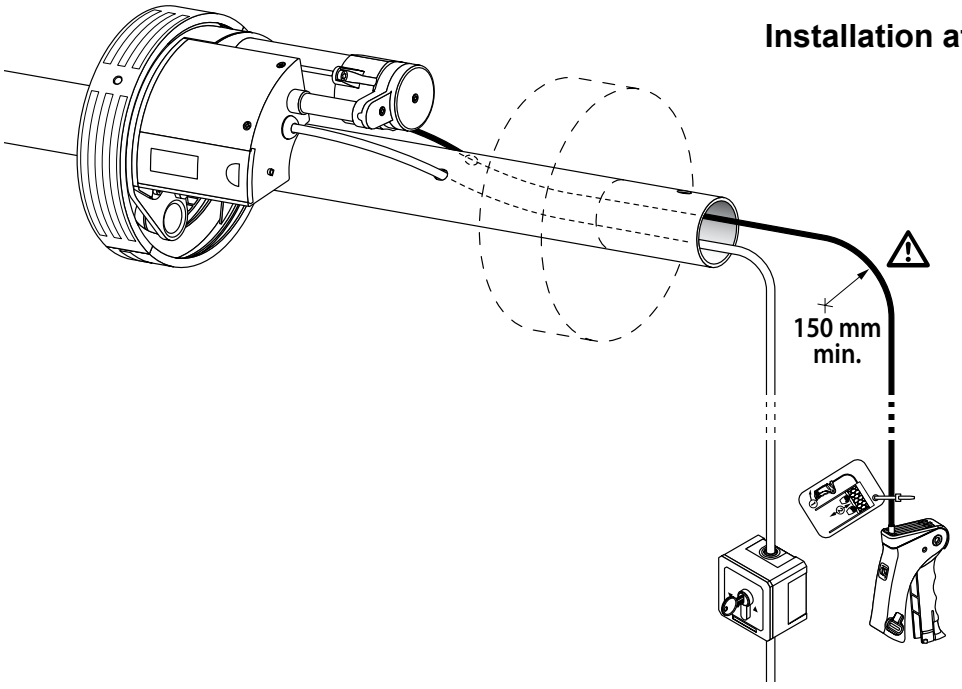
Approximate shipping weight = 25 lb.

Reference	Mounting Diameter (mm)	Crown size (mm)	Speed (rpm)	Torque (Nm)	Load Max. Balanced	Watts	Amps	Limit Switch (Max. Turns)	Run Time Minutes
2007119	**60 only**	**200**	**12**	**100**	**485**	**396**	**3.3**	**12**	**4**
2007123	**60 only**	**220**	**12**	**100**	**440**	**396**	**3.3**	**12**	**4**
2007130	**60 or 76**	**220**	**12**	**200**	**770**	**772**	**6.6**	**12**	**4**

* Reference 2007130 uses a steel frame

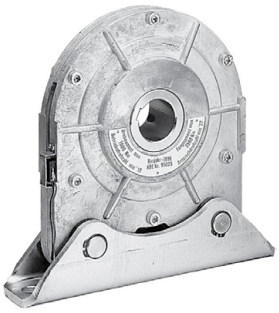
-Central operators come standard with 2-3/8“ fixed shaft. Adaptors are available for smaller diameters.
-Maximum counter balanced weight is 450 lbs on reference number 2001098 / 2004950 and 400 lbs on reference number 2001099 / 2004951.

Installation at a Glance



Special Door Accessories
Safety Brakes

-Motor cut off switch
-Unique shock absorbing system
-Accommodates most shaft sizes
-Resettable after use



Safety Brake

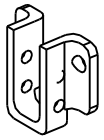
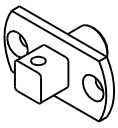
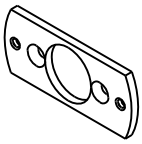
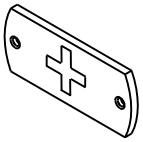
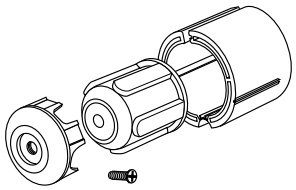
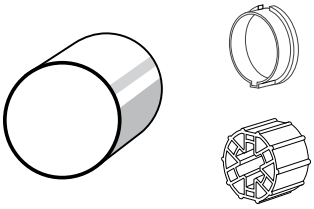
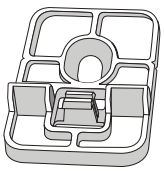
Reference	Nominal Torque (in. lb.)	Working Speed (rpm)	Locking Speed (rpm)	Locking Torque (in. lb.)	Screw Tightening Torque (in. lb.)	Shaft Size	Shipping Weight (lb.)
2005627	3,576	14	24	17,416	44	1.25	15
2005628	6,266	12	22	29,199	53	1.50	22
2005629	8,851	12	22	31,509	71	1.50	28
2005624	13,276	12	22	N/A	N/A	2.00	43
2005625	26,552	8	16	N/A	N/A	2.75	99

Application Table: **Use the table below to choose the proper safety brake for the door application.**

Reference		2005627			2005628			2005629			2005624	2005625
Curtain Width (feet)		9	16	22	9	16	22	9	16	22		
Tube OD (inch)	Height											
4.5	9	1087	517									
	16	937	517									
	22	827	517									
6.625	9	908	900	851								
	16	822	814	803								
	22	745	734	728								
7.625	9	794	778	765	1122	1113	1000	1824	1799	1784		
	16	741	725	712	1085	1047	1036	1673	1660	1645		
	22	681	668	655	979	970	959	1526	1515	1501		
8.625	9	687	667	647	983	968	954	1590	1568	1545		
	16	658	638	618	955	939	924	1512	1490	1471	2646	
	22	616	598	579	900	886	873	1404	1387	1365		
9.625	9	596	568	539	869	847	827	1393	1361	1336		
	16	583	557	528	858	838	818	1358	1326	1301	2359	5071
	22	559	528	502	822	803	783	1281	1257	1228		
10.51	9				778	750	723	1243	1206	1166		
	16				774	747	721	1228	1191	1151	2161	4630
	22				752	725	701	1175	1140	1102		
11.75	9				671	638	605	1071	1025	977		
	16				669	636	603	1067	1021	972	1940	4145
	22				662	629	596	1041	994	948		
12.75	9							------	------	------		
	16							941	880	816	1786	3814
	22							928	866	805		

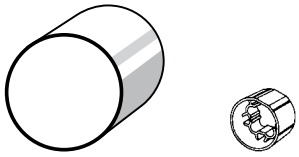
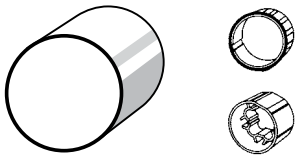
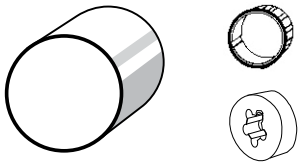
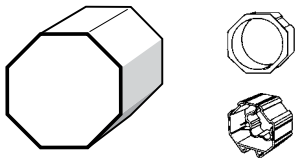
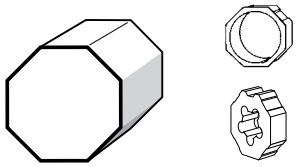
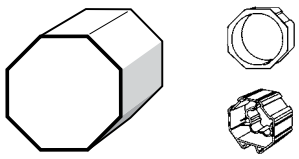
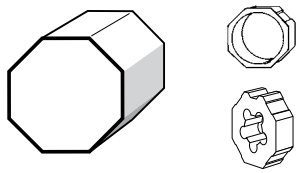
- Please consult a SIMU representative for more details concerning larger tube diameters.

Operators
Type 3.5
Accessories

Item	Reference	Description
	**9510000**	**Support for 10 mm square** - Attaches to wall bracket 800095 or 800016 - For use with: 500003 - Zinc Plated
	**9580008**	**Motor mount 10mm square pin** - For use with all 3.5 operators - Zinc Plated
	**9580009**	**Motor flat mount** - For use with all 3.5 operators - Zinc Plated
	**9012258**	**Motor flat mount** - For use with all 3.5 operators - Zinc Plated
	**9001529**	**Type 3.5 to Type 5 Adaptor Kit** - Allows the use of Type 5 crowns and drives with Type 3.5 motors - Black composite - Maximum motor torque - 13 Nm
	**9001481** **9001497** **9001495** **9001529**	**Motor 3.5 crown and drive sets** - 40mm Octagonal - 37mm Round - 40mm Round - Adaptor interface which allows the use of all T5 adaptors
	**9015292**	**Solar Panel Mounting Clips**

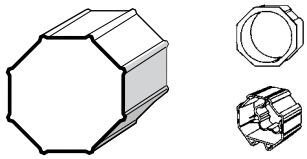
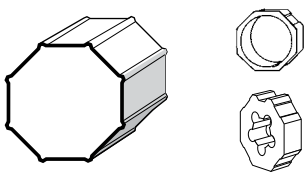
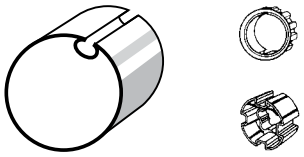
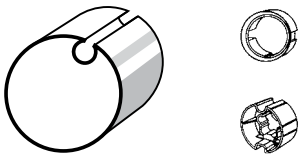
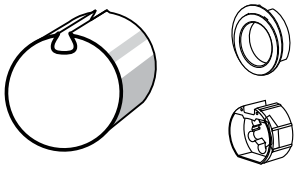
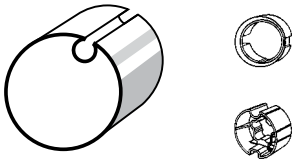
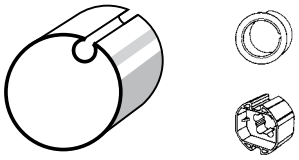
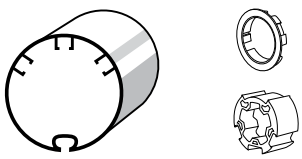
Operator Accessories
Tube Adaptors
Type 5 / DMI

Crowns and Drives

Tube Profiles	Reference	Description
	**9206089** **9206088**	50mm Round Type 5 Drive - Soft clip 50mm Round Type 5 Drive - Hard clip
	**9707026** **9521028** **9206041**	60mm Round Type 5 Crown **60mm Round Type 5 Set "Hard Clip"** 60mm Round Type 5 Drive - Hard clip
	**9707026** **9012813** **9012950**	60mm Round Type 5 Crown **60mm Round Type 5 Set Aluminum** 60mm Round Type 5 Drive - Aluminum
	**9707025** **9521031** **9751001**	60 mm Octagonal Type 5 Crown **60 mm Octagonal Type 5 Set** 60 mm Octagonal Type 5 Drive
	**9707025** **9012814** **9012951**	60 mm Octagonal Type 5 Crown **60 mm Octagonal Type 5 Set Aluminum** 60 mm Octagonal Type 5 Drive Aluminum
	**9521046** **9521021** **9751002**	70 mm Octagonal Type 5 Crown **70 mm Octagonal Type 5 Set** 70 mm Octagonal Type 5 Drive
	**9521046** **9012812** **9011878**	70 mm Octagonal Type 5 Crown **70 mm Octagonal Type 5 Set Aluminum** 70 mm Octagonal Type 5 Drive Aluminum

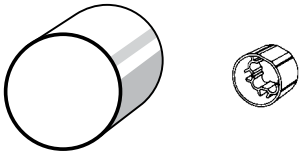
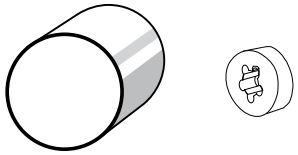
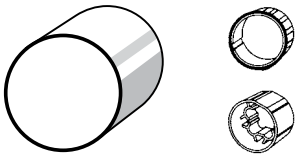
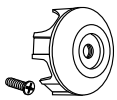
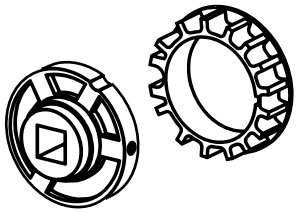
Operator Accessories
Tube Adaptors
Type 5 / Type 6 / DMI

Crowns and Drives

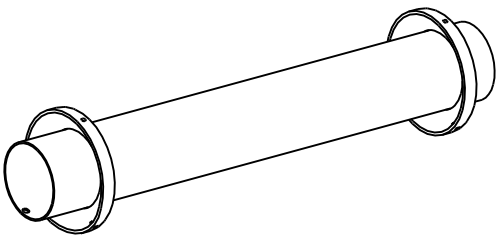
Tube Profiles	Reference	Description
	**9705340**	70 mm Octagonal Type 6 Crown
	9530117	**70 mm Octagonal Type 6 Set**
	9751002	70 mm Octagonal Type 6 Drive
	**9705340**	70 mm Octagonal Type 6 Crown
	9012815	**70 mm Octagonal Type 6 Set Aluminum**
	9011878	70 mm Octagonal Type 6 Drive Aluminum
	**9521000**	**70 mm Type 5 Set**
	9530112	**70 mm Type 6 Set**
	**9521007**	**78 mm Type 5 Set**
	9530107	**78 mm Type 6 Set**
	**9521010**	**72 mm Type 5 Set**
	**9521019**	**70 mm Type 5 Set**
	**9521008**	**85 mm Type 5 Set**
	9530109	**85 mm Type 6 Set**
	**707030**	63 mm Type 5 Crown
	751002	63 mm Type 5 Drive

Operator Accessories
Tube Adaptors
Type 5 / Type 6 / DMI / Type 8

Crowns and Drives

Tube Profiles	Reference	Description
	**9206041**	60 mm Round Type 6
	**9012950**	60 mm Round Type 6 Aluminum
	**9530112** **9530124**	67mm Round Type 6 94mm Round Type 6
	**9910004** **9910062**	**For use with all aluminum drive wheels** Type 5 drive wheel stop Type 6 drive wheel stop
	**9001297** **9001315**	94mm Round Type 8 Drive Aluminum 124mm Round Type 8 Adaptor Set

