

Section 1 - Preparation

Before installing the Acrobat you must:

1. Be a certified rigger
2. Have filled out an Acrobat Submittal or Plan Sheet
3. Know your mounting method:
Parallel Beam, Perpendicular Beam, Parallel Pipe, or Perpendicular Pipe
4. Have the following tools:
 - Pencil/Marker,
 - Power Drill
 - Block & Tackle or Mechanical Lift
 - Wrench
 - Screw Driver
 - Level
 - Plumb

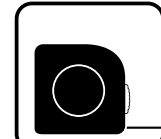
TOOLS REQUIRED



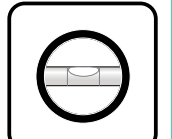
PENCIL



POWER DRILL



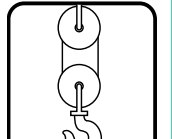
TAPE MEASURE



LEVEL



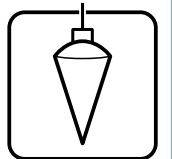
HARDWARE (by others)



BLOCK & TACKLE



CROSSHEAD SCREWDRIVER

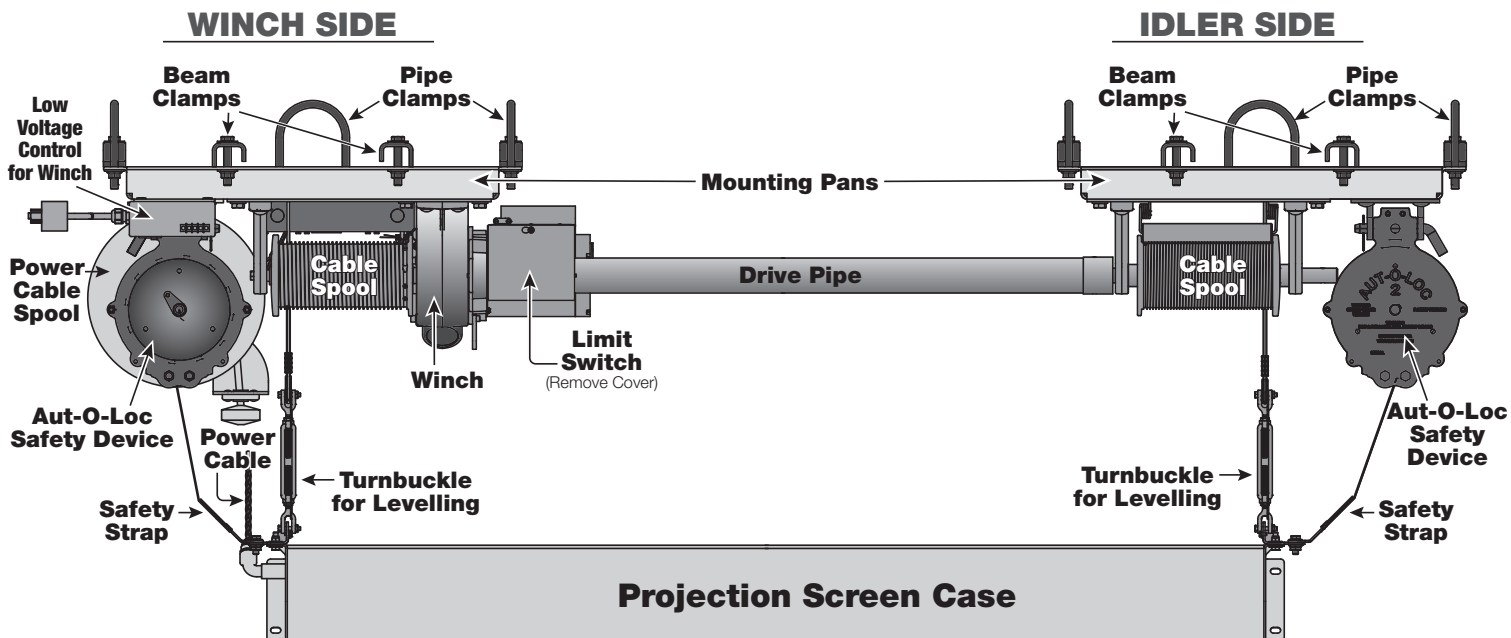


PLUMB LINE



WRENCH

Section 2 - Components



 **WARNING** 

Improper installation and use of Acrobat can result in serious injury or death. Primarily, injuries can occur when the Acrobat falls due to imprecise installation, mishandling of the Acrobat during installation or installation on an insufficient ceiling structure. Please use extreme care.

