



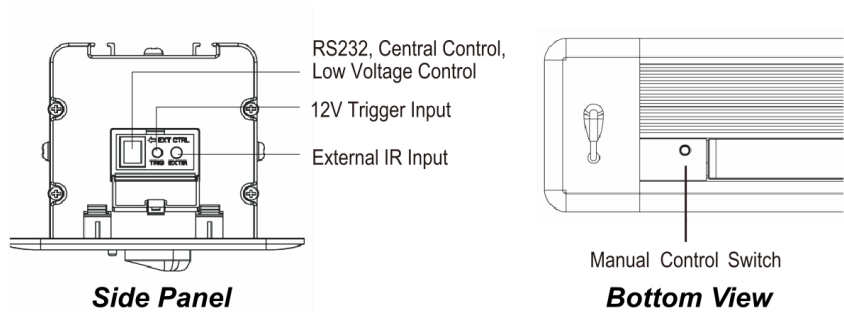
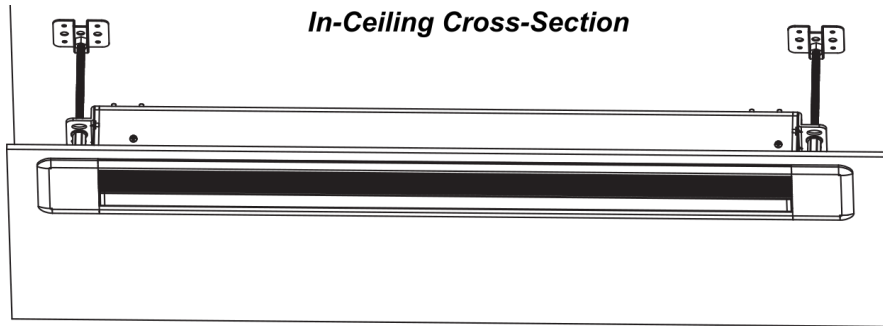
Instruction Manual for Spirit & Spirit Tab-Tension Series In-Ceiling Electric



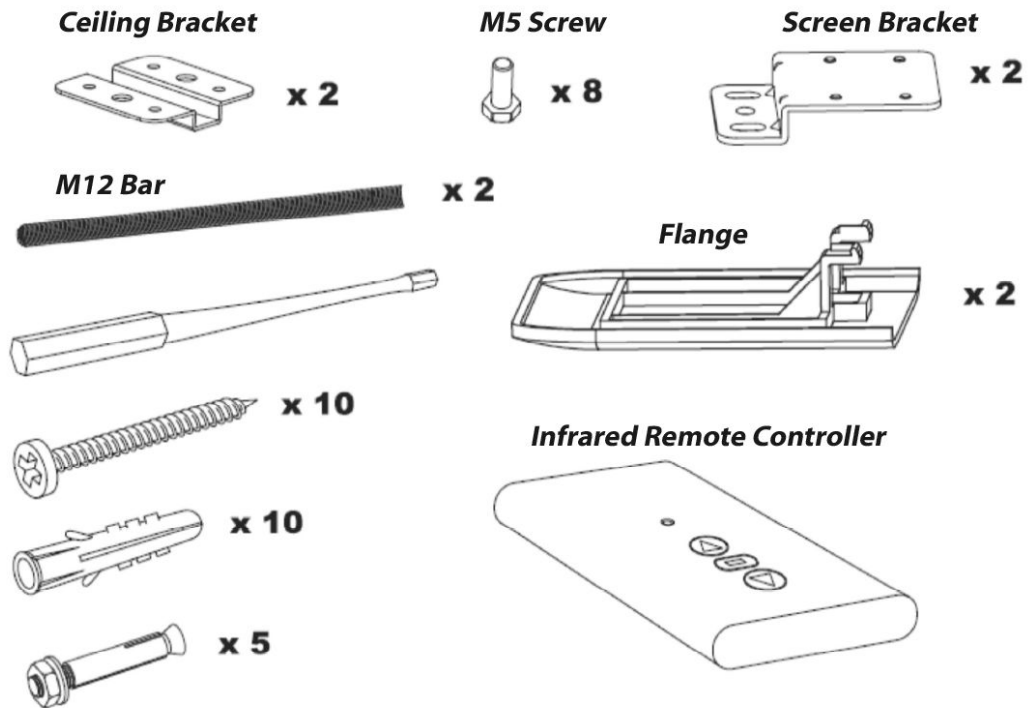
MODELS: SE43*, SE169***, SE1610***, ST43***, ST169***, ST1610*****

Thank you for purchasing a Severtson projection screen. Before use, please read the instructions carefully. After installation, store the instructions for future reference.