Sleeve Adaptors

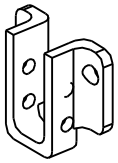
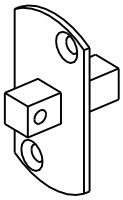
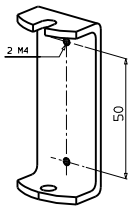
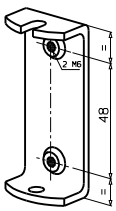
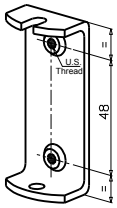
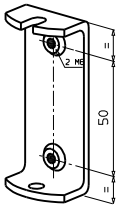
Tube Profiles	Reference	Description
	**9530135** **9530137** **9530142** **9530143** **9530144** **9530145**	85 mm Round 94 mm Round 100 mm Round 102 mm Round 104 mm Round 107 mm Round

All adaptor sleeves require a crown and drive wheel:

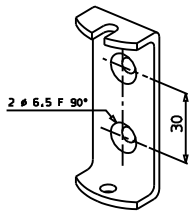
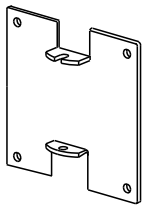
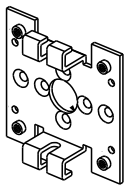
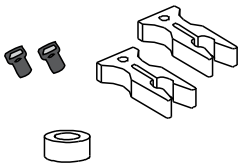
Type 5: **9521028 Adaptor Set**

Type 6: **9206041 Drive Wheel**

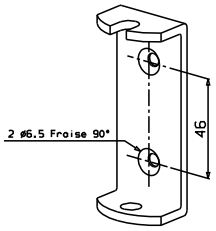
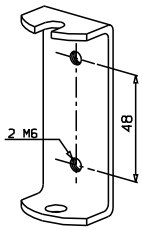
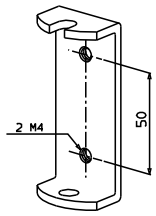
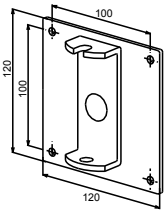
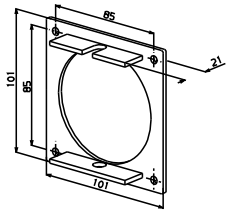
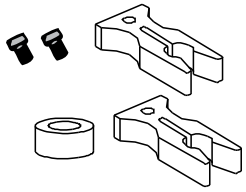
Operators
Type 5
Bracket Accessories

Item	Reference	Description
	**9510000**	**Shade Bracket** - U- Support for square 10mm motor mount 9500073 - Attaches to wall bracket 2003677 - Zinc Plated Steel
	**9520073**	**Shade Bracket** - Motor mount 10mm square pin - For Type 5 operators - Zinc Plated Steel
	**9520038**	**Shade Bracket** - 50mm spacing / 4mm tapped holes - Zinc Plated Steel
	**9520040**	**Awning Bracket** - 48mm spacing / 6mm tapped holes - Zinc Plated steel
	**9520188**	**Awning Bracket** - 48mm spacing / 1/4” US threaded tapped holes - Zinc Plated Steel
	**9520041**	**Awning Bracket** - 50mm spacing / 6mm tapped holes - Zinc Plated Steel

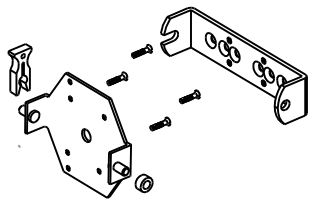
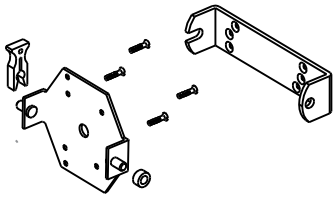
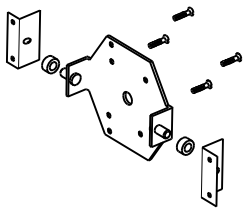
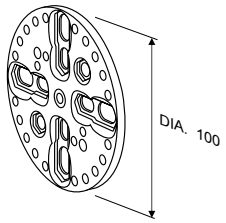
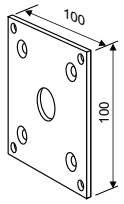
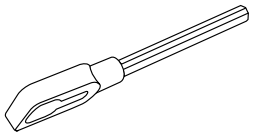
Operators
Type 5
Bracket Accessories

Item	Reference	Description
	**9520076**	**Standard Bracket** - 30mm spacing / counter sunk holes - Attaches to wall plate 2003611 or 2003612 - Zinc Plated steel
	**9520187**	**Shutter Bracket** - Maxi side frame bracket 100x100mm - Requires side frame center pin to be removed - Gold Zinc Plated Steel
	9252527	**Shade Bracket** - 30mm spacing / 1/4” US Threaded holes - Attaches to wall bracket: 2003643 - Zinc Plated Steel
	**9520049**	**Shutter Bracket** - Mini side frame bracket 80x80mm - No center pin removal required - Zinc Plated Steel
	**9013156**	**Bracket Fitting Set** - Type 5 bracket fitting set

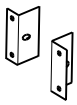
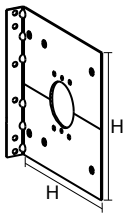
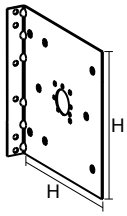
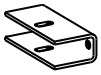
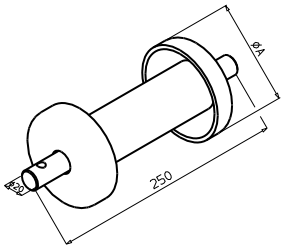
Operators
Type 6
Bracket Accessories

Item	Reference	Description
	**9530051**	**Standard Motor Bracket** - 46mm spacing / counter sunk holes - Attaches to wall plate 850066 or 850067 - Zinc Plated Steel
	**9530042** **9530019**	**Awning Bracket** - 48mm spacing / 6mm tapped holes - 48mm spacing / 1/4” US threaded tapped holes - Zinc Plated Steel
	**9530015**	**Shade Bracket** - 50mm spacing / 4mm tapped holes - Zinc Plated Steel
	**9530083**	**Shutter Bracket** - Super Maxi side frame bracket 120x120mm - Accommodates side frame center pin - Zinc Plated Steel
	**9530018**	**Shutter Bracket** - Maxi side frame bracket 100x100mm - Accommodates side frame center pin - Zinc Plated Steel
	**9856000**	**Bracket Fitting Set** Type 6 bracket fitting set

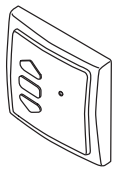
Operators
Type 5 and 6 DMI
Bracket Accessories

Item	Reference	Description
	**9520074**	**Motor Bracket** - DMI override 2 piece bracket - Attaches to wall plate 850066 or 850067 - Zinc Plated Steel
	**2005701**	**Motor Bracket** - DMI override 2 piece bracket adjustable - Attaches to wall plate 850066 or 850067 - Zinc Plated Steel
	**9520079**	**Motor Bracket** - DMI override 3 piece through side plate bracket - Zinc Plated Steel
	**9420647**	**Motor Bracket** - DMI multi-system awning bracket - Black Painted Cast Aluminium
	**9706034**	**Motor Bracket** - 100mm X 100mm Plate - Zinc Plated Steel
	**9685114**	**DMI Override Eye** - 7mm hex shaft - Black composite coated eye - Zinc Plated Steel Shaft

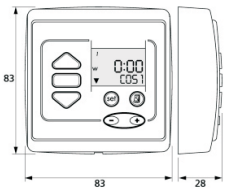
Operators
Type 8 and 9
Bracket Accessories

Item	Reference	Description
	**9001413** **9541089**	**Motor Bracket** - Use with Type 8 operators - Use with Type 9 operators - Attaches to wall plate 9541001,9541005 or 9541009 - Zinc Plated Steel
	**9541001** **9541005** **9541009**	**Wall Bracket Motor Side for Type 8 and Type 9** - 280mm x 280mm - 330mm x 330mm - 400mm x 400mm - Galvanized Plated Steel
	**2003828** **9541068** **2003830**	**Wall Bracket Idle Side for Type 8 and Type 9** - 280mm x 280mm - 330mm x 330mm - 400mm x 400mm - Galvanized Plated Steel
	**2003807**	**Idler Bracket** - Use with Idlers 9542008, 9542009, 9542012 and 9542014 - Zinc Plated Steel
	**9542008** **9542009** **9542012** **9542014**	**Heavy Duty Steel Idler** - 94mm OD - 97mm OD - 124mm OD - 127mm OD - Sealed Bearings - Painted Steel

Hz Wireless Radio Switches and Receivers

Items	Reference	Description
	**2005840**	**Single Channel Surface Wall Mount** -Available in white -Indoor rated
	2006138 White **2006139** Silver **2006140** Plum **2006141** Green **2006142** Orange	**Slim Single Channel Hand Held**
	2006143 White **2006144** Silver **2006145** Plum **2006146** Green **2006147** Orange	**Slim Multi Channel Hand Held** -5 independent channels that can be programmed to operate one or more motors.
	2007350 White **2007351** Silver	**16-Channel Hz Remote Control** -Programs 16 channels for control of both indoor and outdoor window coverings.
	1810897 White **1810898** Ivory **1810899** Black	**DecoFlex Single Channel Wall Switch** -Indoor rated
	1810813 White **1810814** Ivory **1810830** Black	**DecoFlex Single Channel Wall Switch** -5 independent channels that can be programmed to operate one or more motors. -Indoor rated
	1810972 Silver **1811051** Black	**DecoFlex Table Top Control Accessory** -Converts a DecoFlex Wall Switch to a Table Top Control with this accessory.

Hz Wireless Radio Switches and Receivers

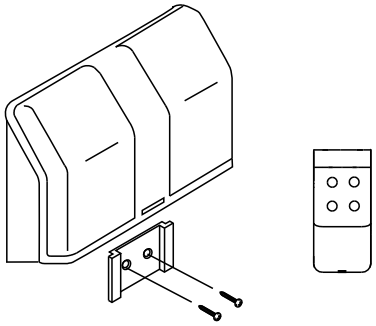
Items	Reference	Description
	2005326	**Two Channel Key Chain Style Transmitter** -Available in black -Sequence function
	2005914	**Four Channel Key Chain Style Transmitter** -Available in black -Sequence function
	**2004960**	**Hz Radio Timer** -Compatible with all Hz radio operators. This timer can operate multiple operators automatically at a set time. -Indoor use only.
	2006029	**Hz Radio Key Pad** -Compatible with all Hz radio operators. This key can operate two independent Hz radio operators. -IP 54 Outdoor weather rated.
	2005714	**Hz Radio Dry Contact Transmitter** -This transmitter is designed to link Hz operators into most home automation systems.
	1810602	**Hz Radio Receiver Motor Controller** -This radio receiver can be used with the SIMU standard AC motor series T3.5, T5, T5DMI,T6, T6DMI, T8 and T8 override. This control is compatible with all the transmitter switches shown above.

No job is too large or small for the Hz wireless technology which is the latest radio innovation from SIMU. It combines the function of wireless switching with the added benefit of group control directly into the operator. Everything from individual switching and sub grouping to a master control can be accomplished without the use of external controls. For more details on this product please refer to the Hz control manual which features detailed information on wiring and program scenarios.

Note: This radio control system is not compatible with the RC200 sequence controlled radio.

Sequence Controlled Radio

Radio Receiver and Transmitter Controls



This radio remote control is everything you need to operate your SIMU operator. It's new designer look is stylish, compact and water resistant. Built-in reliable features include sequence controlled switching, remote location switching ability, run timer with automatic shut-off and dry contact safety control hook-up. The designer remote complies with Part 15 of the FCC Rules and can transmit over 300 feet.

Reference	Description
2005642	Transmitter-Two Channel
2005643	Transmitter-Four Channel
2005644	Transmitter-Twelve Channel
2005632	Receiver (120V-60Hz) surface wall mount
2005634	Receiver (Dry contact hook-up)

Note: This radio control system is not compatible with the Hz wireless control products.

Wiring for one motor and one RC200 receiver

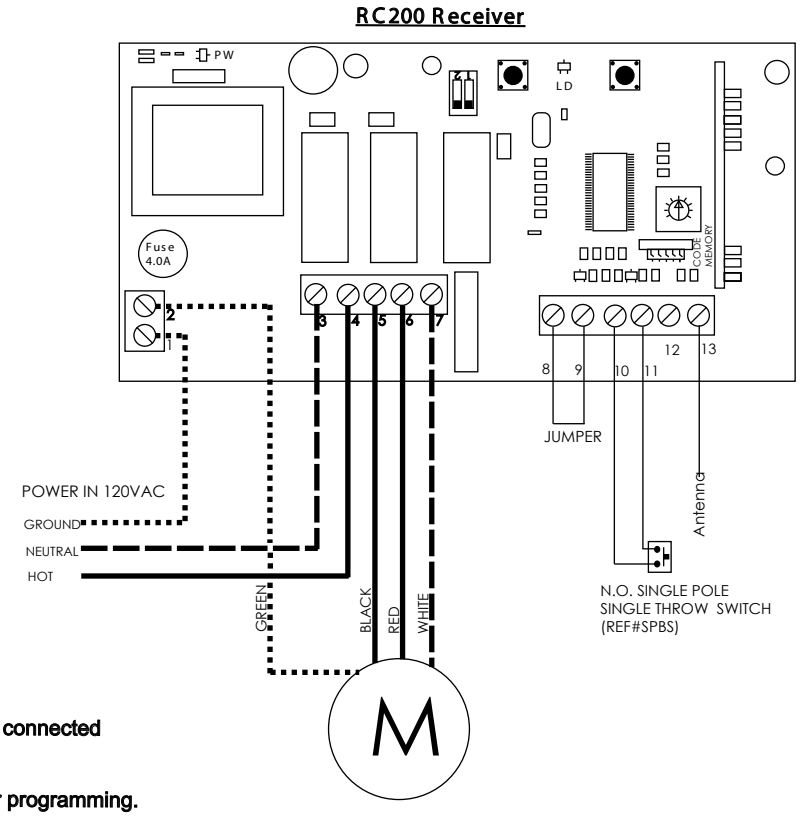
NOTICE: For installation by a qualified electrician in accordance with national and local electrical codes, and the following instructions.