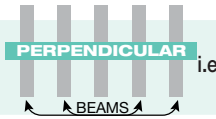
1. Please read the following installation guidelines thoroughly and follow them carefully. Failure to do so may cause product to fall or otherwise fail, and could result in serious injury.
2. Installation and calibration of the Acrobat should only be performed by an authorized, qualified, and experienced professional. In particular, electrical work and wiring [indicated in diagram by dashed lines] must be completed only by a qualified professional electrician who has read this manual completely and is familiar with the construction and operation of this equipment and the hazards involved.
3. Do not affix the unit to wall or ceilings that have inadequate strength to permanently hold the unit during use. It is the owner's and installer's responsibility to confirm the wall or ceiling to which the unit attaches is sufficient to permanently hold the weight and stress loads of the unit at all times. Draper, Inc., is not responsible for improper installation, application, testing or workmanship related to the product at place of installation.
4. It is the installer's responsibility to make sure appropriate fasteners are used for mounting.
5. All brackets and other hardware must be installed level. Acrobat must be level and square.
6. Never leave the area while operating the Acrobat during installation, maintenance, or normal operation, unless it is secure and safe.
7. Before testing or operation, carefully inspect entire area and path of the Acrobat and areas underneath the Acrobat to be sure no persons or objects are in the area.
8. Turn off power and any nearby equipment or cables carrying electricity before connecting switches, wires, controls, or electrical components.
9. During testing or operation, carefully watch the surrounding area for any potential safety concerns including nearby persons or objects.
10. After installation, the entire system, including all sensors, should be carefully tested to ensure safe and normal operation. Extreme care should be taken during testing to remain clear of moving parts to avoid possible injury.
11. Operation of Acrobat should be performed only by authorized and qualified personnel, who have been trained in the safe and effective operation of the Acrobat & understand its safety features. Control switch to be in full view of unit during operation.
12. The safety features of the Acrobat, including sensors, should never be disabled, bypassed or overridden. The system should not be operated until all safety features, including the sensors, are properly and completely installed, calibrated and tested.
13. Acrobat may need to comply with local, state or district rules and regulations, in particular when installed in schools. All applicable rules and regulations should be reviewed before installation and use.
14. Failure to precisely follow installation guidelines invalidates all warranties.
15. Custom products/installations may not be reflected in this manual. Call Draper, Inc., if you have questions about the installation of custom products or any questions about your installation.

Before Beginning Installation

1. Installation should be completed by a certified rigger. Look for any job site conditions that could interfere with installation or operation of the system.
2. Read carefully and be sure to understand all installation instructions and all related operations manuals. These instructions are intended as a guide for the installer and owner. They should be followed closely and combined with the expertise of experienced qualified installers. Draper, Inc., is not responsible for improper installation, application, testing or workmanship related to the product at place of installation. Wiring diagram can be found inside winch limit cover panel. Instructions for attaching and wiring the winch are packed in carton. Please retain all instructions for future use.
3. Acrobat ships on skid with all components except drive pipe. Drive pipe is packed with projection screen or separately.
4. Locate and lay out all pieces.
5. Inspect all boxes to make sure you have received the proper Acrobat parts. Control switch is packed in winch crate, do not discard.
6. Operates on 110-120V, 60 Hz AC or 220-240V 50Hz AC 12amps.
7. Acrobat is not rated for continuous duty. Care should be used to not overheat winch while setting limit switches. Duty cycle is 10 minutes on, 20 minutes off
8. If you have any difficulties with installing, servicing or operating your Acrobat, call your dealer or Draper, Inc., (765) 987-7999.

Section 3 - Mounting Acrobat to Building Structure - Beam Mounting Method

Please Note: It is recommended that heavy items be hoisted up to the work area using appropriate machinery, hoisting lifts, block and tackle, etc.



Section 3.1 - Perpendicular Beam Mounting

1. Attach Beam Clamps through the provided holes in the Mounting Pans. The center of each mounting beam must be aligned with the center of the each Mounting Pan (See Fig. 1 & 2).

Please Note: The Minimum width of mounting beam is 4½" (11.4cm) and the Maximum width is 20 7/8" (52cm). Maximum Beam Flange thickness is 5/8" (15mm).

- Slide Beam Clamps firmly up to the Mounting Beam Flange (See Fig. 1 & 2).
- Tighten ½" (12.7mm) clamp bolts (4 per beam). Torque to 50ft/lbs (68nM).

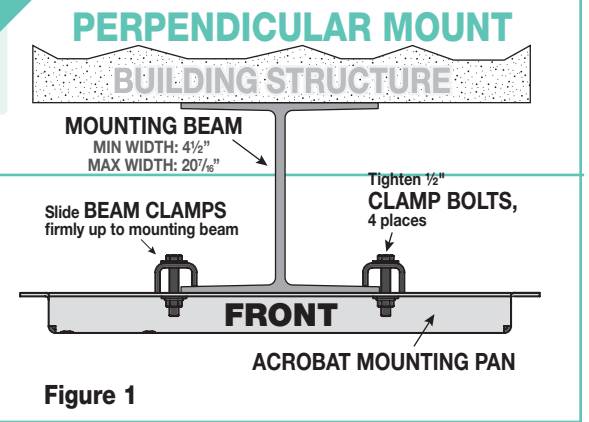
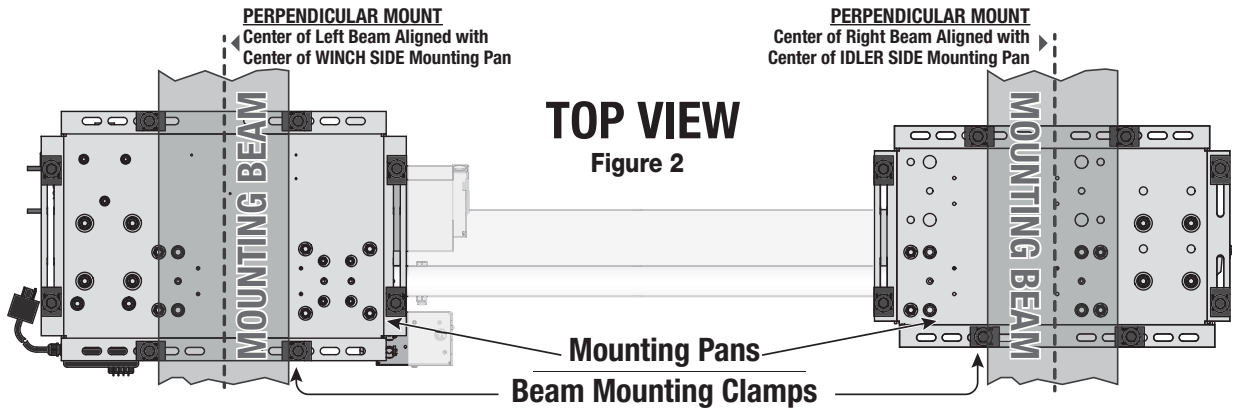


Figure 1



TOP VIEW
Figure 2

Section 3.2 - Parallel Mount Beam Mounting

1. Attach Beam Clamps to provided holes in Mounting Pans. The center of mounting beam must be centered on Mounting Pans (See Fig. 3 & 4).