Overview



Parts Included

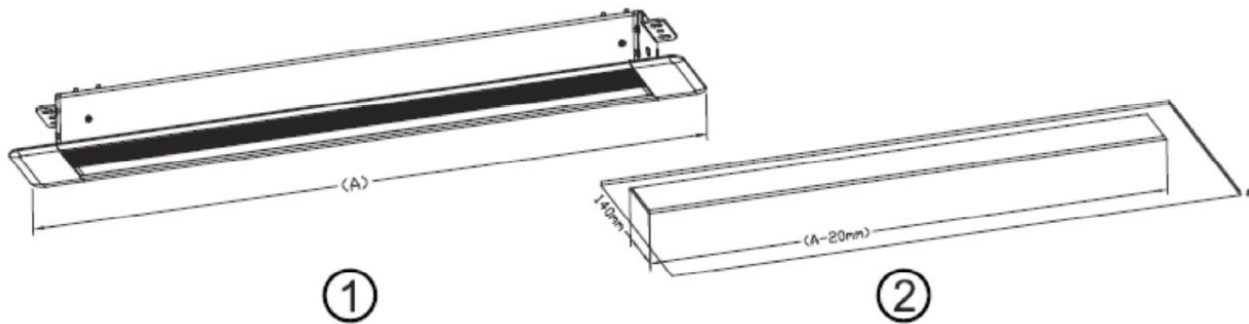


Preparation Instructions

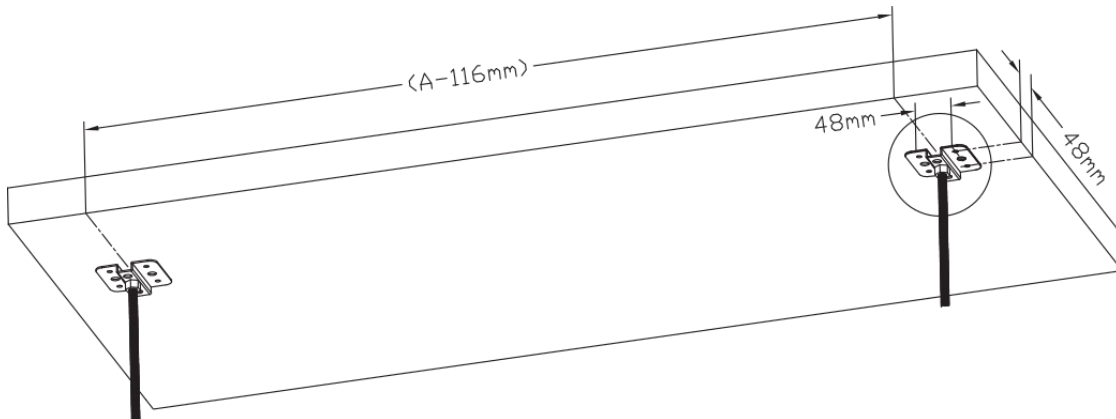
Take out all the parts from the packaging and verify that all the parts have been included, then follow the steps below to install the screen.

Note 1.1: When installing the projection screen it is important to choose the correct fasteners for the ceiling type. Choosing the wrong fasteners can lead to severe injuries or screen damage.

1. Choose a proper location on the ceiling to install the projection screen. Be sure that no load-bearing supports will be cut or compromised during the installation.



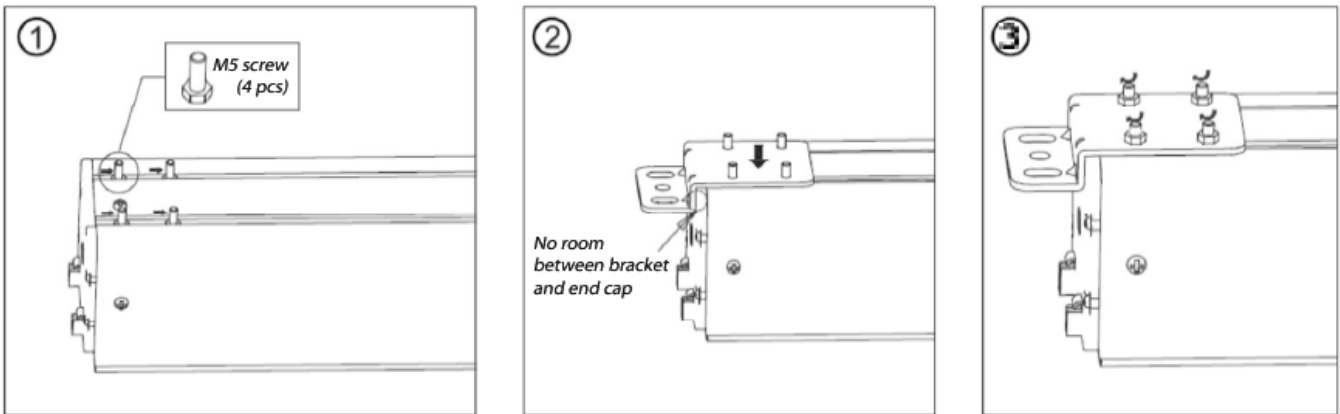
2. Measure the total length of the case w/ flanges attached (A) as shown (Fig. 1). Subtract 20mm (3/4") from that value (A) to get the hole cut-out length. The cut-out width is 140mm (5 1/2").
3. After determining the location of the screen and the cut-out dimensions (Fig. 2), proceed to cut the hole in the ceiling. This step cannot be undone, so be sure the measurements are correct before making any cuts.