CAUTION: RISK OF ELECTRICAL SHOCK. Disconnect power before installing. Never wire energized electrical components.

Select conductors having 90 C° or higher rated insulation having sufficient ampacity in accordance with the 60 C° column of National Electrical Code R Table 310-16 or Canadian Electrical Code Table 2

Terminal capacity: #14 AWG to #10 AWG

Strip conductors using strip gage on switch body. DO NOT USE TIN CONDUCTORS.



1 - Ground (Green)
2 - Ground (Green)
3 - Neutral
4 - Hot 120VAC
5 - Direction 1 (Black)
6 - Direction 2 (Red)
7 - Common (White)
***8 & 9 N. C. Reversing Sensor**
10 & 11 Remote Override Switch (SPBS)
12 - Coax Antenna Connection (not supplied)
13 - Standard Antenna (supplied with unit)

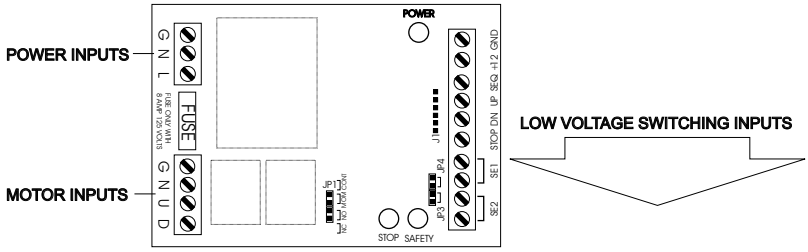
NOTE: - If you are not using a safety device a jumper wire must be connected to terminals 8 & 9.
- Do not cut antenna wire supplied with this unit.
- See complete instructions supplied with unit on transmitter programming.

Operator
Electronic Control Systems

Smart Motor Control "SMC"

The SMC is an ideal general purpose intelligent control system for commercial or industrial applications. The SMC allows control of a 120VAC tube motor by most standard commercial controls and safety detectors. It features a Q250mA 12 volt power supply for accessories, diagnostic LEDs for quick trouble shooting, normally open and closed inputs from reversing detectors and supports 2 and 4 wire safety edges. It also has a selectable stop function for normally open or closed switches, selectable time run or continuous pressure function and will support many sequencing devices such as radio controls, key switches and card readers.

Reference	Unit Function
2005720	Smart motor control board
2005566	Metal box for smart motor control
2005630	Photo eyes for SMC



Wiring for one motor and one SMC

NOTICE: For installation by a qualified electrician in accordance with national and local electrical codes, and the following instructions.

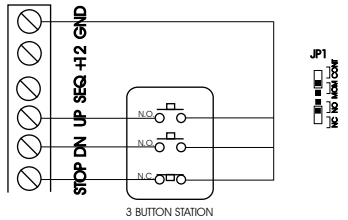
CAUTION: RISK OF ELECTRICAL SHOCK. Disconnect power before installing. Never wire energized electrical components.

Select conductors having 90 C° or higher rated insulation having sufficient ampacity in accordance with the 60 C° column of National Electrical Code R Table 310-16 or Canadian Electrical Code Table 2

Terminal capacity: #14 AWG to #10 AWG

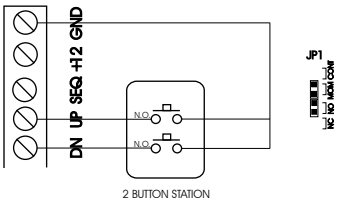
Strip conductors using strip gage on switch body. DO NOT USE TIN CONDUCTORS.

3 BUTTON STATION



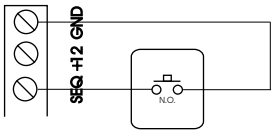
NOTES:
1) SHOULD BE USED WITH REVERSING SENSORS
2) SHOWN CONFIGURED FOR A N.C. STOP BUTTON

2 BUTTON STATION



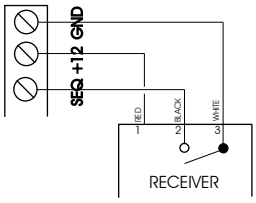
NOTES:
1) SHOWN REQUIRING CONSTANT PRESSURE ON THE SWITCH FOR THE MOTOR TO OPERATE.
2) SWITCH MUST BE IN VIEW OF THE DOOR

SEQUENCING CONTROL



NOTES:
1) CAN BE USED WITH ANY MOMENTARY, DRY CONTACT SUCH AS KEY SWITCHES, CARD READERS, RADIO CONTROLS, ETC..
2) TWO OR MORE SWITCHES CAN BE WIRED IN PARALLEL.
3) CONTROL WILL FOLLOW A SEQUENCE WITH EACH PULSE (UP, STOP, DOWN, STOP, UP, ...)

SINGLE CHANNEL RADIO

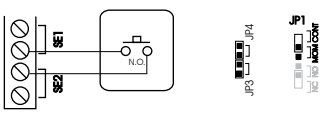


NOTES:
1) WIRING SHOWN IS STANDARD BUT MAY VARY WITH MANUFACTURER. CHECK INSTRUCTIONS WITH RADIO RECEIVER FOR DIFFERENCES BEFORE WIRING.

4 WIRE SENSING EDGE

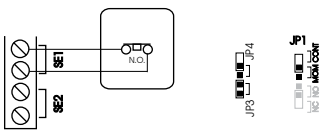
NOTES:
1) JUMPERS JP3 AND JP4 MUST BE OFF WHEN USING A 4 WIRE SENSING EDGE.
2) JP1 TOP JUMPER MUST BE OFF (CONT). THIS SETS THE SMC RUN TIMER ON.
3) JP1 LOWER JUMPER SETTING DEPENDS ON STOP BUTTON.
4) CHECK SENSING EDGE FUNCTION. IF THE MOTOR REVERSES UPON SENSING EDGE ACTIVATION WHEN THE DOOR IS GOING UP INSTEAD OF DOWN, REVERSE THE RED AND BLACK MOTOR LEADS.

N.O. SENSING EDGE (2 WIRE)



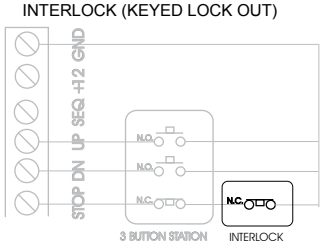
NOTES:
1) JUMPERS JP3 AND JP4 MUST BE ON WHEN USING A NORMALLY OPEN SENSING (2 WIRE) EDGE.
2) JP1 TOP JUMPER MUST BE OFF (CONT). THIS SETS THE SMC RUN TIMER ON.
3) JP1 LOWER JUMPER SETTING DEPENDS ON THE STOP BUTTON.
4) CHECK SENSING EDGE FUNCTION. IF THE MOTOR REVERSES UPON SENSING EDGE ACTIVATION WHEN THE DOOR IS GOING UP INSTEAD OF DOWN, REVERSE THE RED AND BLACK MOTOR LEADS.

N.C. REVERSING SENSOR



NOTES:
1) JUMPER JP3 MUST BE ON AND JP4 MUST BE OFF WHEN USING NORMALLY CLOSE REVERSING SENSOR.
2) JP1 TOP JUMPER MUST BE OFF (CONT). THIS SETS THE SMC RUN TIMER ON.
3) JP1 LOWER JUMPER SETTING DEPENDS ON STOP BUTTON.
4) CHECK SENSING EDGE FUNCTION. IF THE MOTOR REVERSES UPON SENSING EDGE ACTIVATION WHEN THE DOOR IS GOING UP INSTEAD OF DOWN, REVERSE THE RED AND BLACK MOTOR LEADS.

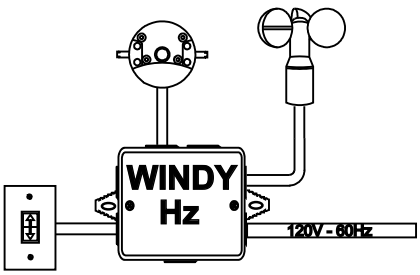
INTERLOCK (KEYED LOCK OUT)



NOTES:
1) A NORMALLY CLOSED INTERLOCK (KEYED LOCK OUT) CAN BE CONNECTED IN SERIES WITH THE N.C. STOP BUTTON.
2) SHOULD BE USED WITH REVERSING SENSORS
3) SHOWN CONFIGURED FOR A N.C. STOP BUTTON.

Operator
Electronic Control Systems

Automatic Environmental Controls



The WINDY Hz is designed to retract a motorized awning or sun shade during windy conditions, whether your home or away. The WINDY Hz can also be used to close other window treatments such as rolling shutters during those same windy conditions.
Other features of the WINDY Hz include the use of standard Hz transmitters and a wired switch.

Reference	Unit Function
2006860	Wind Control for Awnings and Shutters

Wiring for one motor and one WindyHz

NOTICE: For installation by a qualified electrician in accordance with national and local electrical codes, and the following instructions.

CAUTION: RISK OF ELECTRICAL SHOCK. Disconnect power before installing. Never wire energized electrical components.

Select conductors having 90 C° or higher rated insulation having sufficient ampacity in accordance with the 60 C° column of National Electrical Code R Table 310-16 or Canadian Electrical Code Table 2

Terminal capacity: #14 AWG to #10 AWG

Strip conductors using strip gage on switch body. DO NOT USE TIN CONDUCTORS.

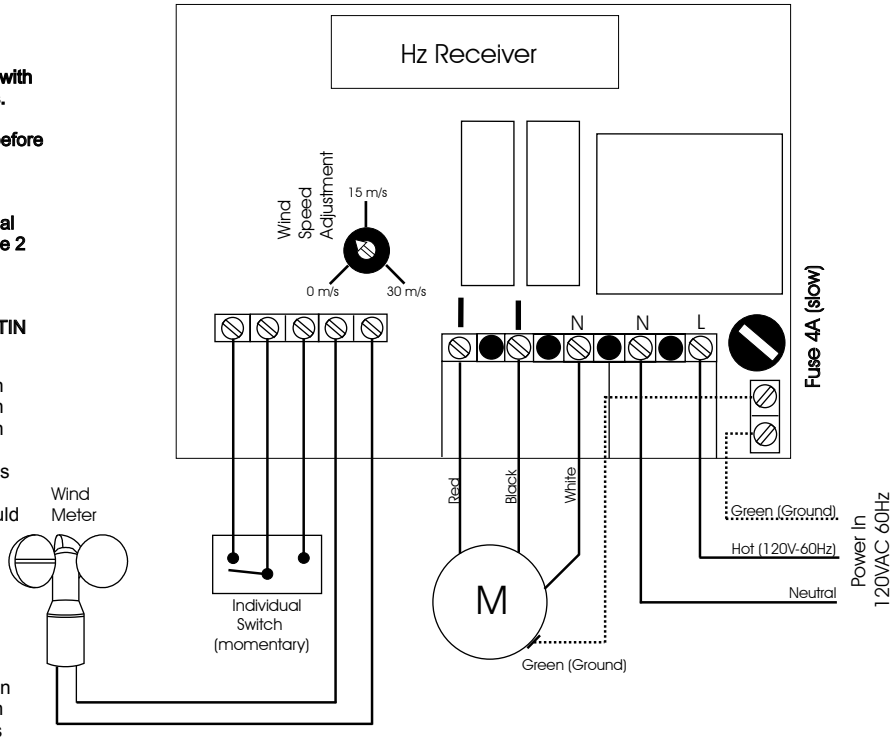
*** NOTE:**
Turn the wind speed adjustment down to minimum. Spin the wind sensor and confirm the windy activates in the correct direction. If the windy activates the motor in the wrong direction at a wind signal, reverse the red and black motor leads. Remember to turn the wind speed adjustment back up after testing.

0 m/s = 0 mph
15 m/s = 34 mph
30 m/s = 67 mph

Note: for awnings and shades, the wind speed should **not** be set over 15 m/s.

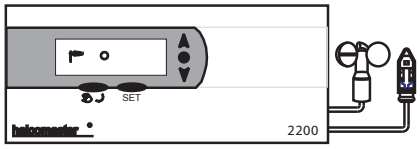
A typical setting for awnings would be 7 m/s (15.5 mph). Dial set as shown midway between 0m/s and 15/m/s

Notice: For installation by a qualified electrician in accordance with national and local electrical codes.



Operator
Electronic Control Systems

Automatic Environmental Controls



The Halcomaster 2200 is a control system for all types of window treatments. Whether you are controlling retractable awnings, rolling shutters or sun shades, the Halcomaster 2200 enables a window treatment to provide shading from the sun and protection from the wind automatically and conveniently. A digital display read out allows you to monitor the sensors sun intensity and wind speed levels. These settings can be adjusted easily from the control unit.