Please Note: The Minimum width of parallel mounting beams is 2½" (63.5mm). The Maximum width is 10" (3m). Maximum Beam Flange thickness is 5/8" (15mm).

- Slide Beam Clamps firmly up to the Mounting Beam (See Fig. 3 & 4).
- Tighten ½" (12.7mm) clamp bolts (4 per beam). Torque to 50ft/lbs (68nM).

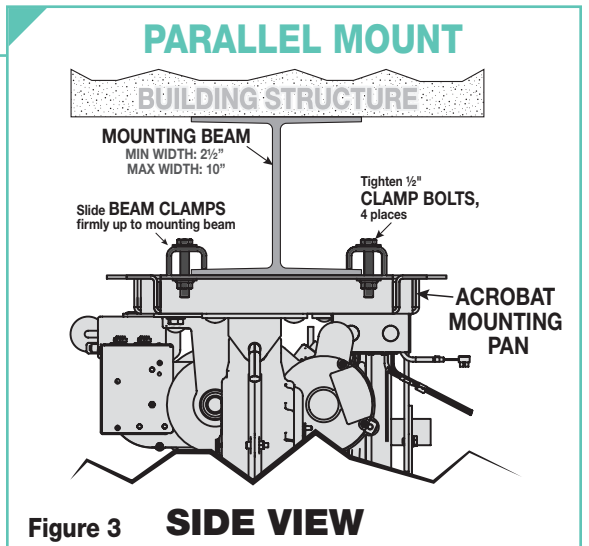


Figure 3 SIDE VIEW

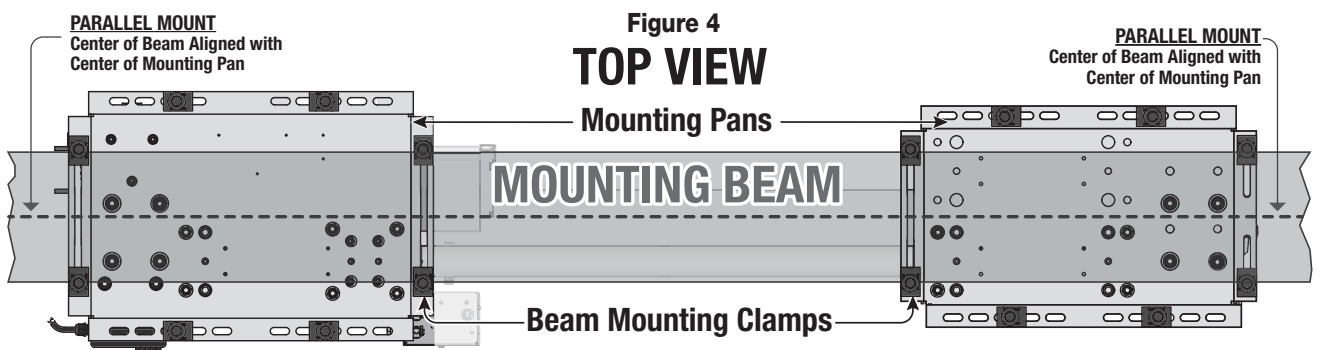


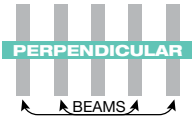
Figure 4
TOP VIEW

Section 4 - Mounting Acrobat to Building Structure - Pipe Mounting Method

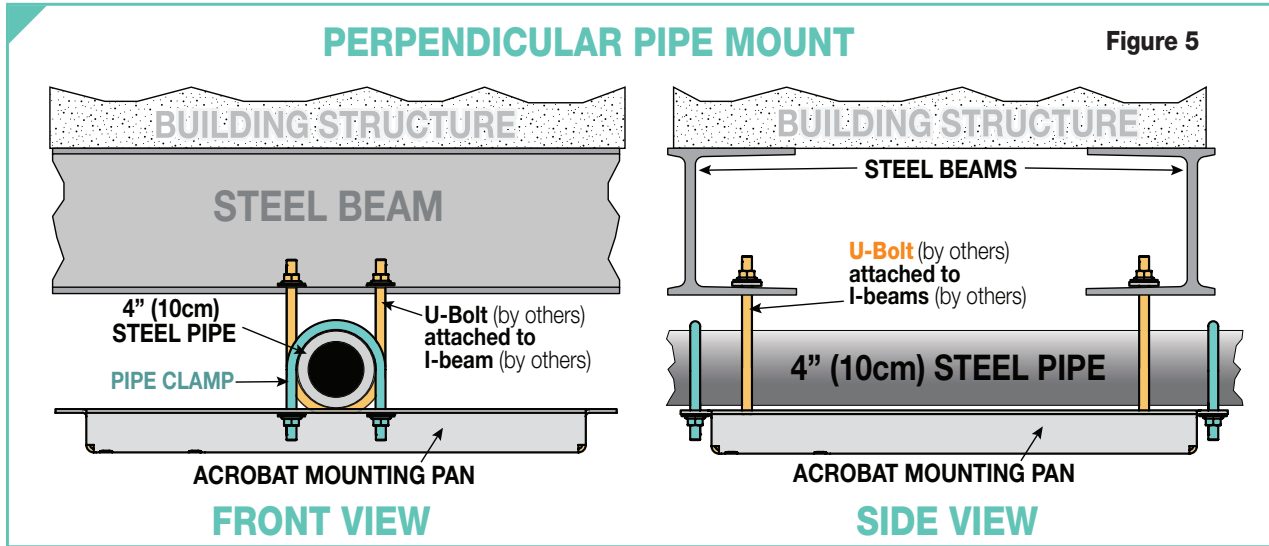
Please Note: It is recommended that heavy items be hoisted up to the work area using appropriate machinery, i.e. hoisting lifts, block and tackle, etc.