4. The distance between the center of each bracket is A (the measurement from Fig. 1 above) minus 116mm (4 1/2"). Mark the location of each mounting hole for both brackets (Fig. 3).

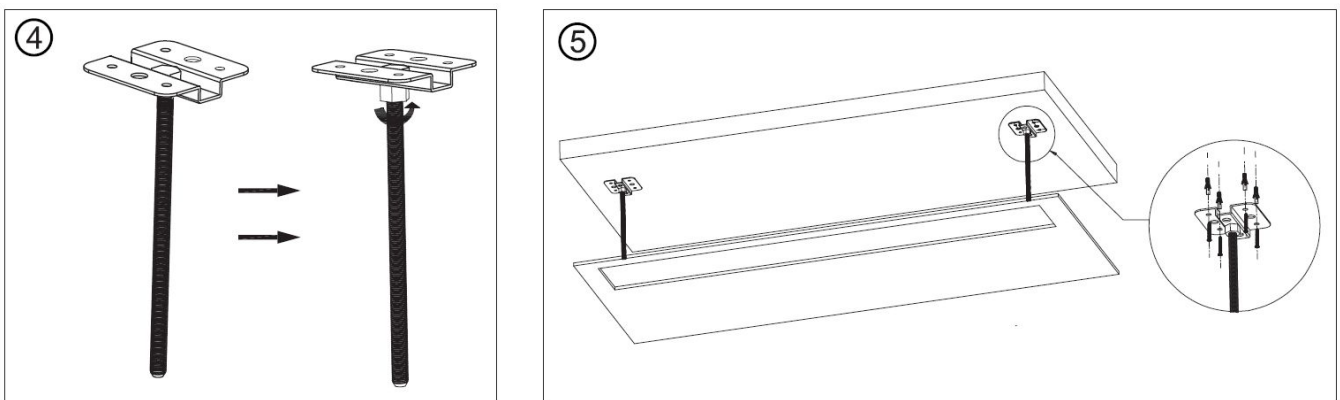
Installation Instructions

1. Slide four M5 screws (two along each track) onto the screen case (Fig. 1). Place the first screen bracket on the screen case aligned with the four screws (Fig. 2). Slide the bracket so that there is no gap between the bracket and the end of the screen case. Secure the bracket with a nut on each screw (Fig. 3). Repeat this step for the second bracket on the other end.