Reference	Unit Function
2279073	Sun and Wind Control (white - surface mount)
2279055	Replacement / Additional Sun Sensor
2279010	Replacement / Additional Rain Sensor
2279139	Replacement / Additional Temperature Sensor
2279058	Replacement / Additional Wind Sensor
2279054	Replacement / Additional Sensor Bracket

Wiring for one motor and one 2200PRO

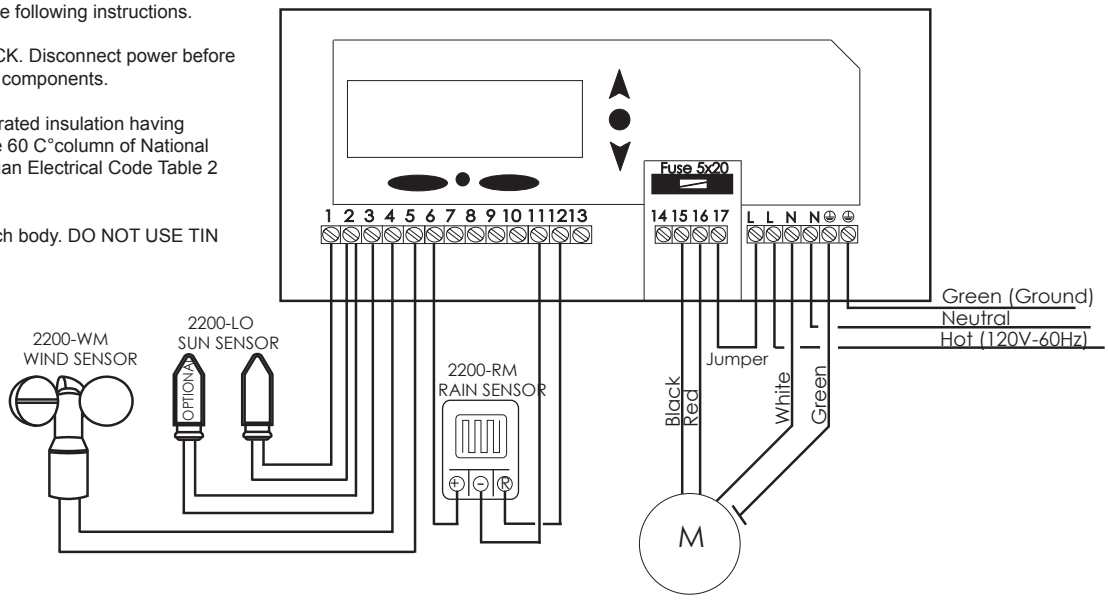
The Halcomaster 2200USPRO allows for additional sensors to be attached. It also allows for additional switches to be remotely located.

NOTICE: For installation by a qualified electrician in accordance with national and local electrical codes, and the following instructions.

CAUTION: RISK OF ELECTRICAL SHOCK. Disconnect power before installing. Never wire energized electrical components.

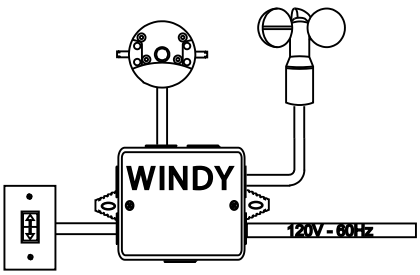
Select conductors having 90 C°or higher rated insulation having sufficient ampacity in accordance with the 60 C°column of National Electrical Code R Table 310-16 or Canadian Electrical Code Table 2 Terminal capacity: #14 AWG to #10 AWG

Strip conductors using strip gage on switch body. DO NOT USE TIN CONDUCTORS.



Operator
Electronic Control Systems

Automatic Environmental Controls



The WINDY is designed to retract a motorized awning or sun shade during windy conditions, whether your home or away. The WINDY can also be used to close other window treatments such as rolling shutters during those same windy conditions. The wind sensor is adjustable and the automatic wind protection function is designed to override the manual switch during high wind gusts. Other features of the WINDY include the use of standard switches. Choose from designer switches, toggle switches or rocker switches.

Reference	Unit Function
2005721	Wind Control for Awnings and Shades
2009089	Wind Control for Rolling Shutters

Wiring for one motor and one Windy

NOTICE: For installation by a qualified electrician in accordance with national and local electrical codes, and the following instructions.

CAUTION: RISK OF ELECTRICAL SHOCK. Disconnect power before installing. Never wire energized electrical components.

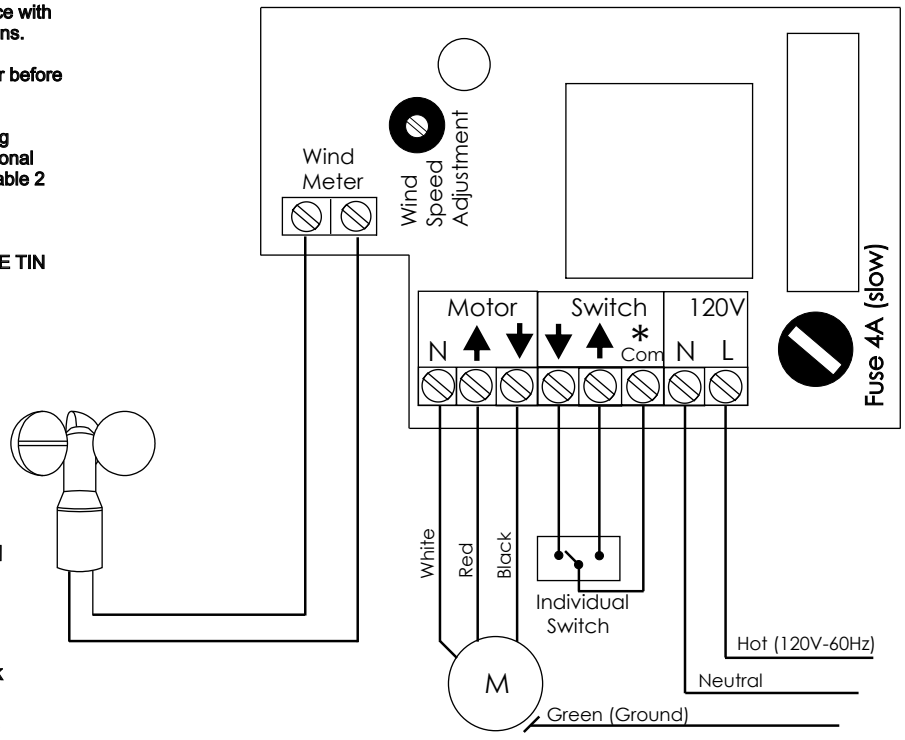
Select conductors having 90 C° or higher rated insulation having sufficient ampacity in accordance with the 60 C° column of National Electrical Code R Table 310-16 or Canadian Electrical Code Table 2

Terminal capacity: #14 AWG to #10 AWG

Strip conductors using strip gage on switch body. DO NOT USE TIN CONDUCTORS.

* WARNING

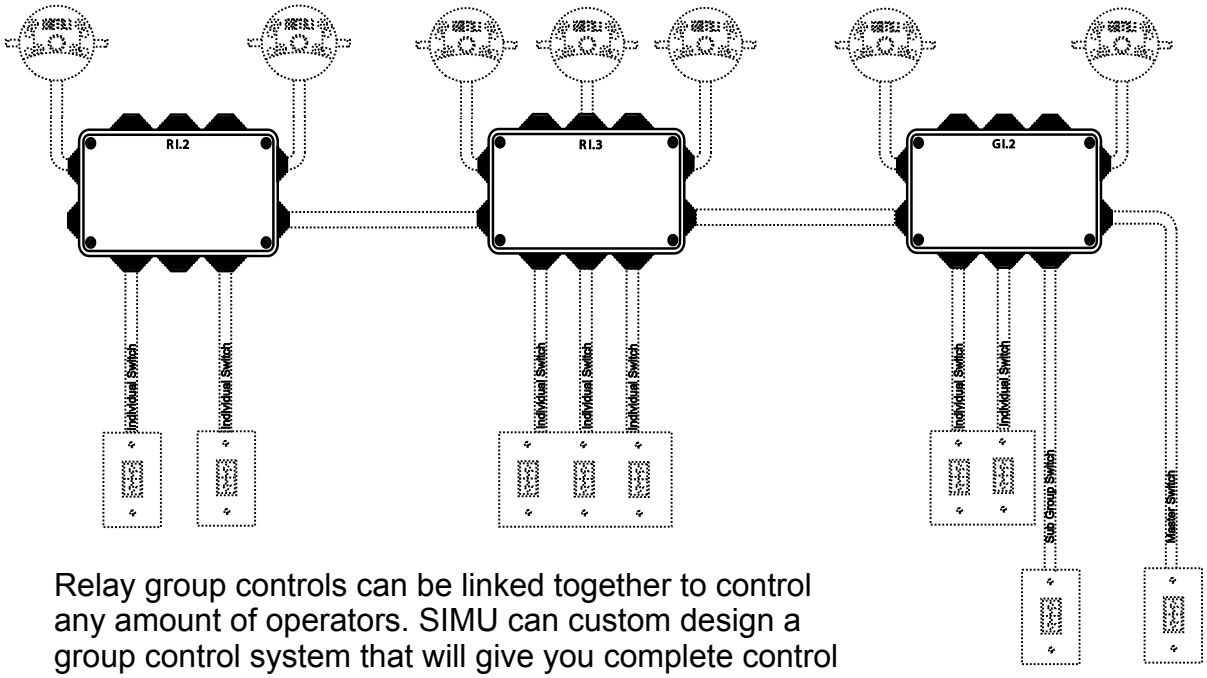
THE "SWITCH COM" IS AN INTERNALLY PROVIDED HOT (115VAC) POWER AND IS ONLY CONNECTED TO COMMON TERMINAL OF THE SWITCH. DO NOT CONNECT TO ANY EXTERNAL VOLTAGE SOURCE (LINE POWER: HOT OR NEUTRAL) AS THIS WILL CAUSE SEVERE DAMAGE TO THE CONTROL.



* NOTE:
Turn the wind speed adjustment down to minimum. Spin the wind sensor and confirm the windy activates in the correct direction. If the windy activates the motor in the wrong direction at a wind signal, reverse the red and black motor leads. Remember to turn the wind speed adjustment back up after testing.

Operator
Electronic Control Systems

Group Control Relays



Relay group controls can be linked together to control any amount of operators. SIMU can custom design a group control system that will give you complete control of your SIMU operators.

Reference	Unit Function
2282074	Two Motor Relay Group Control (master, individual) (RI.2)
2282075	Three Motor Relay Group Control (master, individual) (RI.3)
2282028	Two Motor Relay Group Control (master, sub group, individual) (GI.2)
2282018	Two Motor Relay Group Control (24-Volt switching) (RG.2)
2005718	Two Motor Relay Group Control (master, individual) **Metal Box** (RI.2M)
2005719	Three Motor Relay Group Control (master, individual) **Metal Box** (RI.3M)
2005717	Two Motor Relay Group Control (24-Volt switching) **Metal Box** (RG.2M)

NOTICE: For installation by a qualified electrician in accordance with national and local electrical codes, and the following instructions.

CAUTION: RISK OF ELECTRICAL SHOCK. Disconnect power before installing. Never wire energized electrical components.

Select conductors having 90 C or higher rated insulation having sufficient ampacity in accordance with the 60 C column of National Electrical Code R Table 310-16 or Canadian Electrical Code Table 2

Terminal capacity: #14 AWG to #10 AWG

Strip conductors using strip gage on switch body. DO NOT USE TIN CONDUCTORS.

Ground (Green) ⏚

Hot Power L1 (Black)

Common N (White)

M Motor

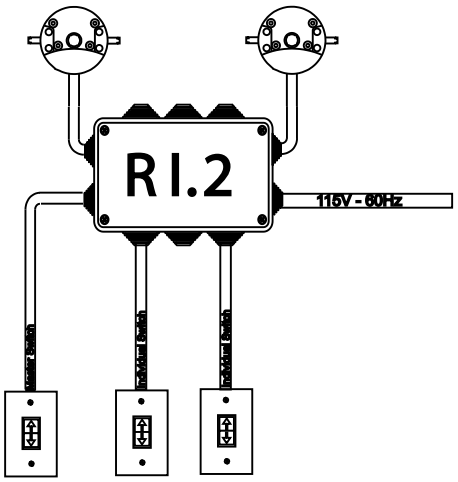
P Power to Ind. Switch

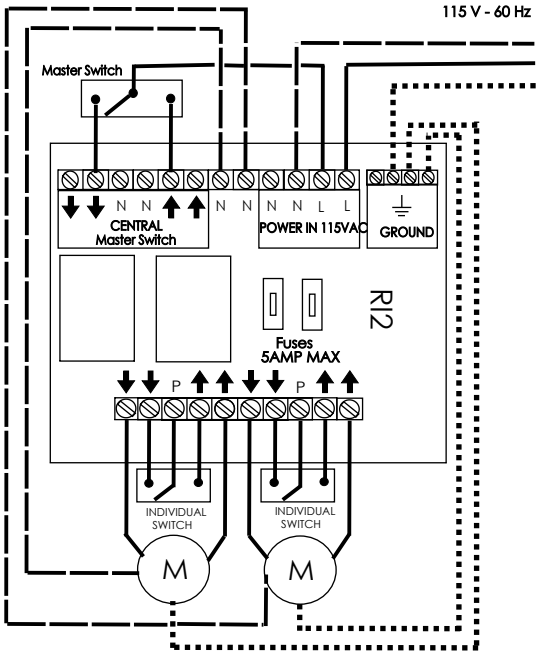
Motor Direction (Red/Black)