Section 4.1 - Perpendicular Pipe Mounting

Please Note: The following procedure assumes that the installer has securely attached a 4" (10cm) Ø steel pipe (by others) to the building structure PERPENDICULAR to the overhead beams (see fig. 5). It is the installer's responsibility to make sure appropriate fasteners are used for mounting.



1. Slide the four (4) Pipe Clamps onto the steel pipe.
2. Hoist the Acrobat into mounting position.
3. Attach Pipe Clamps through holes in Mounting Pans and secure with provided nuts. Torque to 50ft/lbs (68nM).

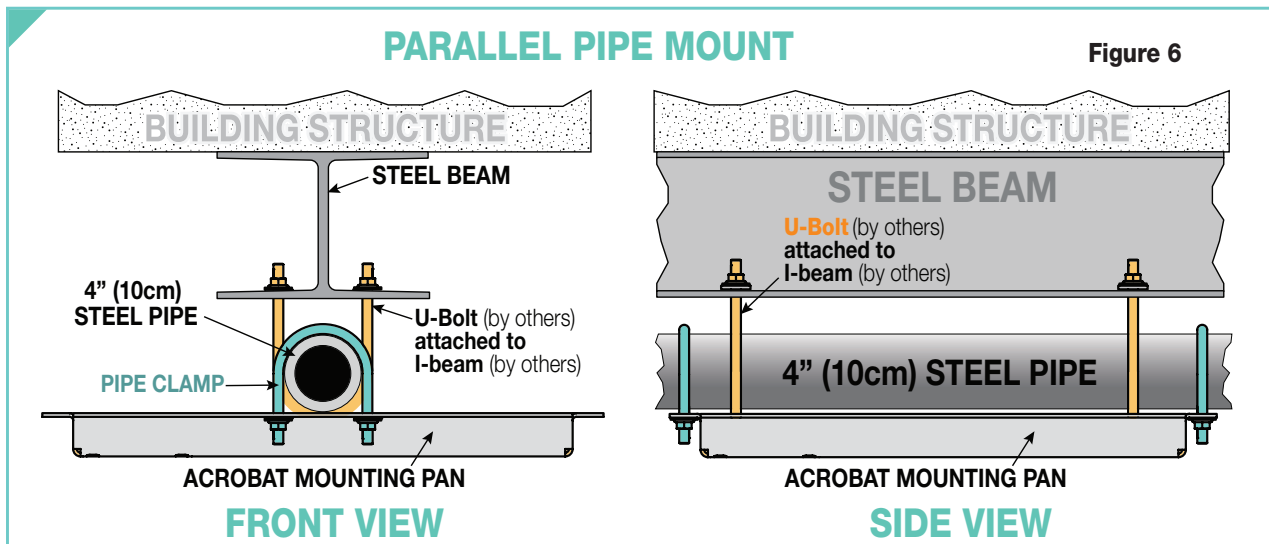


Section 4.2 - Parallel Pipe Mounting

Please Note: The following procedure assumes that the installer has securely attached a 4" (10cm) Ø steel pipe (by others) to the building structure PARALLEL to the overhead beams (see fig. 6). It is the installer's responsibility to make sure appropriate fasteners are used for mounting.



1. Slide the four (4) Pipe Clamps onto the steel pipe.
2. Hoist the Acrobat into mounting position.
3. Attach Pipe Clamps through holes in Mounting Pans and secure with provided nuts. Torque to 50ft/lbs (68nM).



Section 5 - Acrobat Winch Wiring

Please Note: Electrician should install Draper supplied twist lock receptacle and cover within 3' of location of winch or motor as shown on the project submittal.

Section 5.1 - Standard Momentary Key Switch

Single switches require a standard switch box that measures 3" (76mm) high x 2 1/4" (57mm) wide x 2 1/2" (64mm) deep.

Install key switch in accordance with wiring diagram (see Fig. 7).

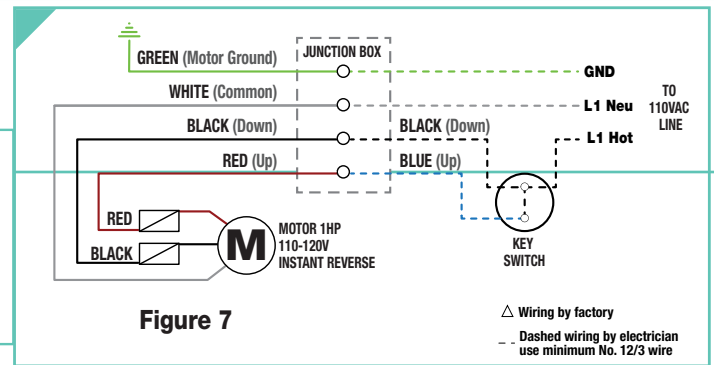
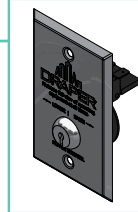


Figure 7

Section 5.2 - Low Voltage Contact Closure Control Wiring

Wireless Remote Control operator is a radio frequency (RF) controlled motor operator designed for use with the Acrobat. The receiver is factory installed in an enclosure with a 60" (152cm) long cord with a twistlock grounded plug attached. Enclosure also includes four-prong, twist-lock female receptacle as well as an external terminal block for connection of an optional low voltage key switch.