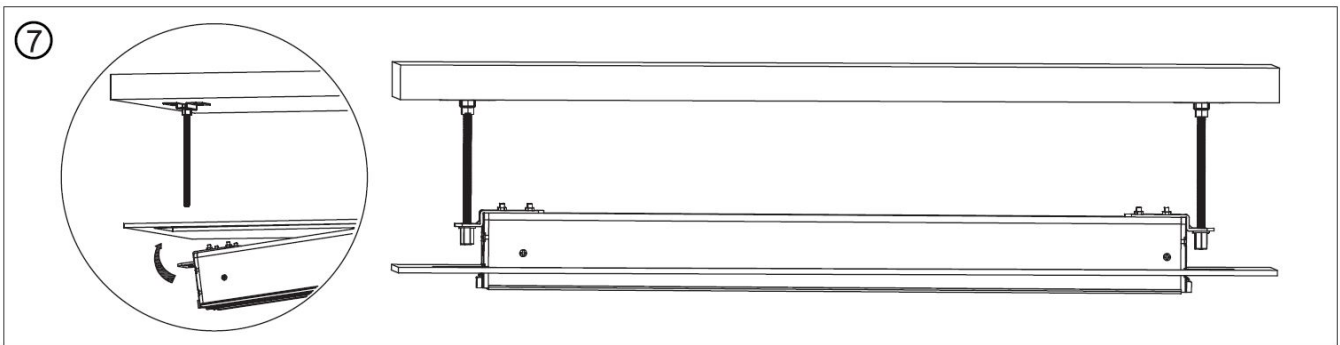
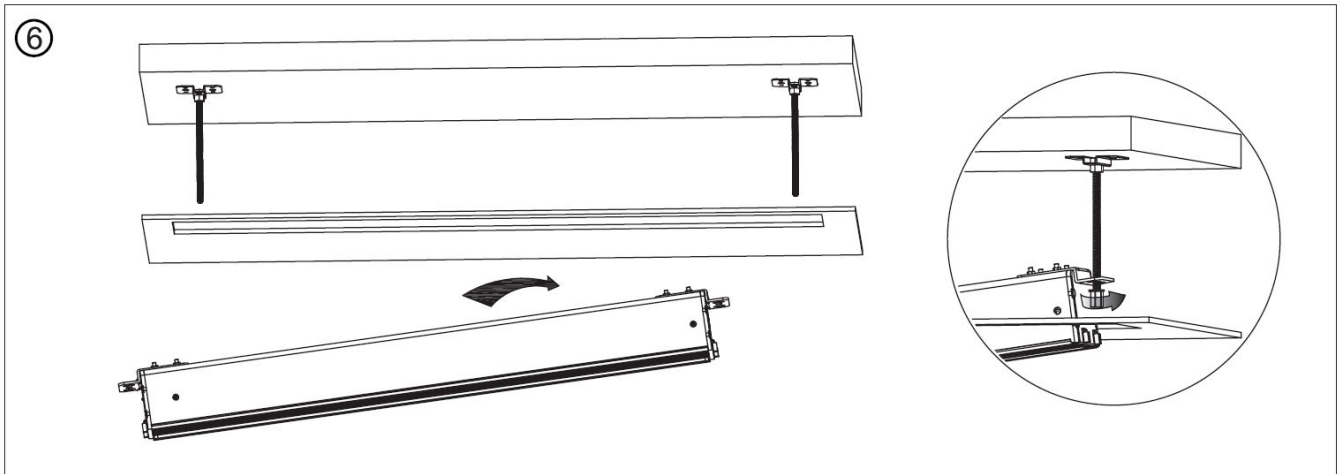


2. Slide the threaded installation rods through the holes in the each ceiling-mount bracket and secure each rod on both sides with nuts until the ceiling-mount brackets are secure (Fig. 4). Install the ceiling brackets (Fig. 5) at the previously marked locations (see Preparation Instructions).

Note 2.1: The included threaded installation rods are M10 x 1.5mm pitch, 3.3 ft. (1.0 m) long. The rods can be carefully cut to length if they are too long for the installation.