Note: Connections are only at terminal

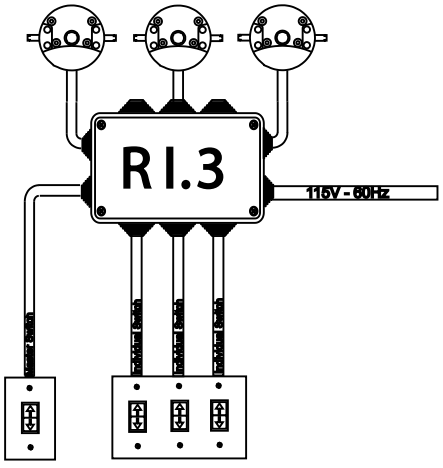
Operator
Electronic Control Systems

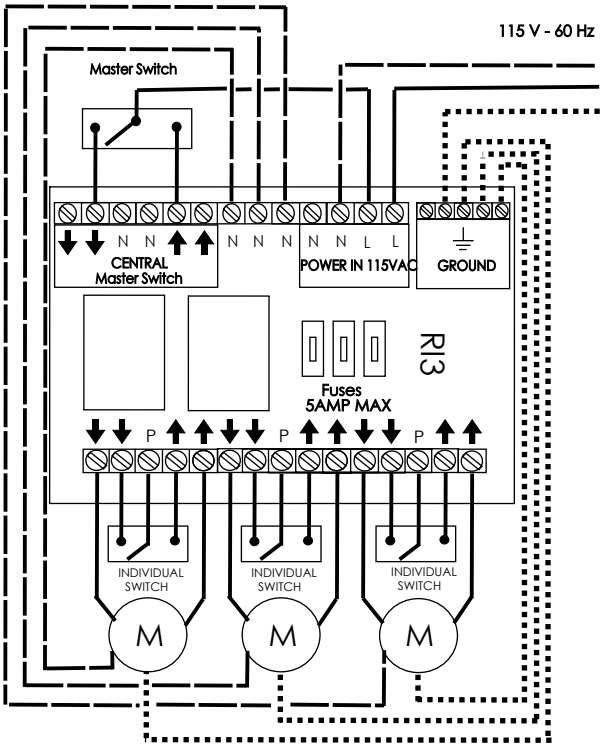
Wiring Relays





*** Two Motors**
*** One Momentary Master Switch**
*** Two Momentary Individual Control Switches**

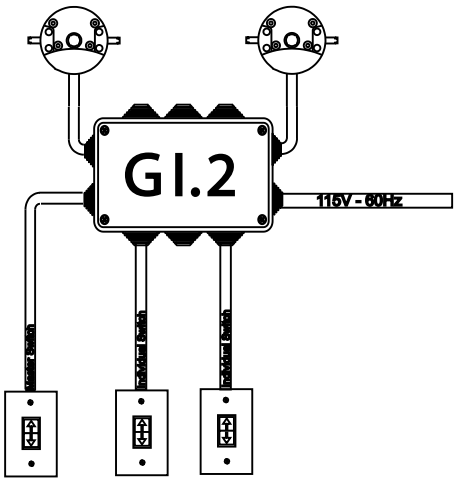


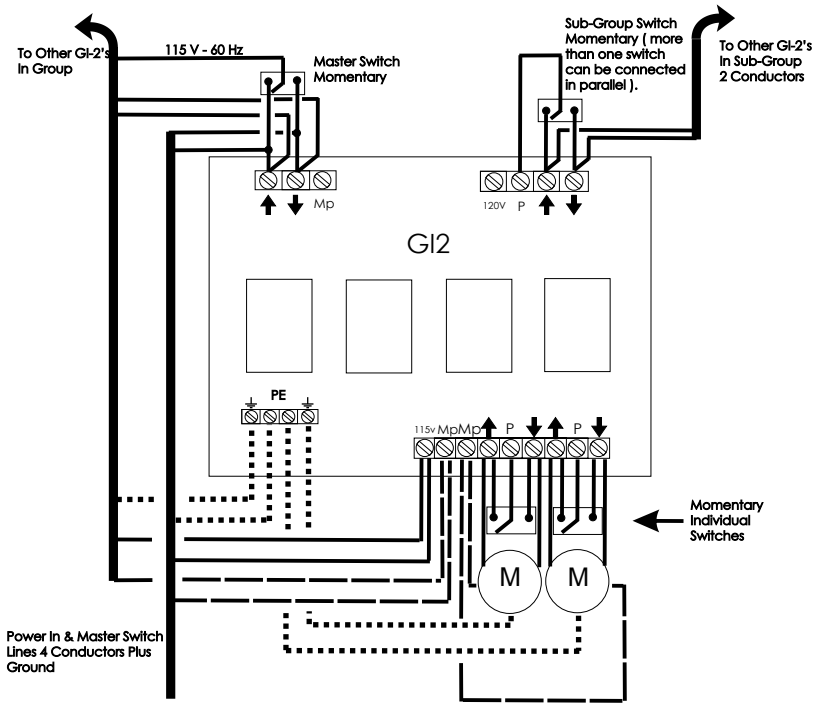


*** Three Motors**
*** One Momentary Master Switch**
*** Three Momentary Individual Control Switches**

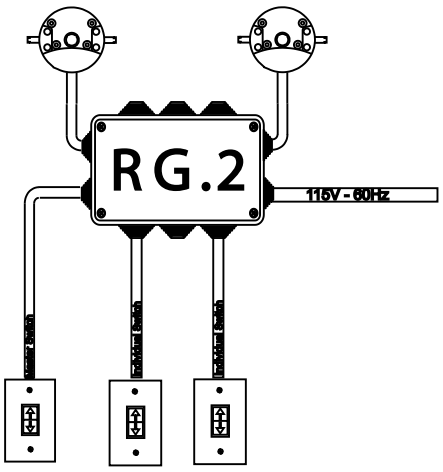
Operator
Electronic Control Systems

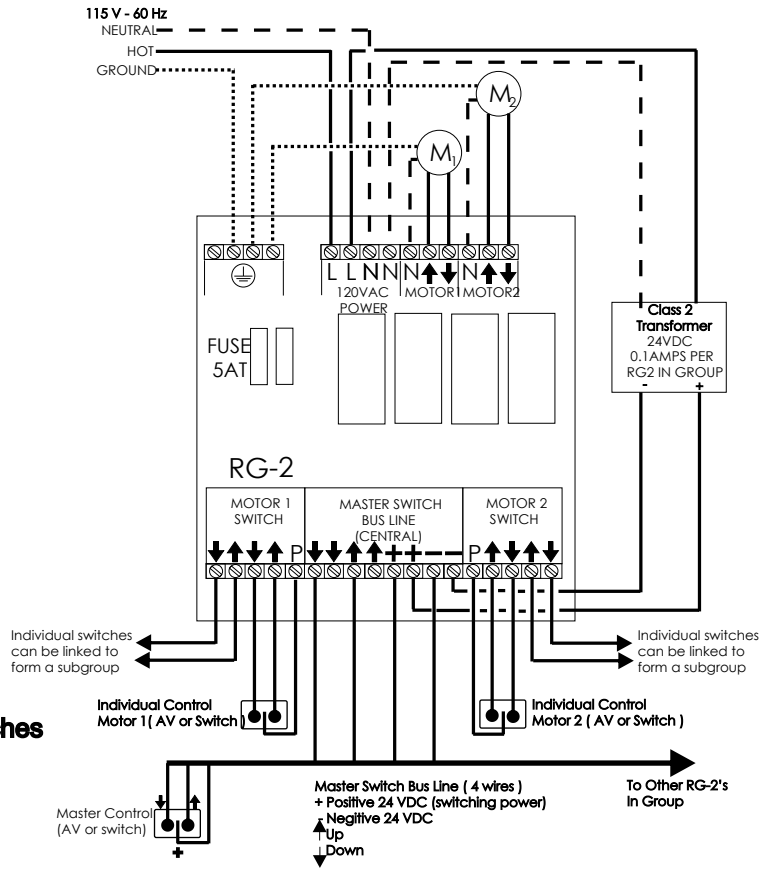
Wiring Relays





*** Two Motors**
*** One Momentary Master Switch**
*** One Momentary Sub Group Switch**
*** Two Momentary Individual Control Switches**

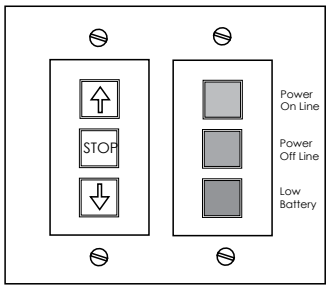




*** Two Motors**
*** Low-Voltage Momentary Master Switch**
*** Two Low-Voltage Momentary Individual Control Switches**

Operator
Electronic Control Systems
Low Voltage

Battery Back-up System



Never be without POWER!

The BBU is designed to provide you with constant power to any SIMU DC operator. The BBU operates from a battery that is charging while standard AC current is available. Three LED lights on the front of the unit keep you informed on your current power conditions. The unit also has additional dry contact connections for external switching devices such as home automation systems.

Reference	Description
2005715	Battery back up system with warning lights (white)
2005716	Battery back up system with warning lights (ivory)
2005586	Battery Replacement 12v 1.2 amp hour

Wiring for one DC motor and one BBS Unit

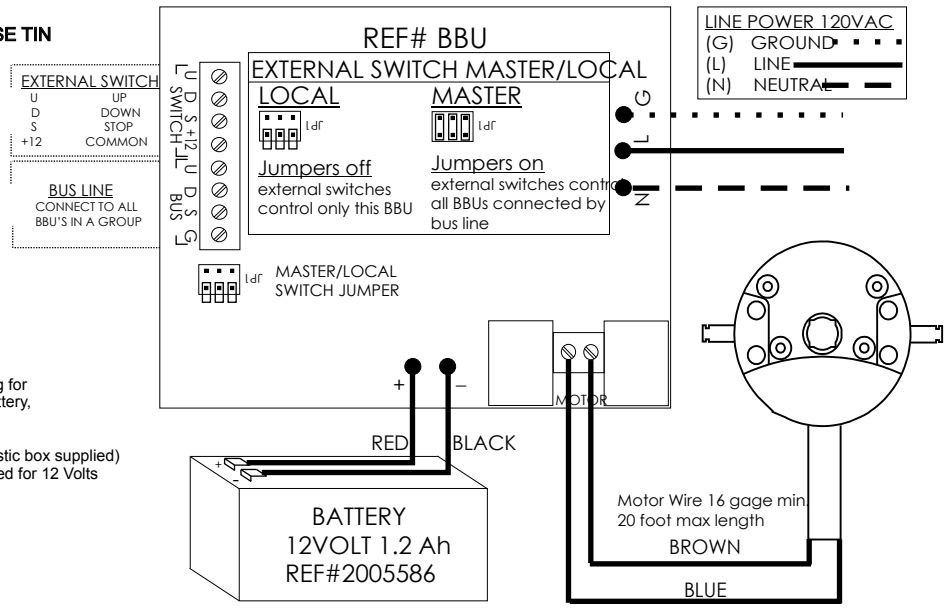
NOTICE: For installation by a qualified electrician in accordance with national and local electrical codes, and the following instructions.

CAUTION: RISK OF ELECTRICAL SHOCK. Disconnect power before installing. Never wire energized electrical components.

Select conductors having 90 C° or higher rated insulation having sufficient ampacity in accordance with the 60 C° column of National Electrical Code R Table 310-16 or Canadian Electrical Code Table 2

Terminal capacity: #14 AWG to #10 AWG

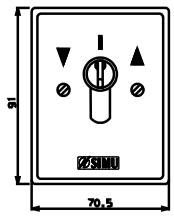
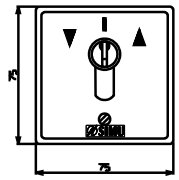
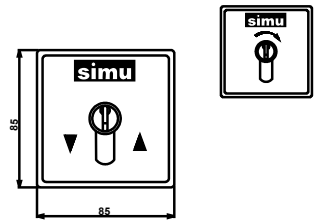
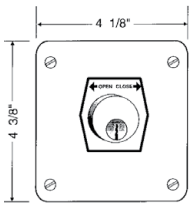
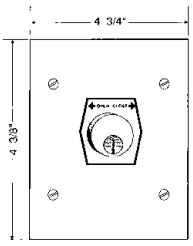
Strip conductors using strip gage on switch body. DO NOT USE TIN CONDUCTORS.



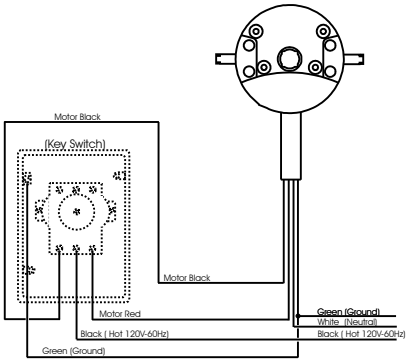
TECHNICAL DATA:

Input Voltage	120 VAC 50/60Hz
Input Current	50 mA
Motor Output Voltage	12 Volts Nominal
Motor Output Current	5 Amps Max. Polyfused
Battery Output	Voltage/Current Regulated Charging for 12 Volt 1.2 Ah Sealed Lead Acid Battery,
Standby Battery Current	6.5 mA
Shut Down Battery Current	.9mA
Size	3.5" X 2.5" (Fits in deep 2 gang plastic box supplied)
External Switching	N.O., Momentary Dry Contacts Rated for 12 Volts
Bus Line	12 Volts DC

Operator
Electronic Controls
Security Key Switches

Items	Reference	Description
	**2001547**	**Single Pole, Double Throw, Maintained Contact** -Surface mount * 3 keys included.
	**2001548** **2005751**	**Single Pole, Double Throw, Momentary Contact** -Surface mount * 3 keys included. -Surface mount (keyed alike)
	**2004964**	**Universal Key Switch** -Surface mount -Switch can be configured single or double throw, momentary or maintained contact. * 3 keys included.
	**2005616**	**Commercial Grade** **Single Pole, Double Throw, Momentary Contact** -Surface mount * 3 keys included.
	**2005614**	**Commercial Grade** **Single Pole, Double Throw, Momentary Contact** -Recessed mount * 3 keys included.
	2005752 **2005613**	**Standard Key Switch Extra Keys** **Commercial Grade Extra Keys**

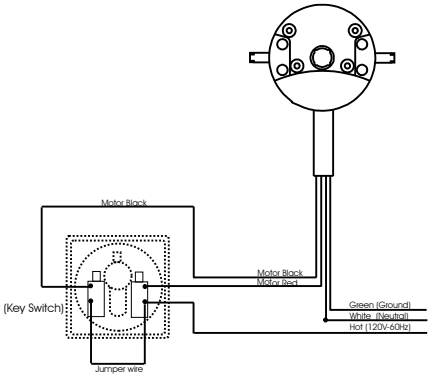
Operator
Electronic Controls
Security Key Switches



Key Switch

* One Motor
* One Key Switch

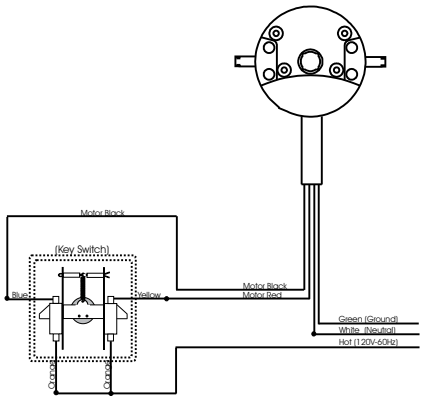
Reference Numbers
2001547 - Maintained key switch, surface mount