1. Connect the C079.079 male twist lock plug to the whip that is attached to the device. The cord should be connected with the green wire hooked to terminal G, white wire connected to terminal W, red wire connected to terminal X and black wire connected to terminal Y (see wiring diagram in Fig. 8 at right).
2. Attach 503060 Wireless Remote Control Operator to winch.
3. Insert winch cord plug into female receptacle mounted in 503060 Wireless Remote Control Operator.
4. Insert cord on 503060 Wireless Remote Operator into receptacle installed by electrician.
5. As necessary, program frequency of receiver by following Section 5.2.2 below.

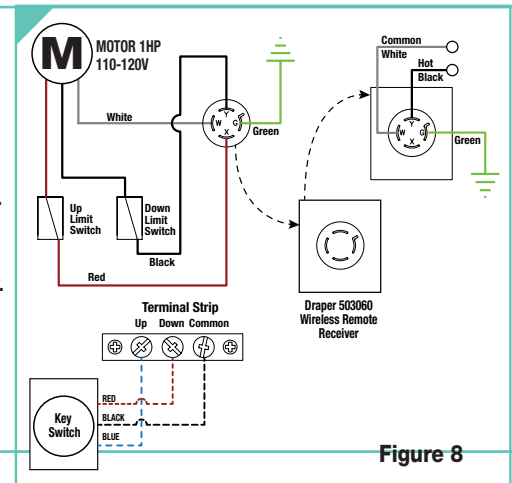
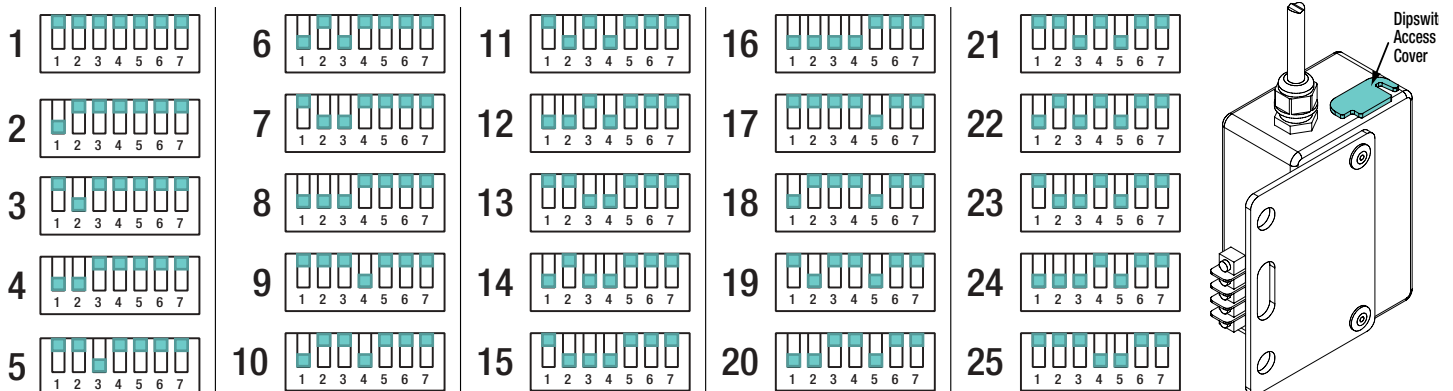


Figure 8

Section 5.2.2 - Programming Receiver Frequency

1. Open dip switch cover on end of 503060 Wireless Remote Receiver/Operator. Cover opens by loosening outer screw and rotating cover.
2. Locate the dip switch bank inside receiver and set the dip switches per the following chart, then close dip switch access cover. A switch is in ON when in the down position (toward the mounting plate).



Section 4.3 - Attaching Optional Key Switch to Wireless Remote Receiver

Draper's No. 503060 EZ Power Wireless Remote Control Receiver is capable of having dual methods of operation.

You can attach an optional low voltage backup key switch, in addition to being operated with 503061 99-Station Transmitter.

In order to connect the optional key switch, the electrician will need to pull a three-conductor control wire between the switch location and the wireless receiver. The connections between the key switch and the terminal block located on the outside of the receiver housing should be made per the diagram (see Terminal Strip in Figure 9).

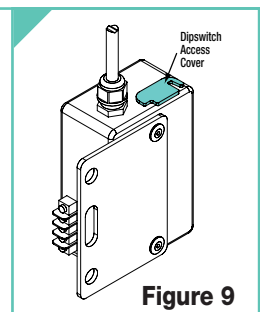


Figure 9

Section 5 - Acrobat to Screen Connections

The projection screen case can be attached to the cables prior to mounting the Acrobat to the building structure (See Section 3 - Mounting to Building Structure) or after the Acrobat has been installed.

Please Note: If you are attaching the screen AFTER mounting the Acrobat to the building structure, then you must lower the cables to the floor while maintaining at least 10lbs. of weight on each cable as it descends.

Section 5.1 - Cable Connections to the Screen Attachment Bracket

A Screen Model specific Hardware Kit is included with your Acrobat.

