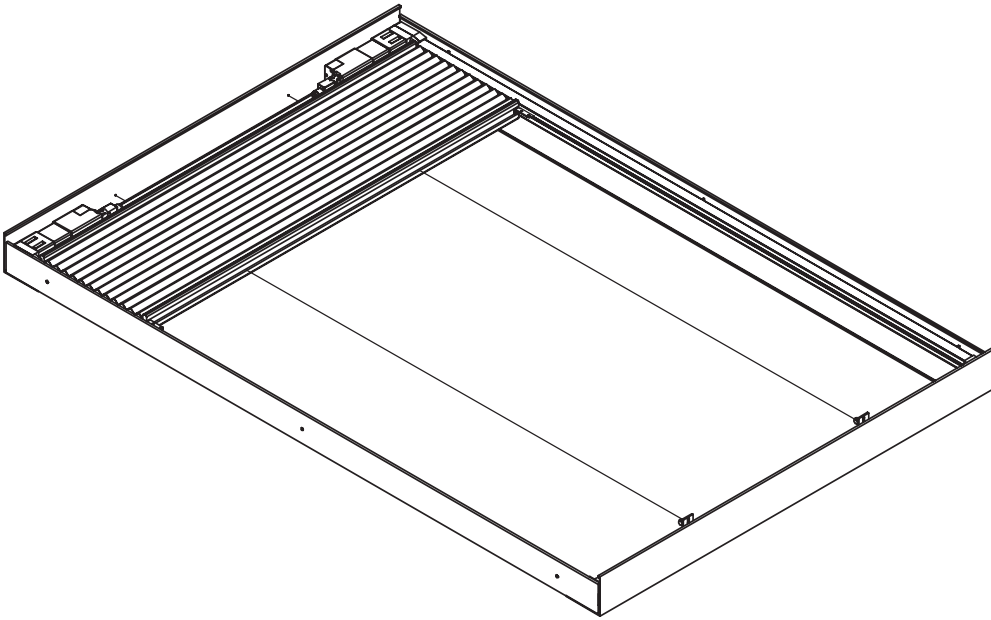


BTXTM

Automated Shading Systems
for Skylights and Inclines



Shading System 5070
Installation Instructions

Shading System 5070

Table of Contents

Tools Required:

- Power Screwdriver
w/Phillips bit
- Screws & Anchors
- Needle Nose Pliers
- Wire Cutters
- Flathead Screwdriver
- Small Phillips
- Small Flathead
- Test Cable
- Hacksaw (only used for
cutting down track)
- Crimp Tool

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ATTENTION INSTALLERS!

BTX motorized systems are high dollar products. All BTX product has been designed with exacting tolerances. Installation must be done with great care and precision. All headrails must be mounted onto firm supports. Support spacing instructions must be adhered to. Tracks must be aligned properly. Tracks may not be bent or forced into position. Electrical connections must be made by licensed electricians.

Introduction

The System

The BTX 5070 shading system has been designed for easy installation and for maximum shade effectiveness. The system is modular for maximum flexibility to cover a vast array of skylight and inclined openings. The modular concept permits spanning of openings up to 20 ft. in travel length in “singular” configuration. The overall width of skylight openings that can be covered by a single system is considerable. System width can be up to 12 ft. or more depending on the factors such as:

- Weight of the shade material
- Number of tension support wires to be used
- Angle of incline of shade (from horizontal to vertical)

Installation

The primary structural elements of the system 5070 are:

- The upper and lower end supports
- The longitudinal track mounting supports.

Depending on the site conditions the flanges of the supports must be attached either directly or by means of brackets to solid members that line the length and width of the skylight or inclined opening and are capable of carrying the load of the system.

The bottom flanges cover the hardware view from below, close the light gap between fabric and hardware, and serve as secondary side support.

The unique BTX synchronous motors permit combination of various motors to operate in perfect sync. All systems are custom-built to specification. To ensure correct motor and structural parameters, contact factory with job details and dimensions.

Maintenance Friendly

The Motorized Shading System 5070 has been designed for virtually maintenance free operation. To prevent incidental interference due to outside influences, annual system inspection is recommended to ensure appropriate on-going operation. At that time the following should be inspected:

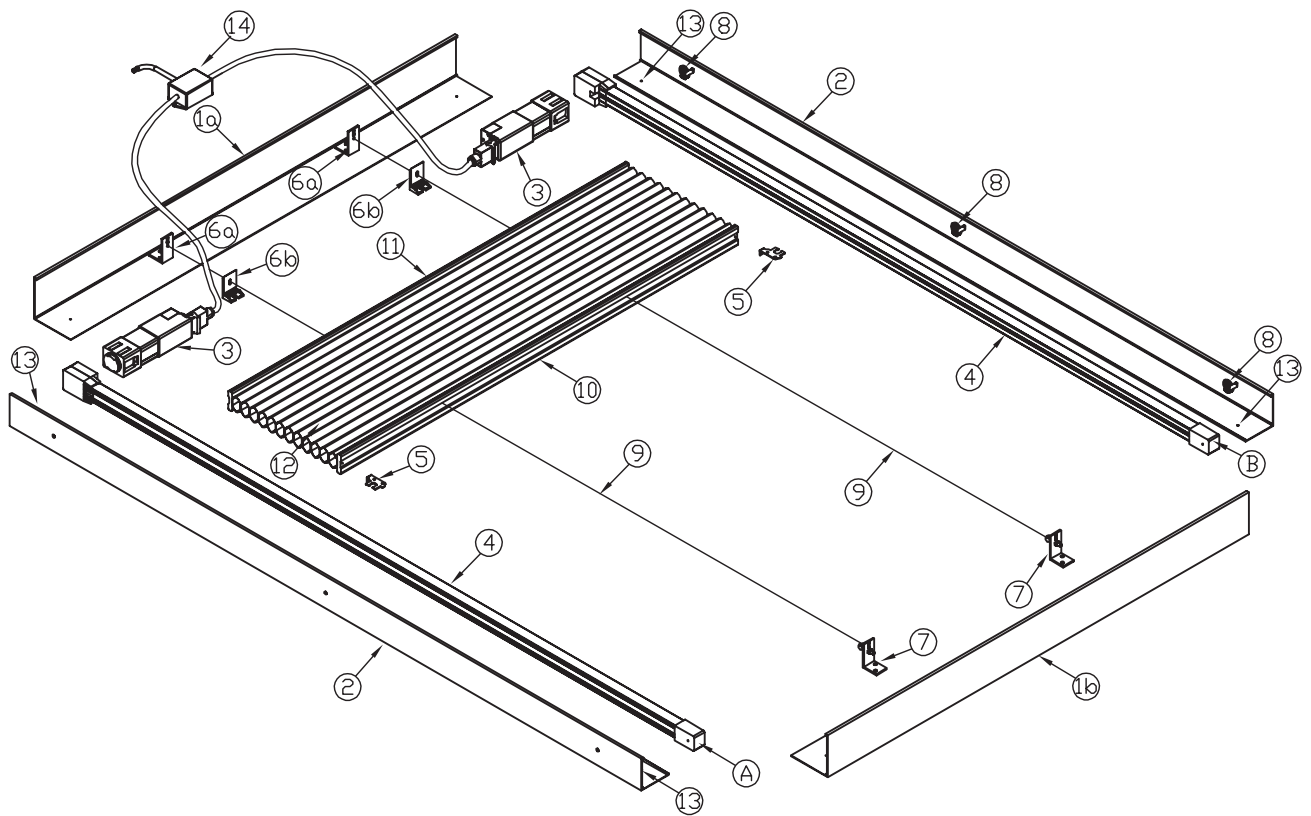
1. The track should automatically shut off at the fully opened and fully closed position.
2. The master carriers should move smoothly throughout the system with no jamming or dragging.
3. The end pulleys and splice locations should be visually inspected for residue such as dust or other objects. Such residue may indicate improper alignment.
4. If lubrication is required, the belt, carrier wheels and end pulley should be lubricated with a high quality clear silicon.

Controls

BTX shading systems can be controlled centrally, individually or in groups as specified. BTX offers custom control systems to meet virtually all customer required configurations.

Carefully read the following pages prior to installation!

5070 Components List



- 1a Upper End Support
- 1b Lower End Support
- 2 Track Mounting Support
- 3 30 W Tandem Motors
- 4 5070 Track System
- 5 Master Carrier
- 6a Upperwire Mounting Brackets
- 6b Upper Fabric Mounting Brackets
- 7 Lower Mounting Bracket with Cable Tensioner
- 8 Track Mounting Clip
- 9 Guide Cable
- 10 Fabric Lower Guide Bar
- 11 Fabric Upper Guide Bar
- 12 Shade Material
- 13 Assembly Bolt (4 each)
- 14 Tandem Wiring Harness

Shade Fabric Installation

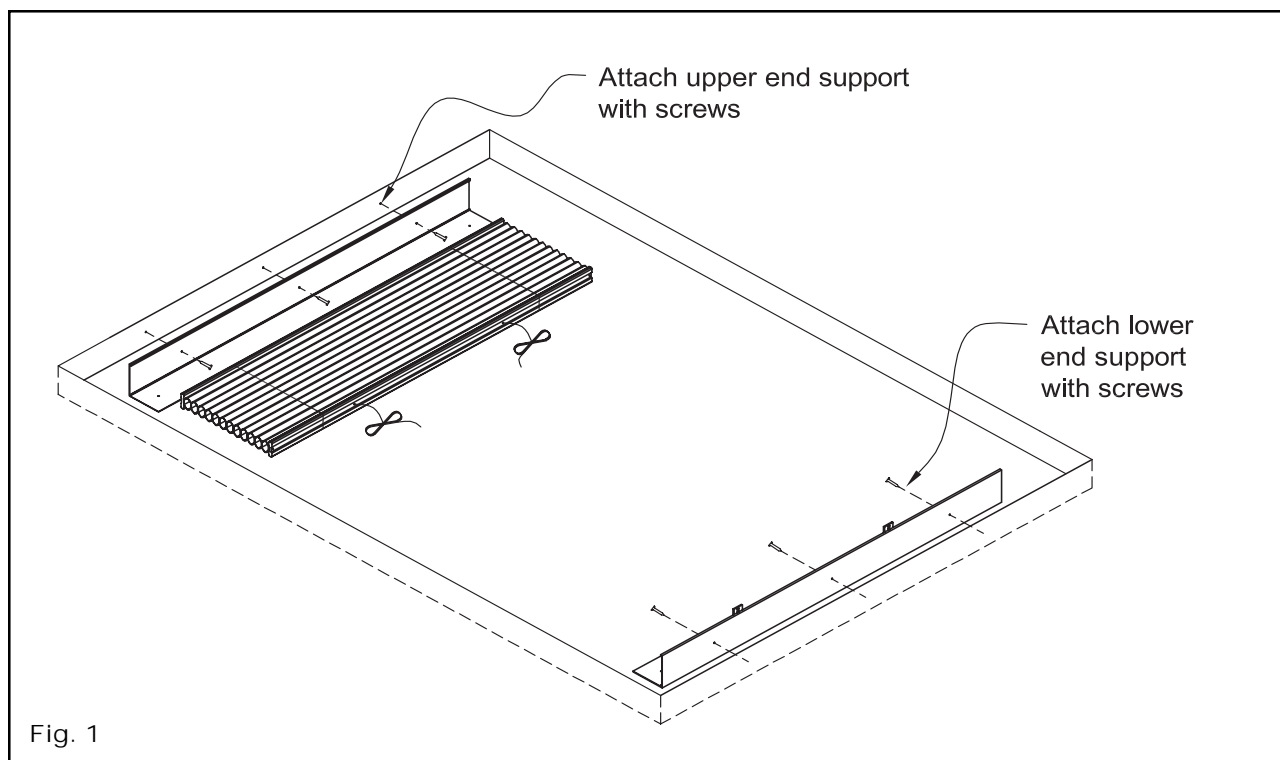
Depending on customer's preference the BTX 5070 Skylight system may be ordered and will be supplied:

- a. With COM shade material attached to upper end support by BTX.
For this option, follow installation guidelines on next page.
- b. Hardware only, without shade material. For this option, first follow the fabric installation below, then follow installation guidelines on the next page.

If fabric is already installed, skip this next section and proceed to page 6.

Fabric materials must be provided to specified system size. Fabrics must be provided with route holes to accept tension wires. For horizontal and inclined shades, the recommended route hole spacing is max. 12 inches from the side of shade left and right, and max 24 inches between tension wires.

1. After fabric inspection, carefully position wire mounting brackets onto upper end support. Make sure they align properly with route holes. Install brackets.
2. Feed each tension cable through wire mounting bracket and through proper fabric route holes.
3. Install fabric mounting brackets (for cellular and pleated shades) onto end support. Snap shade headrail into brackets.
4. Tie off shade and fabric as shown in **Fig. 1**
5. Follow system installation guidelines.

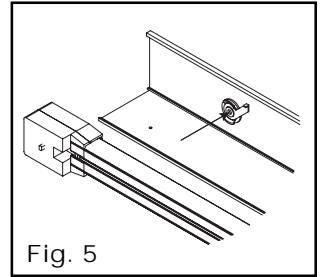
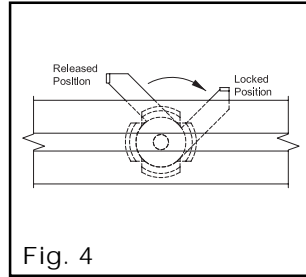
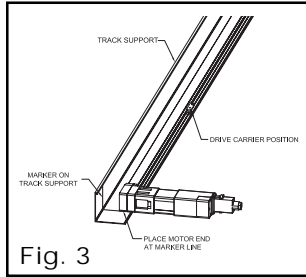
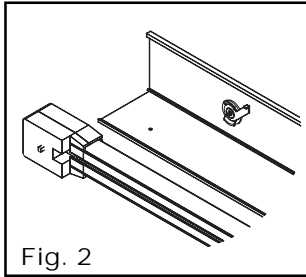


Installing the 5070

1. Install upper end support (motor side). Install lower end support on opposite side.

***For Steps 2-5, pre-assemble parts on the floor before mounting up in skylights. ***

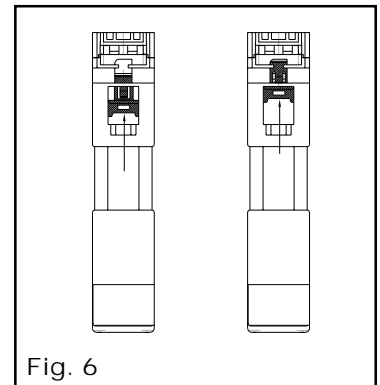
2. Install 5070 track system onto track mounting support using mounting clips. **(Fig. 2)** Line end of track as shown in **Fig. 3**. Turn clips tight as shown in **Fig. 4**. If clips are loose, tighten screw **(Fig. 5)**.



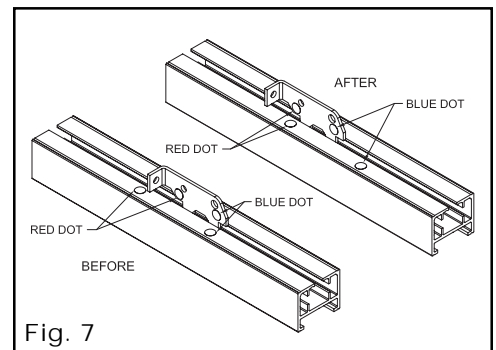
3. Install motors onto 5070 track system following the steps a-d below. Motor and track each have a label. Match the labels to ensure the correct motor is with its track.

Attach the drive motor to the track as follows:

- a. Align blue dot on master carrier with blue dot on headrail.
- b. Install motor, aligning blue dot on motor with blue dot on gear housing.
- c. Rotate motor, aligning red dot on motor with red dot on gear housing. Push motor locking clip into gear housing. (Fig. 6) Make sure clip is completely depressed!
- d. Motor is properly installed when red dot on master carrier aligns with red dot on headrail.