Key Switch

* One Motor
* One Key Switch

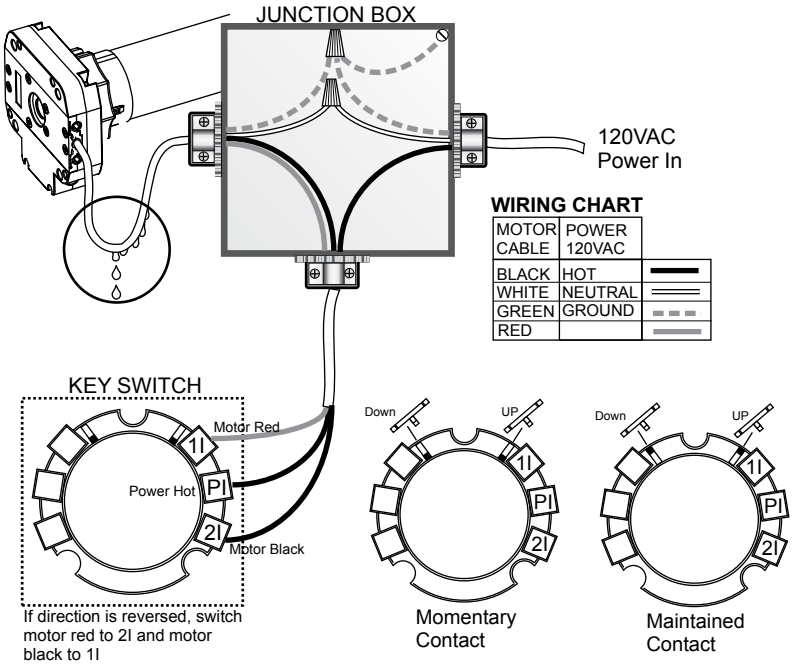
Reference Numbers
2001548 - Momentary key switch, surface mount
2005751 - Momentary key switch, surface mount



Key Switch

* One Motor
* One Key Switch

Reference Numbers
2005616 Momentary key switch, surface mount
2005614 Momentary key switch, recessed mount



Universal Key Switch

* One Motor
* One Key Switch

Reference Numbers
2004964 - Single or double throw, momentary or maintained contact

Wiring for one motor and one key switch switch

NOTICE: For installation by a qualified electrician in accordance with national and local electrical codes, and the following instructions.

CAUTION: RISK OF ELECTRICAL SHOCK. Disconnect power before installing. Never wire energized electrical components.

Select conductors having 90 C° or higher rated insulation having sufficient ampacity in accordance with the 60 C° column of National Electrical Code R Table 310-16 or Canadian Electrical Code Table 2

Terminal capacity: #14 AWG to #10 AWG

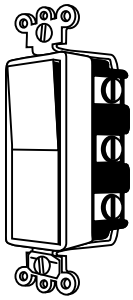
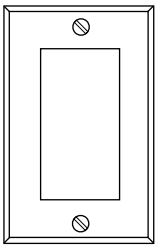
Strip conductors using strip gage on switch body. DO NOT USE TIN CONDUCTORS.

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 switch.

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

Operator
Electronic Controls
Designer Switches

Items	Reference	Description
	**1800373**	Maintained PDL SW-Ivory
	1800377	Momentary PDL SW-Ivory
	1800376	Main. DB Pole, DT PDL SW-Ivory
	1800374	Maintained PDL SW-White
	1800378	Momentary PDL SW-White
	1800375	Main. DB Pole, DT PDL SW-White
Designer Cover Plates 	**9011966**	Sng. Gang PDL SWPLT-Ivory
	9011968	Two Gang PDL SWPLT- Ivory
	9011967	Sng. Gang PDL SWPLT-White
	9011969	Two Gang PDL SWPLT-White

Wiring for one motor and one designer switch

NOTICE: For installation by a qualified electrician in accordance with national and local electrical codes, and the following instructions.

CAUTION: RISK OF ELECTRICAL SHOCK. Disconnect power before installing. Never wire energized electrical components.

Select conductors having 90 C or higher rated insulation having sufficient ampacity in accordance with the 60 C column of National Electrical Code R Table 310-16 or Canadian Electrical Code Table 2

Terminal capacity: #14 AWG to #10 AWG

Strip conductors using strip gage on switch body. DO NOT USE TIN CONDUCTORS.

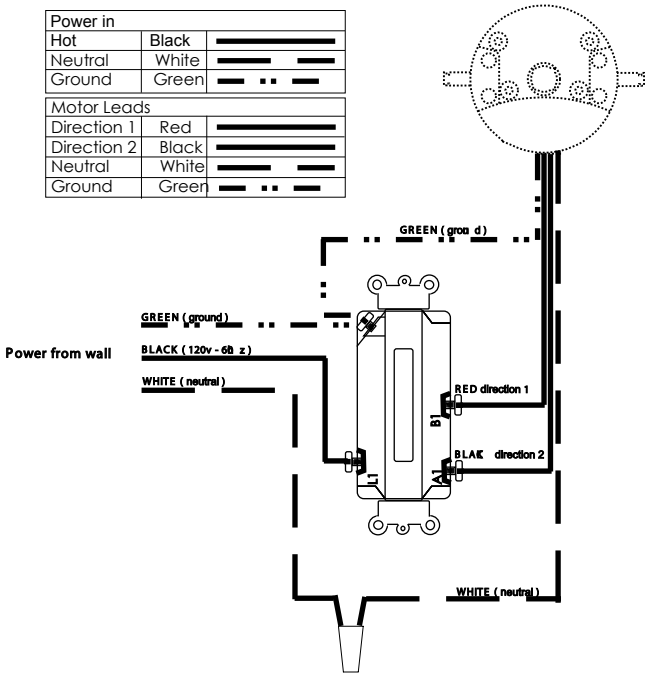
Warning

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 switch.

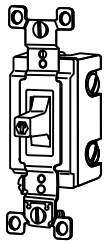
DO NOT connect two swt ches to an operator without a relay.

Power in	
Hot	Black
Neutral	White
Ground	Green

Motor Leads	
Direction 1	Red
Direction 2	Black
Neutral	White
Ground	Green



Operator
Electronic Controls
Toggle Switches

Items	Reference	Description
	**1800380** **1800382** **1800381** **1800383**	Maintained toggle switch - Ivory Momentary toggle switch - Ivory Maintained toggle switch - White Momentary toggle switch - White

Wiring for one motor and one toggle switch

NOTICE: For installation by a qualified electrician in accordance with national and local electrical codes, and the following instructions.

CAUTION: RISK OF ELECTRICAL SHOCK. Disconnect power before installing. Never wire energized electrical components.

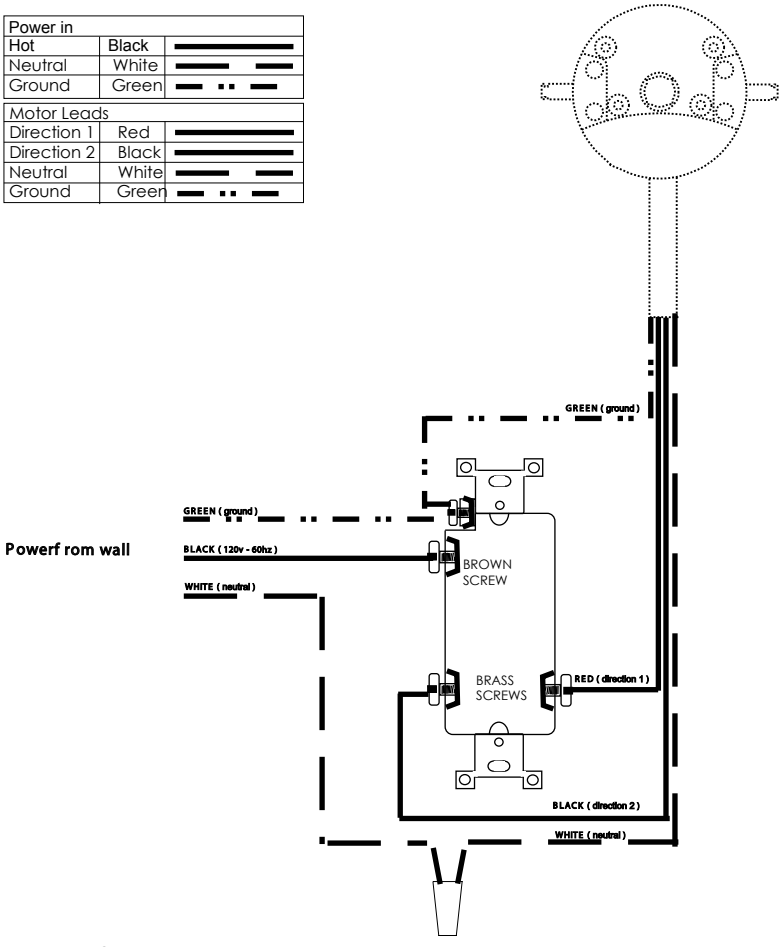
Select conductors having 90 C° or higher rated insulation having sufficient ampacity in accordance with the 60 C° column of National Electrical Code R Table 310-16 or Canadian Electrical Code Table 2

Terminal capacity: #14 AWG to #10 AWG

Strip conductors using strip gage on switch body. DO NOT USE TIN CONDUCTORS.

Power in		
Hot	Black	
Neutral	White	
Ground	Green	

Motor Leads		
Direction 1	Red	
Direction 2	Black	
Neutral	White	
Ground	Green	

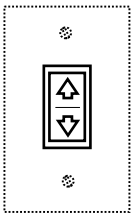
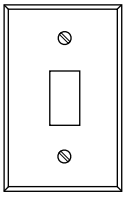


Warning

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 switch.

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

Operator
Electronic Controls
Rocker Switches

Items	Reference Switch Only	Reference Switch Kit	Description
	**2005598** **2005600**	**2005682** **2005684**	Rocker Switch - Single Pole, Double Throw (Maintained - White) Rocker Switch - Single Pole, Double Throw (Momentary - White) - Switch kit includes: switch, back plate, cover plate and mounting screws
Rocker Cover Plates 		**2005657** **2005662** **2005668**	Rocker Cover Plate Kit 1 Gang White Rocker Cover Plate Kit 2 Gang White Rocker Cover Plate Kit 3 Gang White -Includes cover plate, back plate and mounting screws.

Wiring for one motor and one rocker switch

NOTICE: For installation by a qualified electrician in accordance with national and local electrical codes, and the following instructions.

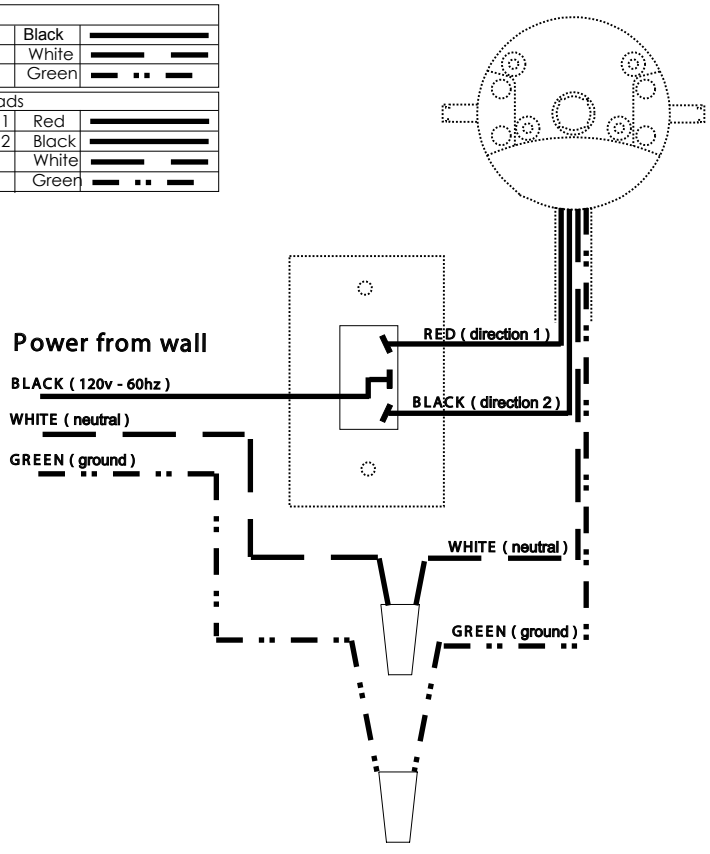
CAUTION: RISK OF ELECTRICAL SHOCK. Disconnect power before installing. Never wire energized electrical components.

Select conductors having 90 C or higher rated insulation having sufficient ampacity in accordance with the 60 C column of National Electrical Code R Table 310-16 or Canadian Electrical Code Table 2

Terminal capacity: #14 AWG to #10 AWG

Strip conductors using strip gage on switch body. DO NOT USE TIN CONDUCTORS.

Power in		
Hot	Black	
Neutral	White	
Ground	Green	
Motor Leads		
Direction 1	Red	
Direction 2	Black	
Neutral	White	
Ground	Green	

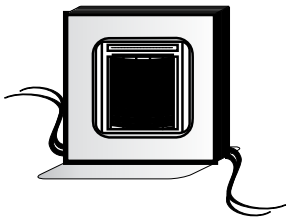


Warning

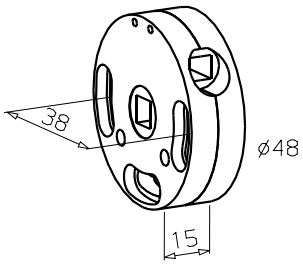
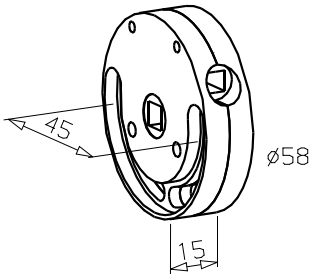
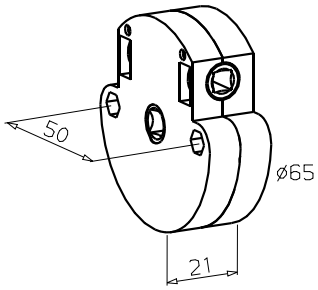
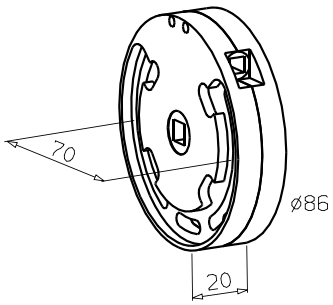
DO NOT wire more than one operator to a single pole switch. A second operator can be wired to the second pole of a double pole switch.