1. With the screen case resting on a flat surface, find the two (2) attachment brackets that align with the mounting flanges on the ends of the screen case, and bolt them in place (see fig 8).

2. Remove one of the nuts and bolts from each of the Turnbuckle Jaws and attach turnbuckle to one of the two (2) holes provided in the Attachment Bracket (see fig. 8).

Please Note: The Attachment Bracket has two (2) holes for screen leveling purposes.

3. Attach the top Jaw of the Turnbuckle to the Cable assemblies of the Acrobat (See Fig. 10 & 11).

4. Once the Turnbuckle is secured to each Attachment Bracket and the Cable Assemblies, run the Acrobat UP 6 inches (15cm).

5. Tighten all bolts to 50inlbs. Inspect all cables, and level the screen.

Section 5.2 - Leveling and Securing the Screen

Please Note: The Attachment Bracket has two (2) holes for screen leveling purposes.

1. Use the Turnbuckles to adjust the screen until it is level.
2. Once the screen is level, tighten the Jam Nut against the body of the Turnbuckle at both the top and bottom.
3. Mouse a heavy gauge wire (by others) through the Turnbuckle Jaw and Body (See Fig.11).
4. Attach the two (2) locking plates to the attachment brackets (see fig. 10 & 11).
4. Inspect all hardware connections.

Section 5.3 - Attaching Aut-O-Loc Safety Devices

Refer to Figure 9 for the following procedure.

1. Locate the Aut-O-Loc mounting brackets that are pre-attached to each of the mounting pans.
2. Attach the Aut-O-Loc Safety Device to the one of mounting bracket using the attachment pin.
3. Secure the attachment pin with the cotter pin.
4. Slowly pull the safety belt out far enough to bolt it to the Screen Attachment Bracket.
5. Repeat Steps 1-4 on the opposite side of the Acrobat.

Please Note: The Acrobat Utility Line Set MUST be installed with BOTH Aut-O-Loc Safety Devices properly attached to the mounting pans, and safety straps secured to the case.

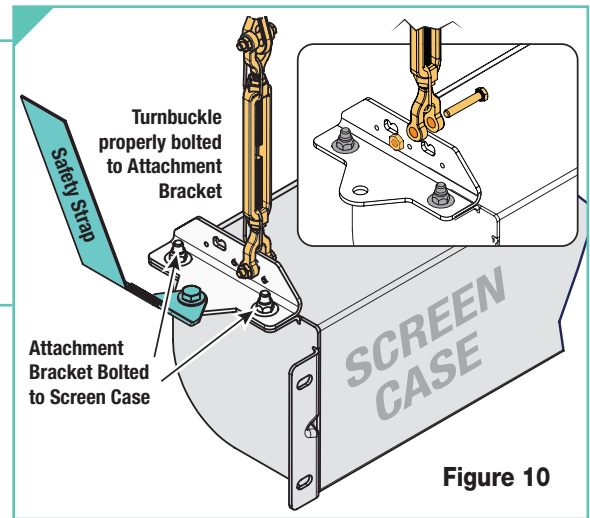


Figure 10

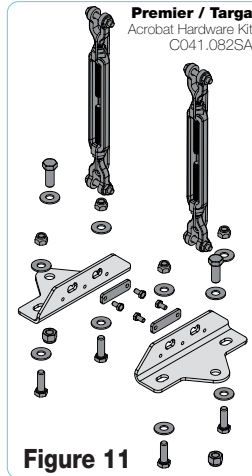


Figure 11

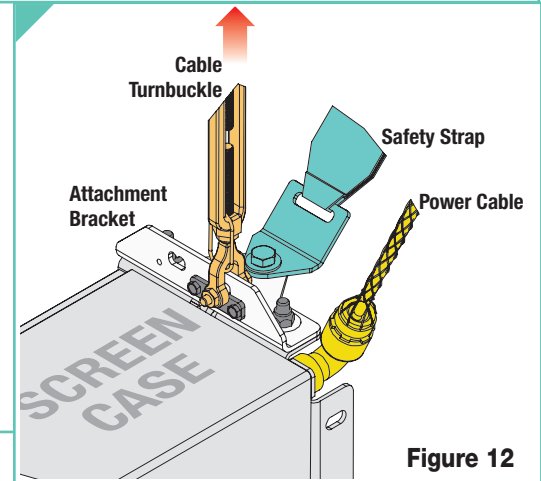


Figure 12

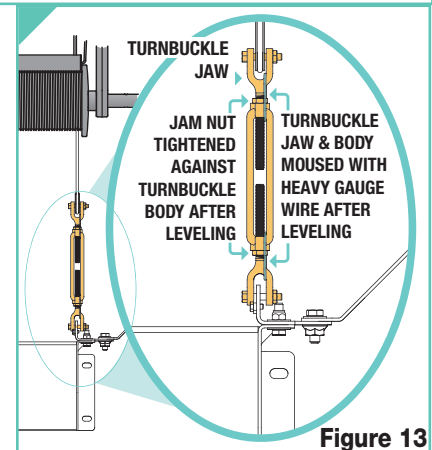


Figure 13

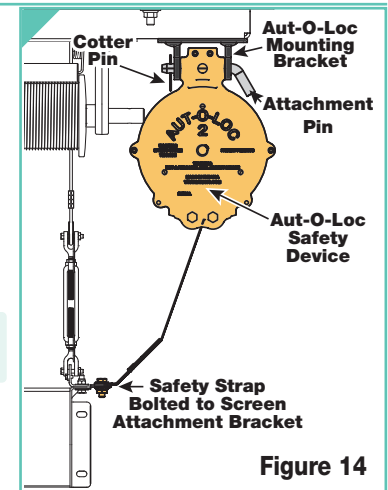


Figure 14

Section 6.4 - Electrical Connections to the Screen

1. Thread electrical wires through 90° Coupler and into screen case as shown in Fig. 15.
2. Make electrical connections according to the following wiring diagram (see Fig. 16).