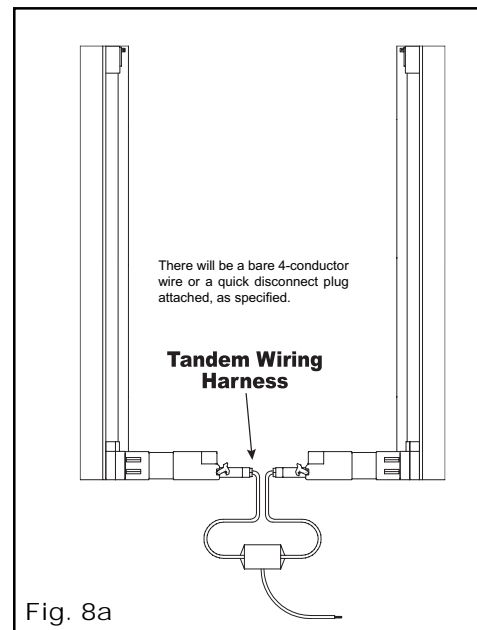
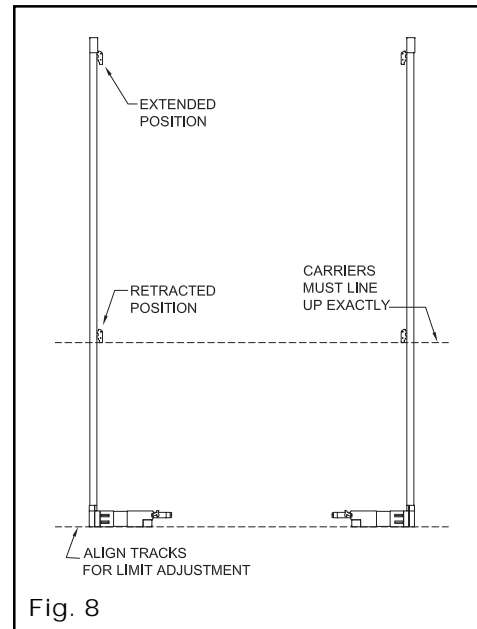
Follow same procedure to install second motor onto track B. Inspect position of the drive carrier. It needs to be lined up with dots on track **(Fig. 7)**.



Installing the 5070

Test run tracks

4. Align tracks on floor as shown in **Fig. 8**. To install the wiring harness (**Fig. 8a**), follow these next steps:
 - a. Identify the plugs by checking the labels on each plug. One plug will be marked “Drive Motor”; the other will be marked “Non-Drive Motor”. You will notice the wires from each plug running into a small black box where they form a junction. Do not remove this box! Exiting this box is a 4-conductor lead which is to be connected to the wiring coming from the control.
 - b. Identify the motors by checking the labels that are on the back of each motor. One motor will be marked with the label “Drive Motor”; the other will be marked “Non-Drive Motor”. If the motor labels are not visible, you can identify each motor by looking at the clear housing on the motor. The “Drive Motor” will have the limit switch assembly inside. The “Non-Drive” will look empty.
 - c. Plug the appropriate plugs into the corresponding motors. **NOTE: Tandem motors are designed to be operated simultaneously only. Do not run either motor individually, as this will cause the motors to get out of sync. It may damage the system and will void your warranty.**
5. Test run the system for proper operation by using your test cable. If end stops are correct, master carriers will stop at pre-determined end positions.
6. If carriers stop short -- see limit adjustment instructions on page 9. If carriers overrun end stop, motors will start shaking. Important! Immediately cut off electricity to avoid motor damage and follow limit setting instructions.



Installing the 5070

7. When limits are correct, disconnect wiring harness.
8. Place the assembly of track and track mounting onto end supports as shown in **Fig. 9**.
9. Position bolt and nut or rivot as shown in **Fig. 10** to lock track assembly onto end support and tighten.
10. Screw track support onto designated skylight side beam or mullion. (**Fig. 11**)

*** If wiring is already installed, skip steps 11 & 12 and proceed to step 13.**

11. Install tension brackets with tension loop onto lower end support as shown in (**Fig. 12**). Make sure tension loop is in fully extended position so that cable can be tensioned by tightening the tension nut.
12. Guide wire end through loop, firmly tighten wire, crimp off tightened wire.
13. Fully tension the cables by means of tightening tension nuts. (**Fig. 13**) **Do not over tension.**
14. Install wiring harness.
15. Connect test cable and verify system is operating properly.
16. Attach system to controls. Hardwiring must be done by a licensed electrician. Wire the 4-conductor or lead coming from the tandem harness to a J-box. For the plug-in option, just plug the male/female connector together and plug the 3-prong AC lead from the control into an outlet.

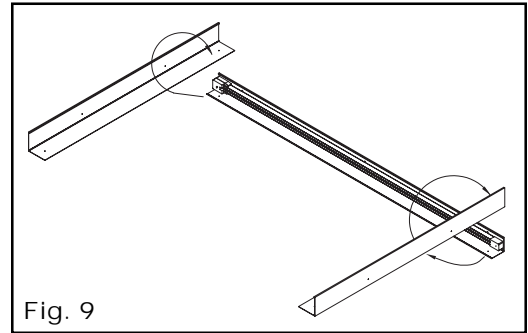


Fig. 9

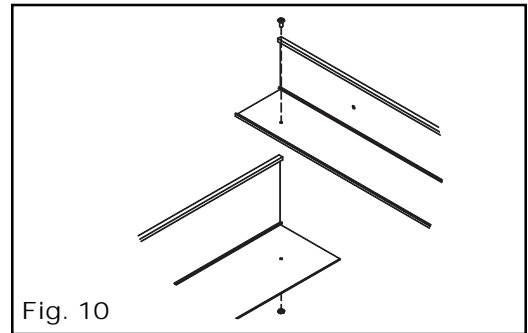


Fig. 10

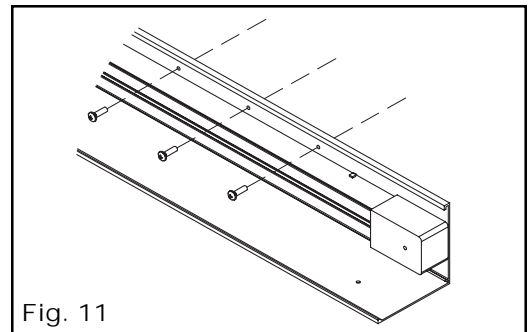


Fig. 11

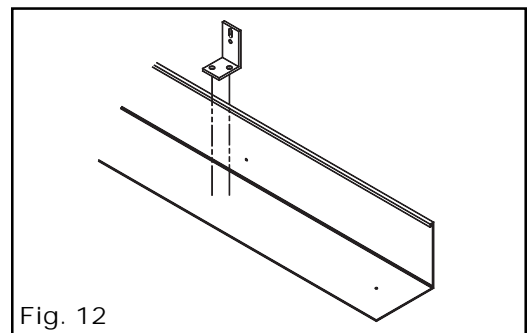


Fig. 12

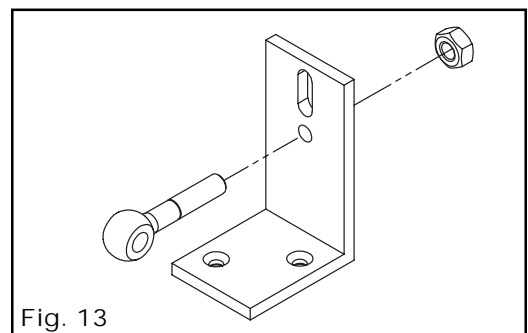
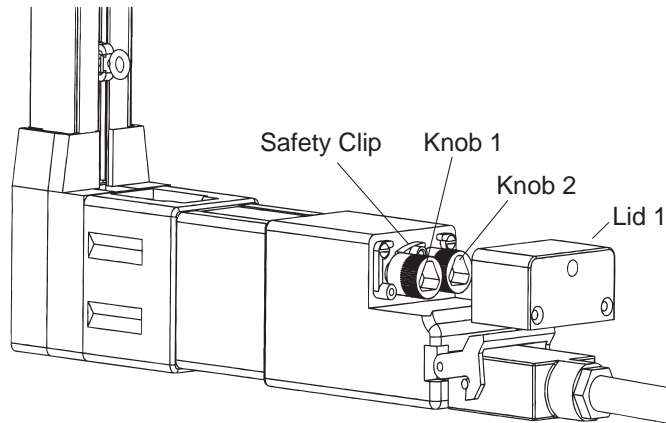


Fig. 13

Limit Adjustment Instructions

5070 Motor



The following instructions are intended for use where a minor adjustment of the limits is required to accommodate the stacking requirements of the fabric, or where the original size of the system has been altered in the field. For adjustments to be made, the motors must be running on the tracks, and a test cable should be used for this purpose.

1. All tracks and motors have been numbered at the factory prior to shipping. **Verify that the motor and track numbers match before you attempt to set the limits.** If track and motor are mismatched, it could result in the limit buttons controlling the function opposite to those for which they are labeled.
2. Install motor(s) on the appropriate track, and lock them into place. If track is a tandem motor system, attach drive motor and non-drive motor to track and plug in tandem wiring harness to motors. **Drive and non-drive motors, endcaps and plugs are labeled accordingly. Make certain they match up.**
3. Locate limit buttons inside lid 1 by removing three Phillips head screws. Tandem motor systems have limits on drive motors only. Limit buttons are marked for the function they control stack and close.
4. Run the track in the direction the adjustment needs to be made. At the same time, observe the direction that the limit button to be adjusted is turning. If buttons are not marked: Drive Motor Left - front button is the stack and the back button is the close. Drive Motor Right - front button is the close and the back button is the stack.
 - A. If the motor shuts off before reaching the intended location, push the safety clip to one side, push the limit knob in, and carefully turn it in the opposite direction. The motor should immediately begin to advance in the direction it was running before shutting off. When it reaches the correct stopping point, carefully pull the button out and lock it into place with the safety clip. Hand tighten a screw into safety clip to ensure limits will not loose their adjustment. Test run to verify that the limit is set.
 - B. In the event that the motor is running past where it should shut off, shut it off manually with the switch at the desired stopping point. Push the safety clip to one side and push in the limit button to be adjusted. Carefully turn the button in the same direction it was turning before being shut off. Watch and listen for the limit switch to drop into the recessed portion of the cams. When the limit switch can be seen engaging or makes an audible clicking sound, carefully pull the button out and lock it into place with the safety clip. Hand tighten a screw into safety clip to ensure limits will not adjust themselves. Test run to verify that the limit is set.