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

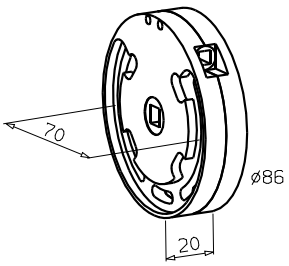
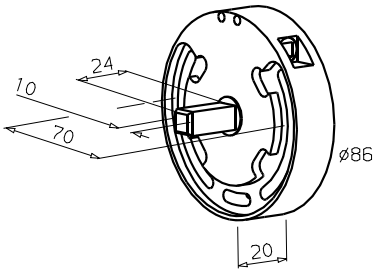
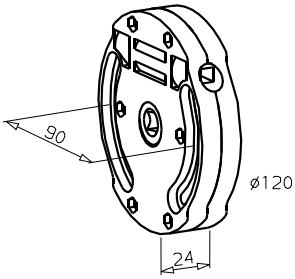
Operator
Electronic Controls
Transformers and Motor Cable

Items	Reference	Description
Transformers 	**2005968**	HARDWIRE - 6 AMP - 12 VOLTS
	2005647	HARDWIRE - 8 AMP - 12 VOLTS
	2005637	HARDWIRE - 10 AMP - 12 VOLTS
	2005604	HARDWIRE - 6 AMP - 24 VOLTS
	2005605	HARDWIRE - 8 AMP - 24 VOLTS
	2005639	HARDWIRE - 10 AMP - 24 VOLTS
	2005641	HARDWIRE - 12 AMP - 24 VOLTS
	9128097	3 CONDUCTORS PLUS GROUND (white)
	2005749	3 CONDUCTORS PLUS GROUND (gray)

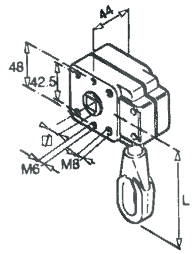
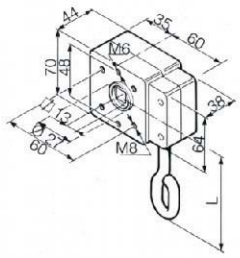
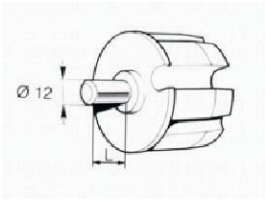
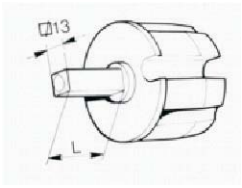
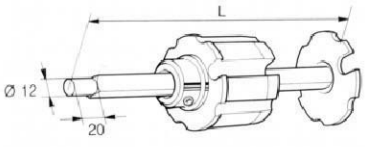
Manual Accessories
Shade System
Gears

Item	Reference	Description
Series 1415 Mini 	**2002436** **2002444**	Gear Ratio 1.5/1, input square 6mm, output square 7mm, Max. load 9 lbs. Gear Ratio 2.8/1, input square 6mm, output square 7mm, Max. load 15 lbs. - Aluminum zamic outside casing - Hardened steel inside worm gear - Above gears have no limit stops. - All dimensions are in millimeters. - Above load data is based on 40mm roller tube.
Series 1415 	**2002453** **2002459** **2002466**	Gear Ratio 1.7/1, input square 6mm, output square 7mm, Max. load 10 lbs. Gear Ratio 2.8/1, input square 6mm, output square 7mm, Max. load 15 lbs. Gear Ratio 4/1, input square 6mm, output square 7mm, Max. load 20 lbs. - Aluminum zamic outside casing - Hardened steel inside worm gear - Above gears have no limit stops. - All dimensions are in millimeters. - Above load data is based on 40mm roller tube.
Series 1421 	**2002421** **2002422** **2002427** **2002428**	Gear Ratio 3/1, input square 6mm, output square 7mm, Max. load 15 lbs. Gear Ratio 5/1, input square 6mm, output square 7mm, Max. load 21 lbs. Gear Ratio 3/1, input square 6mm, output square 7mm, Max. load 15 lbs. no stops Gear Ratio 5/1, input square 6mm, output square 7mm, Max. load 21 lbs. no stops - Aluminum zamic outside casing - Hardened steel inside worm gear - Capacity 18 turns with limit stops. - All dimensions are in millimeters. - Above load data is based on 40mm roller tube.
Series 1420 	**2002010** **2002013** **2002016** **2002037**	Gear Ratio 5/1, input square 6mm, output square 7mm, Max. load 44 lbs. Gear Ratio 5/1, input hex 6mm, output square 7mm, Max. load 44 lbs. Gear Ratio 5/1, input hex 7mm, output square 7mm, Max. load 44 lbs. Gear Ratio 7/1, input hex 6mm, output square 7mm, Max. load 55 lbs. no stops - Aluminum zamic outside casing - Hardened steel inside worm gear - Capacity 17 turns with limit stops. - All dimensions are in millimeters. - Above load data is based on 40mm roller tube.

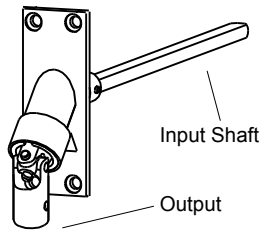
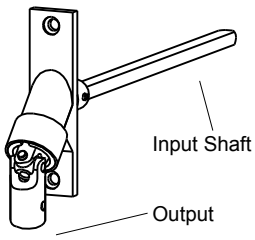
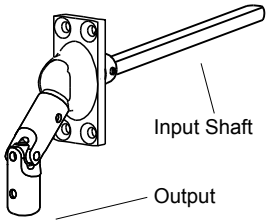
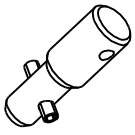
Manual Accessories
Shutter System
Gears

Item	Reference	Description
Series 1420 	**2002018** **2002035**	Gear Ratio 5/1, input hex 7mm, output square 10mm, Max. load 33 lbs. Gear Ratio 7/1, input hex 7mm, output square 10mm, Max. load 44 lbs. - Aluminum zamic outside casing - Hardened steel inside worm gear - Capacity 17 turns with limit stops. - All dimensions are in millimeters. - Above load data is based on 60mm roller tube.
Series 1420M 	**2002030** **2002041**	Gear Ratio 5/1, input hex 7mm, male output square 10mm, Max. load 33 lbs. Gear Ratio 7/1, input hex 7mm, male output square 10mm, Max. load 44 lbs. - Aluminum zamic outside casing - Hardened steel inside worm gear - Capacity 17 turns with limit stops. - All dimensions are in millimeters. - Above load data is based on 60mm roller tube.
Series 1424 	**2002139** **2002142** **2002140** **2002144** **2004051** **2002146**	Gear Ratio 5/1, input hex 7mm, output square 10mm, Max. load 28 lbs. Gear Ratio 5/1, input hex 7mm, output square 16mm, Max. load 28 lbs. Gear Ratio 8/1, input hex 7mm, output square 10mm, Max. load 46 lbs. Gear Ratio 8/1, input hex 7mm, output square 16mm, Max. load 46 lbs. Gear Ratio 11/1, input hex 7mm, output square 10mm, Max. load 56 lbs. Gear Ratio 11/1, input hex 7mm, output square 16mm, Max. load 56 lbs. - Nylon composite outside casing - Hardened steel inside worm gear - Capacity 16 turns with limit stops. - All dimensions are in millimeters. - Above load data is based on 70mm roller tube.
	2002391 **2002392**	Sleeve Connector for 1424 Gear Series -Square 16mm x 16mm -Square 16mm x 13mm

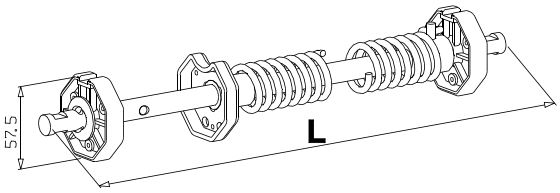
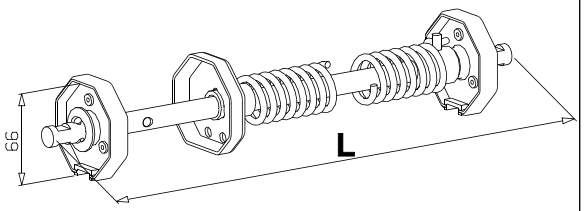
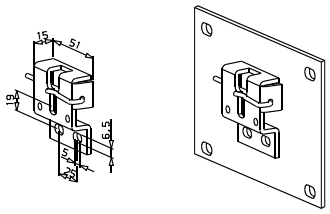
Manual Accessories
Awning System
Gears, Idle and Gear Inserts

Item	Reference	Description
	**2001721**	Gear Ratio 7/1, output 13mm - Aluminum zamic outside casing - Hardened steel inside worm gear - Nylon eye or zinc plated steel eye - All dimensions are in millimeters.
	**2001710**	Gear Ratio 12/1, output 13mm - Aluminum zamic outside casing - Hardened steel inside worm gear - Nylon eye or zinc plated steel eye - All dimensions are in millimeters.
	**2003506** **2003507** **2003508**	Idle Insert 60mm L=20mm 70mm L=20mm 78mm L=20mm -Nylon Composite -12mm Zinc Plated Round Steel Pin
	**2003509** **2003512** **2003516**	Gear Insert 60mm L=37mm 70mm L=37mm 78mm L=37mm - Nylon Composite -13mm Zinc Plated Square Steel Pin
	**2003385**	Adjustable Idle Insert 85mm L=200mm -Nylon Composite -12mm Zinc Plated Round Steel Pin

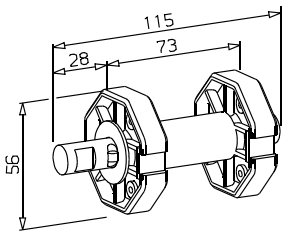
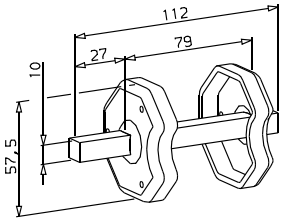
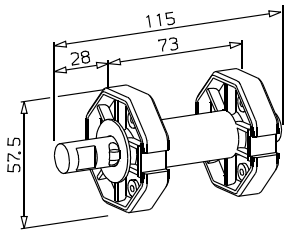
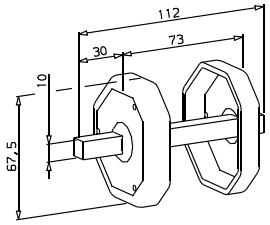
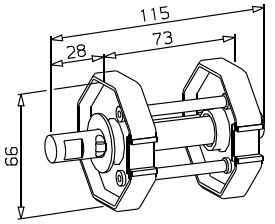
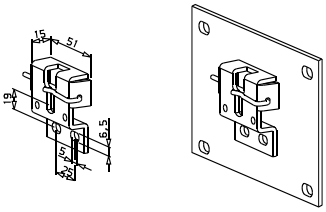
Manual Accessories
Shutter System
Universals

Item	Reference	Description
4 Hole 90 Degree 	**2004125** **2004124** **2004123** **2004122**	Universal 4 hole - 8mm square shaft, stainless steel joint Universal 4 hole - 7mm hex shaft, stainless steel joint Universal 4 hole - 8mm square shaft, nickel joint Universal 4 hole - 7mm hex shaft, nickel joint - Zinc plated, hardened steel shaft - Shaft length 500mm - Output area 14mm - Adaptable to fixed handle or removable pivot - For interior use only
2 Hole 90 Degree 	**2004121** **2004120** **2004119** **2004118**	Universal 2 hole - 8mm square shaft, stainless steel joint Universal 2 hole - 7mm hex shaft, stainless steel joint Universal 2 hole - 8mm square shaft, nickel joint Universal 2 hole - 7mm hex shaft, nickel joint - Zinc plated, hardened steel shaft - Shaft length 500mm - Output area 14mm - Adaptable to fixed handle or removable pivot - For interior use only
4 Hole 70 Degree 	**2004117** **2004116**	Universal 4 hole - 8mm square shaft Universal 4 hole - 7mm hex shaft - Stainless steel outside casing - Zinc plated, hardened steel shaft - Shaft length 500mm - Output area 14mm - Adaptable to fixed handle or removable pivot - For interior use only
	**2001775**	**Universal Pivot** - Stainless Steel - 13.9mm Universal Input

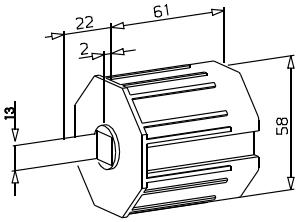
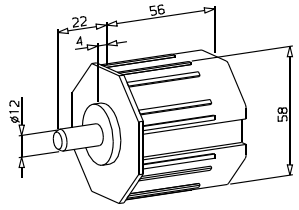
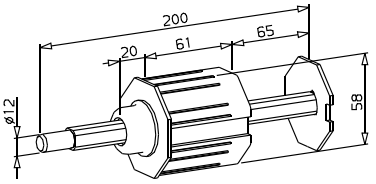
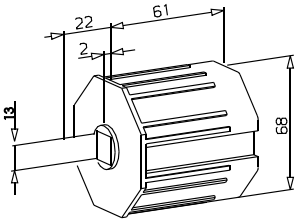
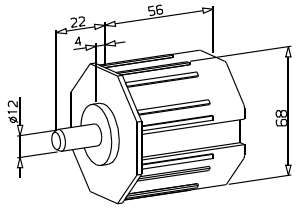
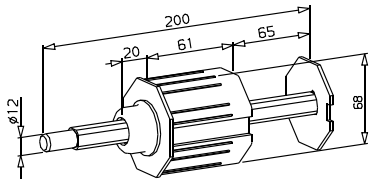
Manual Accessories
Rolling Shutter System
Balance Springs and Supports