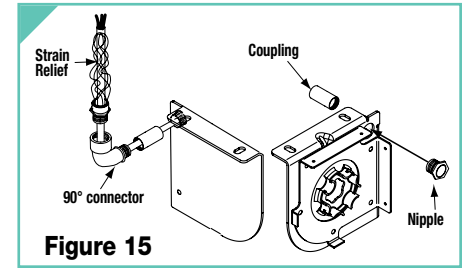


Figure 15

Low Voltage Control Wiring

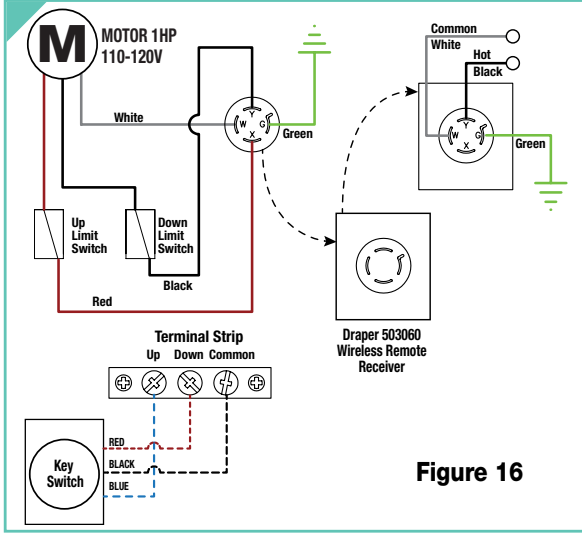
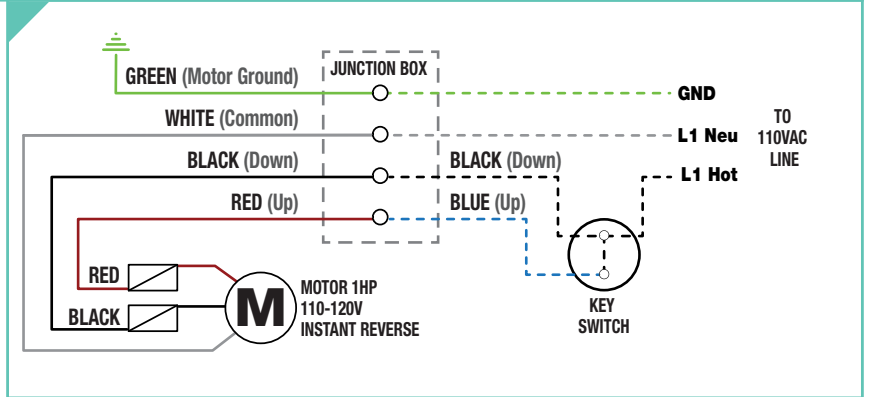
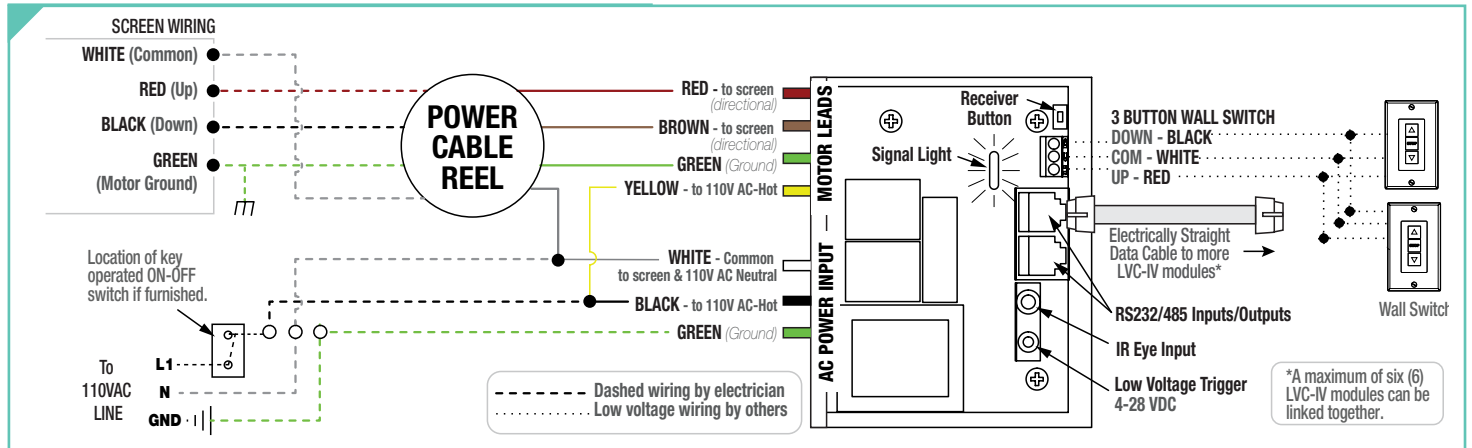