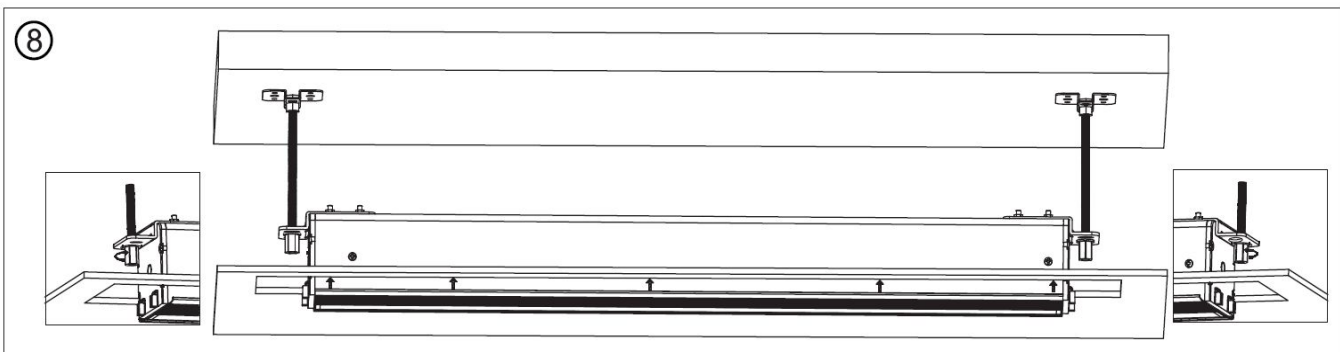


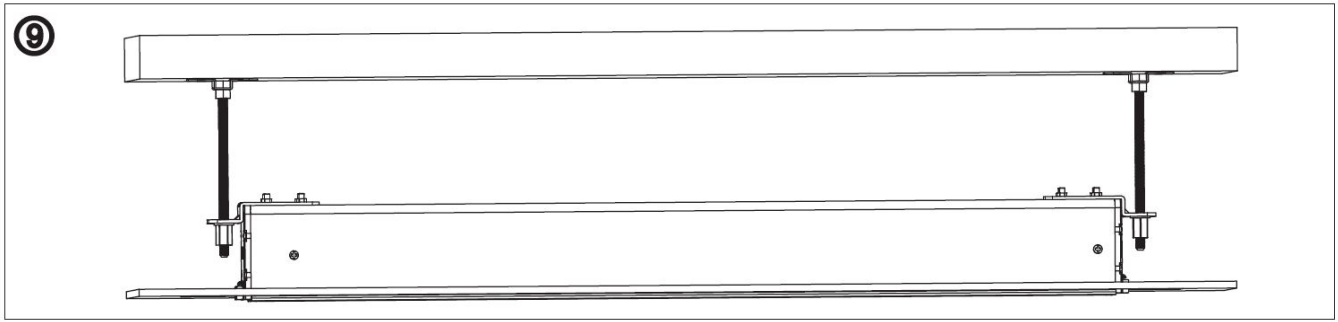
3. Be sure that the screen case is facing the correct direction. The screen controls should be on the left side of the case when looking at the viewing side of the screen. Lift the screen up so that the threaded hanging rods slide into the holes in the case mounting brackets (*Fig. 6*). Secure the screen in place with nuts threaded onto the hanging rods (*Fig. 6, Fig. 7*).



Note 3.1: At this step you may want to attach external wiring, power, etc. to test the screen's operation before fully installing it into the ceiling.

4. To secure the screen into its final location, tighten the nuts below each case mounting bracket (*Fig. 8*) until the screen trim is flush with the ceiling (*Fig. 9*).



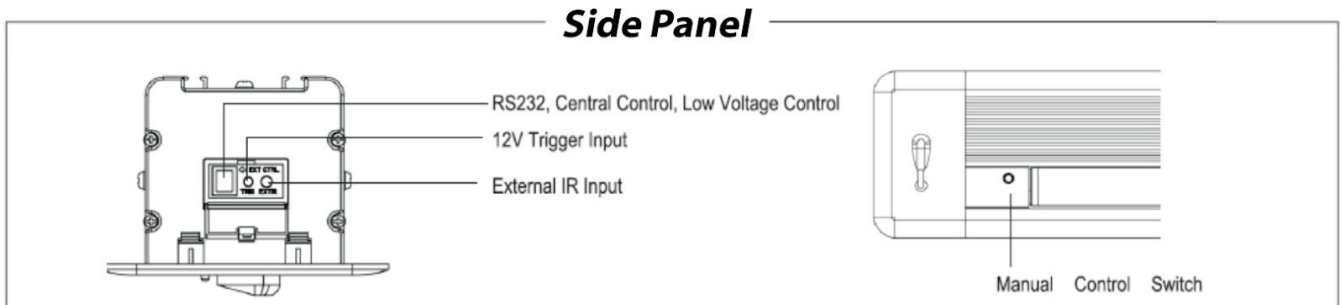


5. Install the screen trim flanges. Each trim flange snaps into small grooves near the bottom of the left and right sides of the screen case. The screen should now be fully installed and the cut-out hole should not be visible since it is covered by the trim flanges.

Note 5.1: For adjusting the automatic stop limits of your screen please see *Appendix A: Adjusting the Screen Limits* in this guide for steps to set the stop locations for both upper and lower screen retraction and extension.

Controlling the Screen

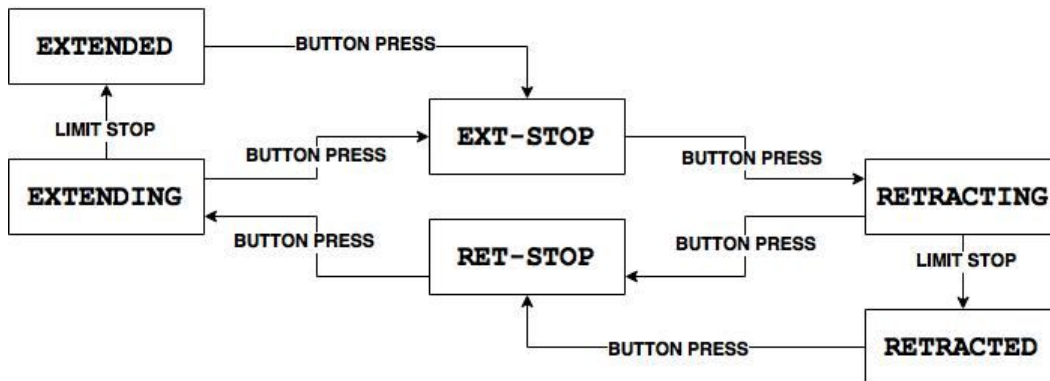
There are many different options included to control the projection screen. Only connect the screen to the options that will be used.