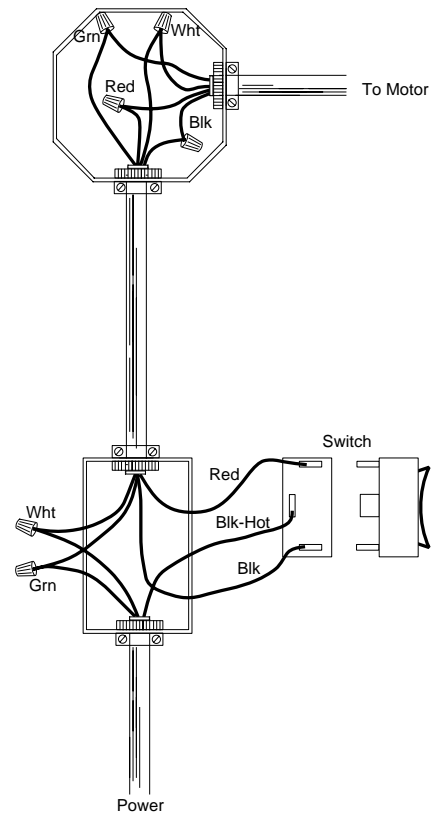
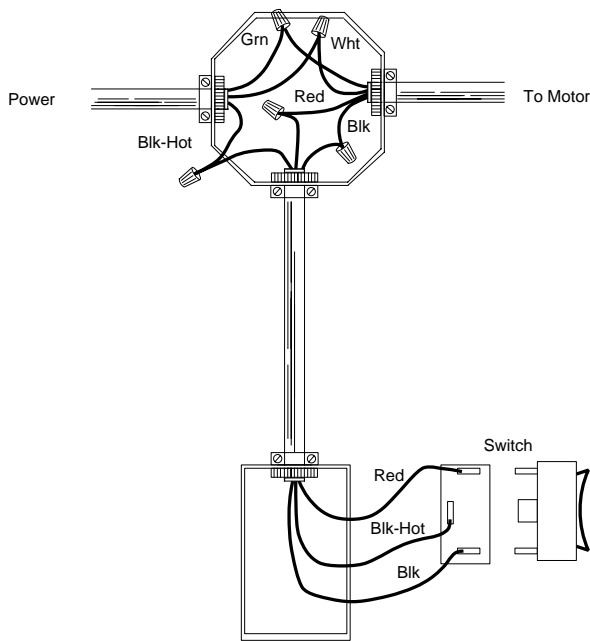
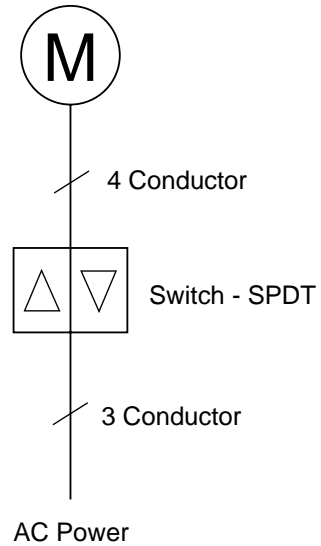
NOTE: When running a tandem motor system, power from the switch should be applied to the wiring harness supplied with the track not directly to the drive motor.

Basic Wiring - Switch

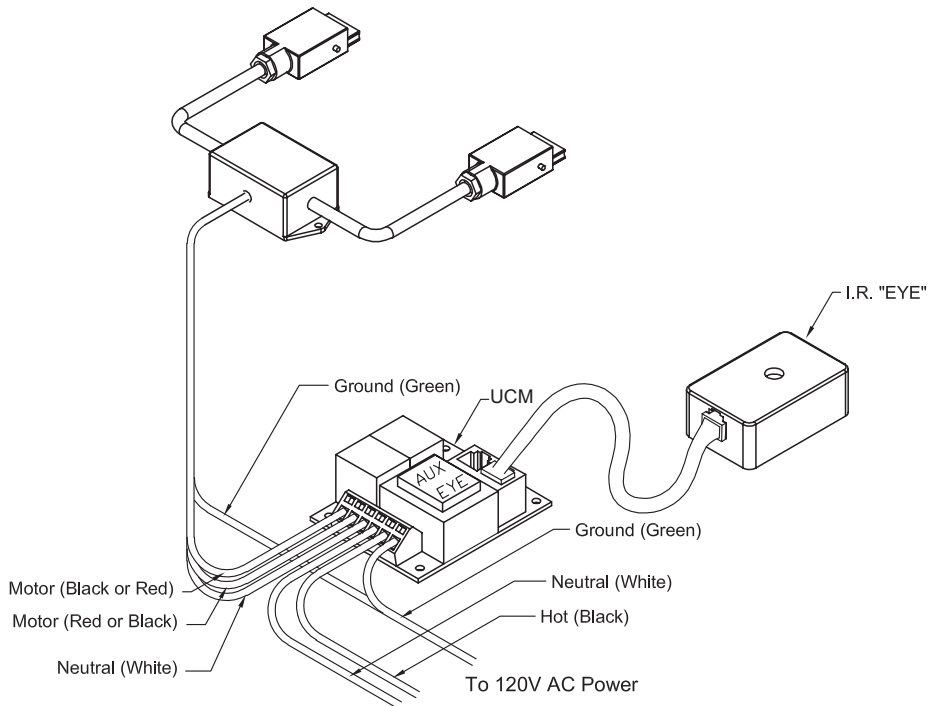
Switch Control Option

Illustrated here is the basic wiring diagram for the switch control option for the Motorized Shading System 5070.

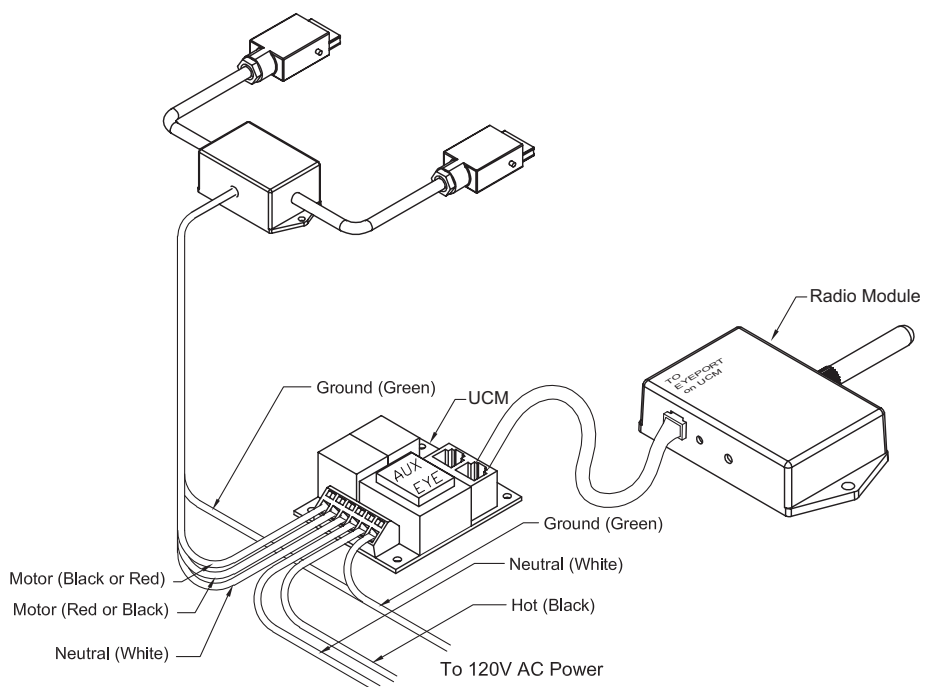
Caution! Do not wire motors in parallel!



Basic Wiring - Infrared Remote



Basic Wiring - Radio Remote



Warranty & Return Policy

1. Contract

All offers, quotes and sales by BTX Window Automation, Inc. (BTX) are subject to these Terms and Conditions of Sale. No other agreements have been made or will be valid unless expressly confirmed in writing by BTX.

2. ACCEPTANCE

BY TAKING DELIVERY OF BTX PRODUCTS, PURCHASER ASSENTS TO THE TERMS AND CONDITIONS STATED HEREIN, UNLESS OTHERWISE EXPRESSLY AGREED IN WRITING BY BTX. BTX HEREBY OBJECTS TO ANY DIFFERENT OR ADDITIONAL TERMS AND CONDITIONS WHICH MAY BE PROPOSED OR HAVE BEEN PROPOSED BY PURCHASER IN ANY PURCHASE ORDER FORMS OR OTHER DOCUMENTS. THE TERMS AND CONDITIONS STATED HEREIN SHALL PREVAIL OVER ANY DIFFERENT OR ADDITIONAL TERMS AND CONDITIONS PROPOSED BY PURCHASER AND SHALL APPLY TO THE SALE OR SHIPMENT OF ANY GOODS IN RESPONSE TO PURCHASER'S ORDER.

3. Prices and Delivery

All quoted prices are valid for a period of 60 days from the date of issue, unless otherwise agreed by BTX in writing. Prices on accepted orders remain firm for a period of four months from the date of order acceptance, provided final delivery occurs within that period. If delivery is to occur more than four months from the date of order acceptance, prices are subject to change in accordance with any changes in the published BTX price list which occur after the date of order acceptance. All prices quoted are FOB Dallas, excluding all freight, packaging and taxes. All delivery dates are approximate.

4. Payment Terms

(a) Open account payment terms may be established from time to time at the sole discretion of BTX, and are subject to credit approval in writing. Terms on open accounts are payment in full, net 30 days from date of invoice. Payment terms for single transactions and transactions other than on open account are net C.O.D. or prepay unless confirmed otherwise in writing by BTX.

(b) Amounts past due are subject to a finance charge of 1.5% per month to the legal limit, and the finance charge will apply without further prior notice. In case of purchaser's delinquency in payment or insolvency, BTX retains the right to halt or interrupt all further deliveries and service to the purchaser until all past due amounts have been paid, and to require payment in advance for orders not yet delivered, without any liability resulting for BTX. Purchaser expressly agrees to indemnify BTX and hold BTX harmless from all charges and liability which might arise in any manner from purchaser's nonpayment.

5. Inspection, Acceptance and Claims

All claims by purchaser against BTX for shortages must be made in writing to BTX within fourteen days from date of shipment from BTX's Dallas base or they are waived. Any claims for transport damage are the responsibility of the recipient and must therefore be filed with the carrier by the recipient.

6. Risk of Loss

Full risk of loss, damage or destruction of the goods shall pass to purchaser upon delivery of the goods to the carrier at the point of shipment or upon delivery at storage, whichever applies.

7. Force Majeure

If an order cannot be completed due to causes beyond BTX's control, BTX retains the right to either

cancel the uncompleted portion of the order or complete the order if and when this becomes possible. Purchaser shall not have the right to withhold payment on delivered goods and/or services, nor to unilaterally change the order or cancel same. Force majeure includes but is not limited to strikes, lock-outs, storms, floods and the like, terrorism, wars, revolutions, major equipment failures or fire damage at production facilities, etc.

8. Warranty

BTX extends a three-year limited warranty for its MotorDrape™ DC systems and controls. BTX warrants its other systems and 110/220V motors and hardware accessories against defects in material and workmanship for a period of five years from date of shipment from BTX's Dallas base; however, pull chains and cords for roller shades are excluded. BTX controls and electric and electronic components carry a one-year warranty against defects in material and workmanship from date of shipment from BTX's Dallas base. BTX does not warrant cords and tapes for lift systems, nor customer's own materials, and BTX disclaims any written, oral or implied warranties for such materials. If any item to which a warranty applies proves to be defective during the specified warranty period under normal and proper use and provided the equipment or part has been properly stored, installed and maintained with due regard to any directives, instructions and operating procedures provided, BTX shall, upon presentation of proof of purchase, repair or replace the item at the sole option of BTX, F.O.B. Dallas. Application of the warranty will be determined by BTX technical staff after return of the item, its inspection and any necessary investigation. This warranty does not apply in case of defects resulting from faulty installation, misuse, misapplication, abuse, mishandling, shipping or failure to follow instructions. This warranty does not cover any incidental, special or consequential damages, labor on location, service calls, reinstallation, or expenses involved in shipping, packing, and returning the goods. It also does not cover damages caused by fire, flood, or act of God. BTX warrants items repaired or replaced pursuant to the above warranty, under normal and proper use, storage, installation and maintenance, against defects in material and workmanship for a period of 30 days from date of start-up of such repaired or replaced item or the expiration of the original warranty, whichever is longer. Correction of nonconformities in the manner and for the period of time specified herein shall be purchaser's exclusive remedy and shall constitute fulfillment of all liabilities of BTX, whether in warranty, contract, negligence, tort, or otherwise with respect to the item delivered. In no event shall BTX be responsible for providing access to the allegedly defective item or for disassembly or reinstallation of such item or parts.

9. DISCLAIMER

THE FOREGOING EXPRESS WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WRITTEN, ORAL OR IMPLIED. ALL OTHER WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED.

10. LIMITED LIABILITY

BTX'S LIABILITY FOR ANY AND ALL CLAIMS, CHARGES, EXPENSES, DAMAGES, LOSSES AND INJURIES ARISING OUT OF OR RELATING TO ITS PERFORMANCE OR BREACH OF ANY

AGREEMENT OF SALE FOR GOODS AND/OR THE MANUFACTURE, SALE, DELIVERY, RESALE, REPAIR OR USE OF ANY GOODS SHALL NOT EXCEED THE PURCHASE PRICE OF SUCH GOODS, REGARDLESS WHETHER THE CLAIM IS BASED ON CONTRACT, TORT, NEGLIGENCE, STATUTE, STRICT LIABILITY, WILLFUL OR WANTON CONDUCT, WARRANTY (EXPRESS OR IMPLIED), OR OTHERWISE. THIS SHALL BE PURCHASER'S SOLE AND EXCLUSIVE REMEDY AGAINST BTX OTHER THAN THE REMEDY PROVIDED FOR UNDER THE EXPRESS BTX WARRANTIES. IN NO EVENT SHALL BTX BE LIABLE FOR INCIDENTAL, SPECIAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES.

11. ARBITRATION

BTX AND PURCHASER AGREE THAT THIS TRANSACTION INVOLVES INTERSTATE COMMERCE AND THAT AT THE OPTION OF BTX, ANY DISPUTE RELATING TO IT IN ANY MANNER SHALL BE SUBMITTED TO BINDING ARBITRATION BEFORE THE AMERICAN ARBITRATION ASSOCIATION AND SHALL BE GOVERNED BY THE FEDERAL ARBITRATION ACT OR, IF THAT STATUTE IS INAPPLICABLE, ANY DISPUTE SHALL BE GOVERNED BY THE TEXAS ARBITRATION ACT; HOWEVER, NO ARBITRATOR MAY AWARD PUNITIVE DAMAGES. PURCHASER AGREES TO PAY ALL COSTS INCURRED BY BTX, INCLUDING BUT NOT LIMITED TO COSTS OF ARBITRATION, COLLECTION, REASONABLE ATTORNEY'S FEES, EXPENSES AND ANY COURT COSTS.

12. Return

No goods may be returned without the express written approval of BTX and the receipt of an BTX RGA identification number. Goods approved for return must be returned in original packaging, freight prepaid, clearly marked with the BTX RGA identification number and be accompanied by a copy of the original invoice. Application of the warranty will be determined by BTX technical staff after return of the item, its inspection, and any necessary investigation. A restocking charge of 25% of invoice value will apply on all items accepted for return.

13. Liens and Security Interest

Purchaser will not permit to be created or to remain undischarged any lien, encumbrance or charge upon the goods supplied by BTX until BTX has received payment in full for such goods. If any liens, encumbrances or charges shall be filed against BTX goods prior to payment in full, purchaser shall discharge the liens, encumbrances or charges within ten days and reimburse BTX for expenses incurred in defending its security interest. Title to the goods shall remain with BTX until payment in full has been received.

14. Statute of Limitations

Any action against BTX shall be commenced within one year after the cause of action has arisen.

15. Choice of Law and Venue

The rights and duties of the parties hereunder and the construction and effect of these terms and conditions shall be governed by the laws of the State of Texas. Venue shall lie in Dallas, Texas, to the exclusion of any other jurisdiction.

16. This agreement supersedes any inconsistent or additional promises made by any employee, representative, agent or dealer of BTX.

17. If any part of this agreement is found invalid, the balance of the agreement remains enforceable.

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