Figure 16

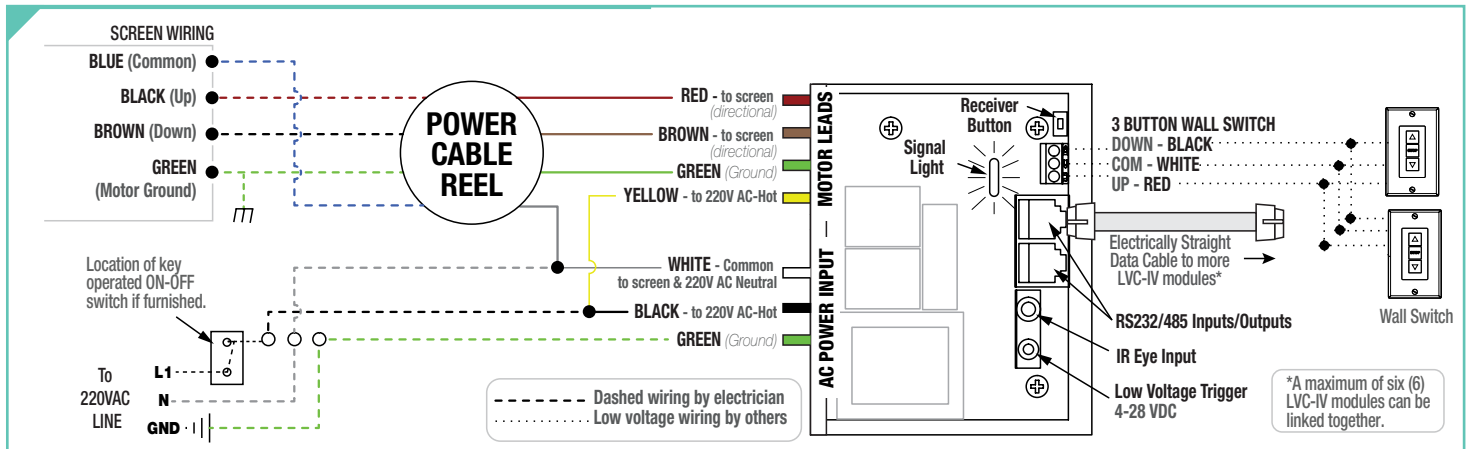
Acrobat Wiring



110-120V AC Low Voltage Controller Wiring



220-240V AC Low Voltage Controller Wiring



Section 6 - Limit Switch Adjustments

The Limit Switches are located inside the steel box on the winch (see Fig. 15).

Refer to Figure 16 for the following procedure.

1. Operate hoist in desired position until limit switch operates.

Caution: DO NOT operate winch beyond mechanical limits!

2. Push the INDEX BAR in indicated direction.
3. Rotate INDEX WHEEL.
4. Reverse winch direction until INDEX WHEEL clears switch lever.
5. Operate winch again to verify limit setting.
6. Adjust until desired setting is achieved.

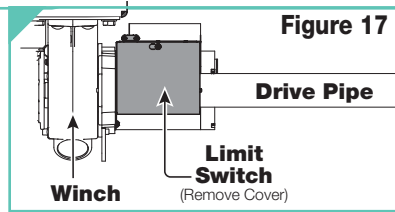


Figure 17

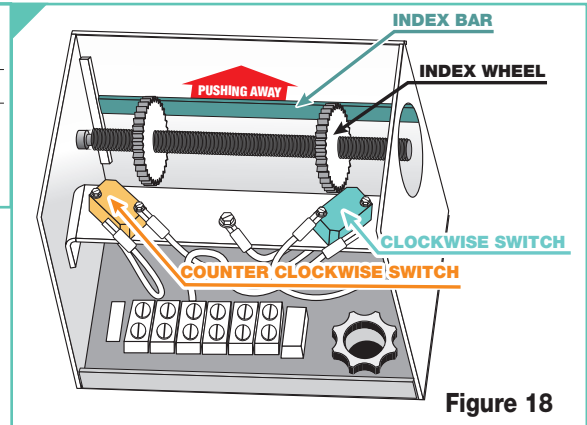


Figure 18

Caution:

1. Always watch movement of screen when operating winch.
2. Always each a second person watching for interferences.

Section 7 - Inspecting Cables for Signs of Excess Wear

How Often to Look

The frequency of inspections depends on how often the Acrobat is used. No matter how infrequently the Acrobat is used, a thorough inspection should be carried out annually at a minimum. Equipment which is going to be used frequently should be inspected approximately every 300 uses.

Where to Look

The stress points most likely to suffer from excess wear are along attachment points. However, wear and damage can occur at any point along the wire lift line. The entire length should be checked. All lift line terminations (cable clamps, thimbles, loops, Nico sleeves) should be inspected.

How to Look

Make sure you are wearing tough work gloves. Wrap a cotton cloth gently around the wire lift line and either operate the Acrobat or manually work your way along the cables. If there are snags or other damage developing, the cotton cloth will catch on them. Visually inspect the wire lift line for signs of abrasion, corrosion and discoloration.

How What to Look For

Lift lines must be inspected periodically for signs of wear. Visually inspect the wire rope, looking for broken or flat wires, corrosion, excessive wear or signs of chemical etching. Make sure the wire lift line is not rubbing against anything at any point along the run, and that it is free of dirt and grease. Cable thimbles and loops should continue to hold their shape and not be elongated.

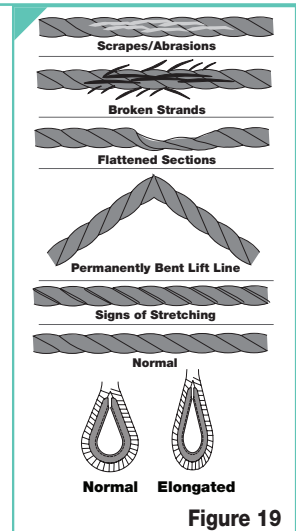


Figure 19