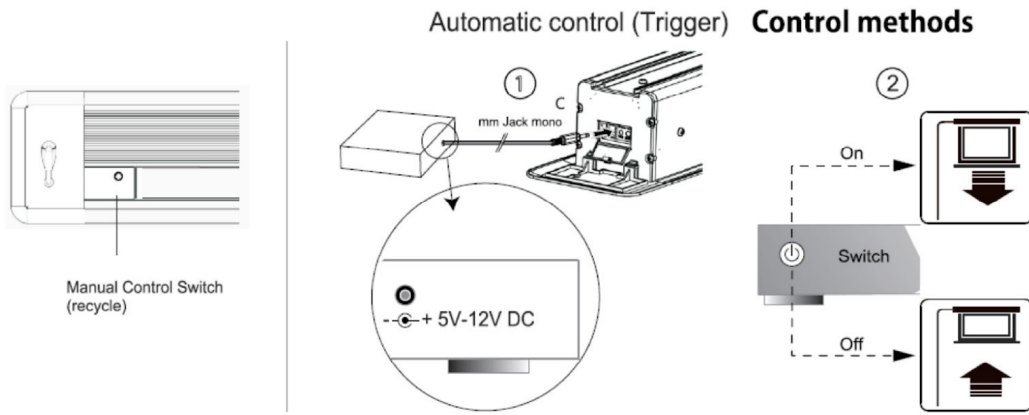
Note 1.1: When the screen is set to manual control, only manual control of the screen will work. For any other type of control set the screen to remote control.

1. Manual Control. The push-button located on the left end of the screen face near where the projection screen extends. Pushing the button will cause the motor to switch between several different modes. The state change pattern can be seen in the diagram below:

DIAGRAM 1.1: MANUAL PUSH-BUTTON MOTOR STATE TRANSITIONS

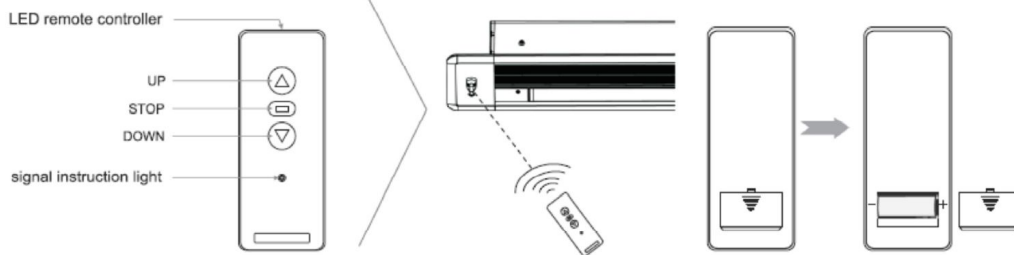


2. Trigger Connection. The trigger jack recognizes outputs of DC 5V-12V. When power is sensed the screen will automatically lower. When power is off the screen will rise back into the case.



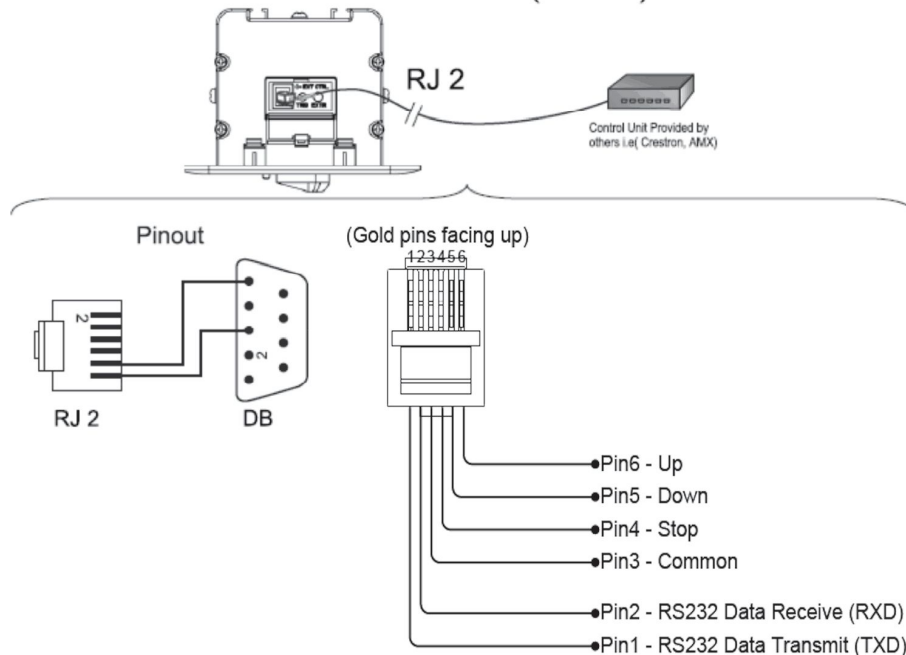
3. IR Remote. The remote control will work up to 25' from the IR eye and an angle of up to 30°. The remote will not work if the signal or receiver is covered. Keep the remote away from high temperatures and humidity. Change the battery when the signal is low; be sure to use the same type of battery as the original.

Infrared control



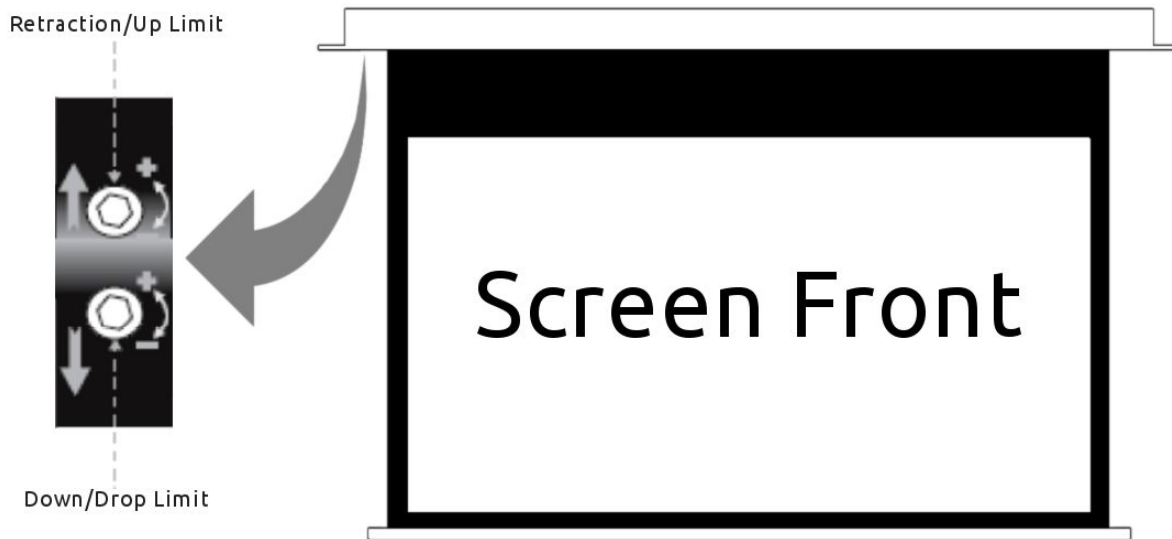
4. RS-232. Home automation systems that are compatible with RS-232 communication can remotely operate the screen via the RJ-45 connector on the left-side control panel.

External control (RS232)



Appendix A: Adjusting the Screen Limits

We only recommend that experience AV installers adjust the motor limits of the projection screen. The upper limit should never be adjusted - it controls the point at which the screen stops retracting into the case and is factory-set to flush. Improperly adjusting the limits of the motor will cause damage to the screen and motor and will void all warranty.

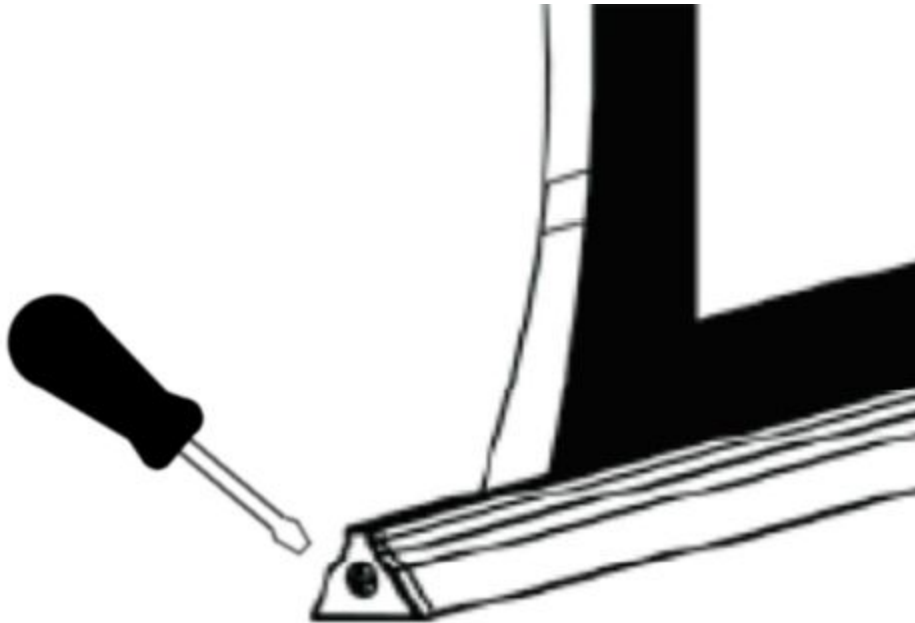


1. Remove the small rubber stopper on the underside of the screen case near the left-side, and extend the screen enough to be able to locate the limit controls inside the screen case.
2. Identify the upper (retraction) and lower (drop) limit switches and then adjust the appropriate limit according to the respective steps below.
3. To adjust the upper limit (*this should usually not be adjusted since it is factory-set*):
 - a. Bring the screen to the down position.
 - b. Press "up" on the remote control.
 - c. If the screen does not fully ascend into the case use the accessory tool to adjust the up limit. Turn the Up limit towards the "+" symbol until the screen is at the desired position. Always make small adjustments, and test often to avoid damage to the screen.
 - d. If the screen ascends too far then simply turn the same positioning screw towards the "-".
4. To adjust the lower limit:
 - a. Bring the screen to the up position.
 - b. Press "down" on the remote control.
 - c. If the screen does not fully drop to your desired position from the case use the accessory tool to adjust the down limit. Turn the Down limit towards the "+" symbol until the screen is at the desired position. Always make small adjustments, and test often to avoid damage to the screen.
 - d. If the screen drops too far then simply turn the same positioning screw towards the "-".

Appendix B: Adjusting the Screen Tension

This section is only for applicable models (*tab-tensioned models beginning with "ST"*). The tension of the screen may need to be adjusted occasionally if the screen begins to appear wavy.

1. Use a flat head screwdriver to lightly push the adjustment screw in on the weight bar. Turn to loosen or tighten.



Appendix C: Troubleshooting the Screen

The Spirit Series screens are designed for many years of use. Problems are usually simple to resolve and caused by small issues or improper end use. If problems persist, please contact us.

General Troubleshooting:

Screen does not retract.	Power cable is not connected or outlet does not have power. Check the connection of the power cable.
Screen goes too low or does not go down enough.	Adjust the lower limit as described in <i>Appendix A: Adjusting the Screen Limits</i> .
Screen goes too far into case or does not ascend to the correct position.	Adjust the upper limit as described in <i>Appendix A: Adjusting the Screen Limits</i> .
IR control does not work.	Check the batteries in the IR remote. Check to make sure you are in the IR range. Close windows or shut off lights that may be diffusing the IR signal.

Warnings

1. Do not attempt to take apart or modify the screen. If any problems occur please contact your local dealer.
2. The screen is designed to be transported, stored, and operated in the horizontal position. Do not stand the screen up on its end vertically for any extended period of time.
3. Do not clean the screen case with water - only dust the screen to avoid electric shock.
4. Make sure the brackets used are firmly secured to the wall or ceiling to avoid any damage.
5. Make sure fixing screws are tight to avoid any damage.
6. When installing electric motors use a professional or contact your local dealer. Incorrect connection of wires may result in shorts or fires.
7. Fluorescent lights may cause interference with infrared signal.
8. Be careful not to scratch or damage the screen surface while handling it.
9. Do not write or draw on screen surface. Do not poke, fold, or tear screen material.
10. Do not use detergents or harsh chemicals to clean screen material. A soft cloth and mild soap can clean dust and dirt off the screen material. A cotton cloth can be used to gently wipe dust off of the screen.
11. For coated screens, simply dust the screen with a clean, dry, lint-free cloth. You may also blow dust off of the screen with a leaf blower. If the screen gets something on it that cannot be dusted or blown off, clean it using a damp cloth in a dabbing motion. **DO NOT WIPE A COATED SCREEN WITH WATER.**
12. Retract the screen after each use.
13. To prevent unnecessary damage, the assembly and maintenance of the screen should be done by adults.



Ignoring the safety warnings may lead to injuries and/or damaging the product.



Brackets should be installed in a secure place to avoid accidents caused by the screen falling.



Please contact your local dealer for repairs or maintenance. Please contact our company if you have any further questions.

Use caution when installing or removing the screen. Loose parts may cause the screen to fall.