Item	Reference	Description
	**2002369**	**Balance spring 60mm** - Nylon idle bearings - Zinc plated steel drive - Torque 44 lbs. - Max. rotations 9 - Length 770mm - All dimensions are in millimeters. - Above load data is based on 60mm roller tube.
	**2002372**	**Balance spring 70mm** - Nylon idle bearings - Zinc plated steel drive - Torque 66 lbs. - Max. rotations 11 - Length 1010mm - All dimensions are in millimeters. - Above load data is based on 70mm roller tube.
	**2003617** **2003638**	**Spring and Idle Supports** Support for balance springs: 2002314, 2002369, 2002372 Support for idle inserts: 2003583, 2003592, 2003560 - Galvanize Plating Same as above with a 100x100mm mounted plate - Zinc Plated

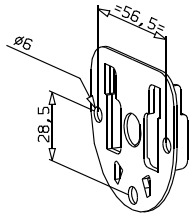
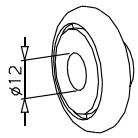
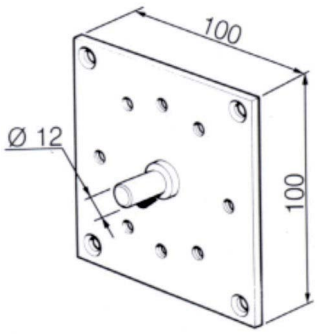
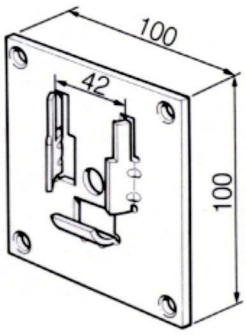
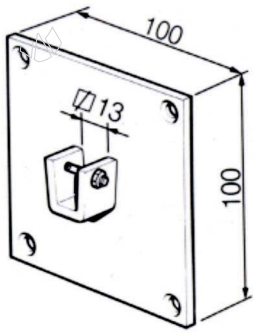
Manual Accessories
Shutter System
Idle and Gear Inserts

Item	Reference	Description
	**2003583**	**60mm Idle Insert** - Black nylon rings
	**2002376**	**60mm Gear Insert** - 10mm output shaft - Black Zinc Plating
	**2003592**	**60mm Idle Insert** - Gray nylon rings
	**2002374**	**70mm Gear Insert** - 10mm output shaft - Black Zinc Plating
	**2003560**	**70mm Idle Insert** - Black nylon rings
	**2003617** **2003638**	**Spring and Idle Supports** - Support for balance springs: 2002314, 2002369, 2002372 - Support for idle inserts: 2003583, 2003592, 2003560 Galvanize Plating - Same as above with a 100x100mm mounted plate, Zinc Plated

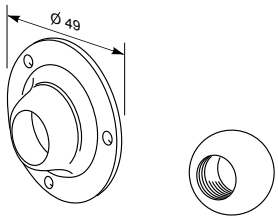
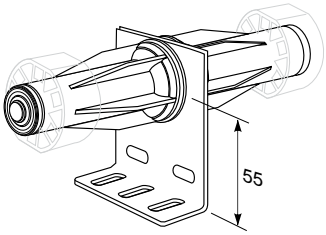
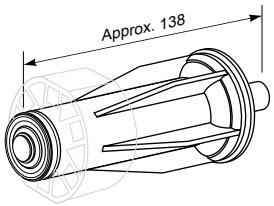
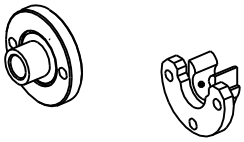
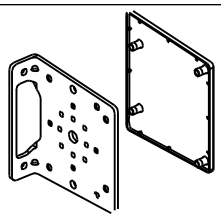
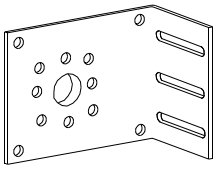
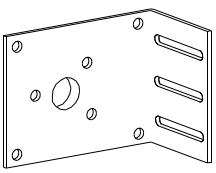
Manual Accessories
Shutter System
Idle and Gear Inserts

Item	Reference	Description
	**2003534** **2003467**	**60mm Gear Insert** - 13mm square input - Black composite - Cast aluminum
	**2003535**	**60mm Idle Insert** - 12mm zinc plated steel output shaft - Black composite
	**2003389** **2005465**	**60mm Adjustable Idle Insert** - 12mm zinc plated steel output shaft - Black composite - Cast aluminum
	**2003468**	**70mm Gear Insert** - 13mm square input - Cast aluminum
	**2003470**	**70mm Idle Insert** - 12mm zinc plated steel output shaft - Cast aluminum
	**2003390** **2003471**	**70mm Adjustable Idle Insert** - 12mm zinc plated steel output shaft - Black composite - Cast aluminum

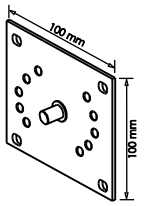
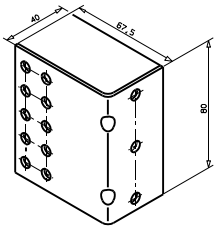
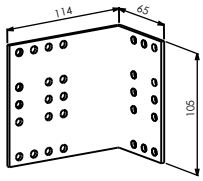
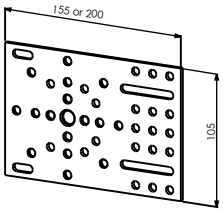
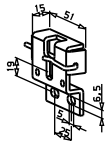
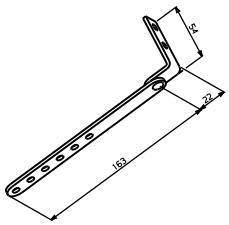
Manual Accessories
Shutter Miscellaneous

Item	Reference	Description
	**2003442**	**Idle Support** - Fits 42mm bearings: 2003448 and 2003447 - Galvanized steel
	**2003448** **2003447**	**Idle Bearings** - 42mm bearing, 12mm center hole, nylon bushing - 42mm bearing, 12mm center hole, steel bushing
	**2002645** **2006856**	**Simbac Gear Plate for Standard End Cap** - Galvanized steel - no threads - Galvanized steel - with threaded holes
	**2002644**	**Idle Bearing Plate for Standard End Cap** - Galvanized steel for ball bearing ø42mm
	**2002646**	**Plate for Standard End Cap** - For assist springs

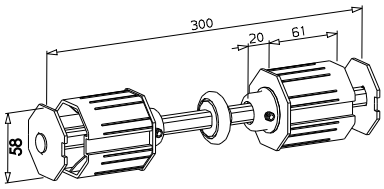
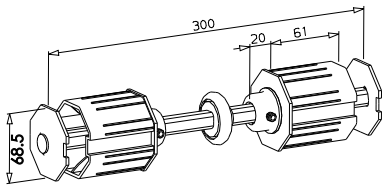
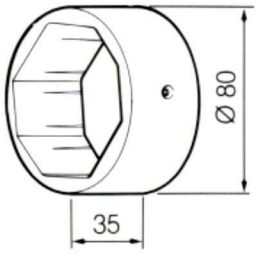
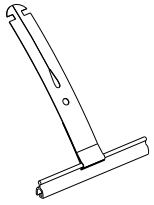
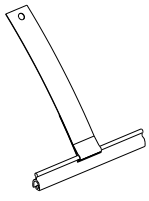
Manual Accessories
Shade / Shutter System
Miscellaneous

Item	Reference	Description
		**Shade Idle Support**
	1781030	- Ball support, Zinc Plated Steel
	9410803	- Nylon ball, 10mm hole Use with idle insert: 9420800
	9028665	- Nylon ball, 12mm hole Use with idle insert: 9420801
	**2005700**	**Shade Double Reel Insert** - 2 inch double shade insert
		**Adjustable Idle Insert for Shades**
	9420800	- 50mm idle insert with a 10mm spring loaded shaft
	9420801	- 50mm idle insert with a 12mm spring loaded shaft
		**Idle Insert Bearings**
	2003600	- Steel bearing for idle insert: 2003939
	2003599	- Nylon U bearing for idle insert:2003939 or 9420800
	**2003677**	**Shade Bracket**, Aluminum
	2003683	White bracket cover
	2003684	Gray bracket cover
	**2003643**	**Shade Bracket** - Motor side shade bracket, Black Zinc - For use with Type 5 motors
	**2005609**	**Shade Bracket** - Idle side shade bracket, Black Zinc - For use with idle support with ball: 9410803 and 9028665

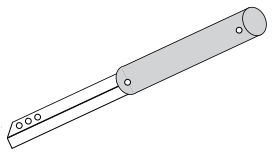
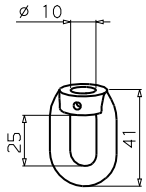
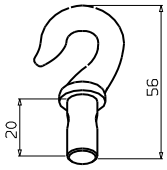
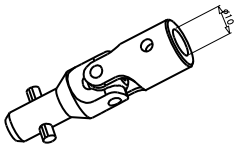
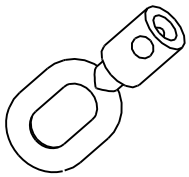
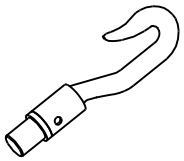
Manual Accessories
Shutter System
Miscellaneous

Item	Reference	Description
	**2003639**	**Shutter Gear Plate** - 100x100mm side frame plate, with center pivot pin - For use with 1424 series gears - Zinc Plated
	**2003622**	**Shutter Bracket** - Small wall angle bracket - For use with wall plate: 2003611 or 2003612 - Galvanized
	**2003623**	**Heavy Duty Shutter Bracket** - Large wall angle bracket - For use with wall plate: 2003611 or 2003612 - Galvanized
	**2003611** **2003612**	**Wall Bracket Extension Plate** - Small extension plate, use with 2003622 or 2003623 - Large extension plate, use only with 2003623 - Both plates are Galvanized
	**2003617**	**Idle / Spring Support** - Support for extension plates: 2003611 or 2003612 - Galvanized
	**2003616**	**Idle Insert Bearings** - Upper support for extension plates: 2003611 or 2003612

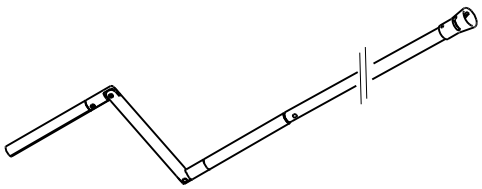
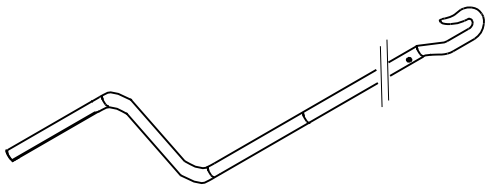
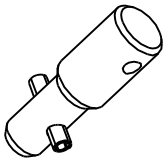
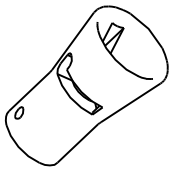
Manual Accessories
Shutter System
Miscellaneous

Item	Reference	Description
	**2003391** **2005466**	**Shutter Double Reel Insert** - 60mm double shutter insert, black composite - 60mm double shutter insert, cast aluminum
	**2003392** **2005467**	**Shutter Double Reel Insert** - 70mm double shutter insert, black composite - 70mm double shutter insert, cast aluminum
	**2003500** **2003501**	**Plastic Adaptor Ring** - 60mm oct - 70mm oct
	**2003352** **2003354** **2003358**	**Slat Hanger Clip Attachment** - L=130mm - mini - L=170mm - mini - L=190mm - maxi
	**2003361** **2003362** **2003349**	**Slat Hanger Screw Attachment** - L=130mm - mini - L=170mm - mini - L=190mm - maxi

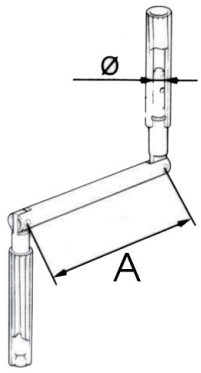
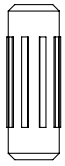
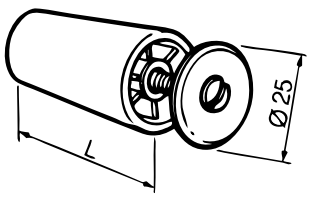
Manual Accessories
Shade / Shutter System
Miscellaneous

Item	Reference	Description
	**2002508**	**Shade Gear Down Shaft** - 10mm round, 6mm square, L= 50mm - Zinc Plated Steel
	**2002499**	**Shade Down Shaft Eye** - For use with: 2002508 - Zinc Plated Steel
	**2002497**	**Shade Handle Hook** - Zinc Plated Steel
	**2005960**	**Shade Universal Pivot** - For use with: 2002508 - Chrome Plated Steel
	**2002253**	**Large Eye** - Zinc Plated Steel - 10mm Input
	**2002148**	**Large Hook For Handle** - Zinc Plated Steel

Manual Accessories
Shutter System
Miscellaneous

Item	Reference	Description
	**2004182**	**Assembled Shutter Handle With Bell** - Gray - 1.5 meter total length - Other sizes available. Consult a Simu representative for details.
	**2001892** **2001895**	**Assembled Awning Handle With Hook** - White 1.5 meter total length - White 2.0 meter total length - Other sizes available. Consult a Simu representative for details.
	**2001775**	**Universal Pivot** - Stainless Steel - 13.9mm Universal Input
	**2001776**	**Bell For Handle** - Chrome Plated Steel - 14mm Tube Input
	2004173	**Handle Tube** - Anodized Aluminum - 6 m

Manual Accessories
Shutter System
Miscellaneous

Item	Reference	Description
	**2004166**	**Handle** - Stainless steel with gray plastic hand grips - For use with handle tube 2004173
	**2003341** **2003342** **2005400**	**Roll pins** - 14mm - 18mm - 20mm
	50037770	**Screw** - M4 x 20 Screw for universal joints
	**2003491** **2003492**	White Plastic bottom stop with SS screw. Length = 40mm Grey Plastic bottom stop with SS screw. Length = 40mm

Notes

Motors:

Adaptors:

Brackets:

Switches:

Electronic Controls:

Miscellaneous: