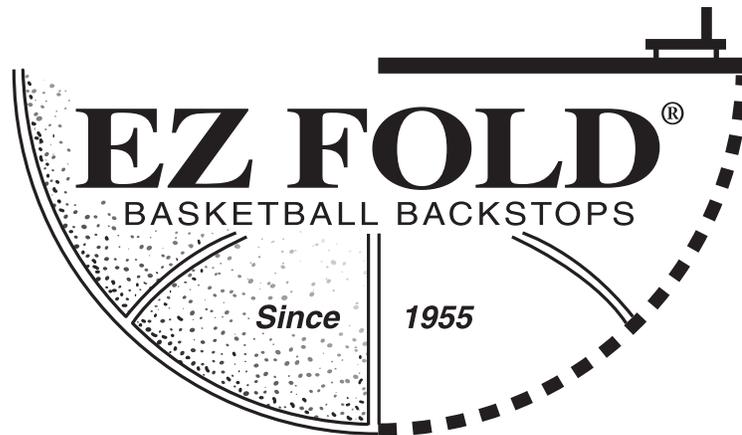


# DRAPER



## Installation Instructions Wall Mounted Basketball Backstops

# DRAPER®

411 S. Pearl St., Spiceland, IN 47385 USA ■ 765-987-7999  
www.draperinc.com ■ fax 765-987-7142

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*If you encounter any difficulties installing or service your EZ-Fold® backstop, call your dealer or Draper, Inc., Spiceland, Ind., (765) 987-7999 or fax (765) 987-7142.*

**Caution**

- ① When laying out parts, be careful not to place them where they may be in the way of scaffolding, lifts, or working areas.
- ② Before beginning assembly, locate and identify all parts using hardware list and project drawings.
- ③ Backstops must be installed level and plumb.
- ④ Make sure power is disconnected before wiring winches.
- ⑤ Do not install damaged or defective parts.
- ⑥ For warranty information, consult separate information sheet.
- ⑦ When calling Draper, Inc., with questions, please have your order number, and, if possible, project drawing that was provided with your backstop.
- ⑧ **Have architect/general contractor verify backstop and court line locations prior to beginning installation.**

*These instructions are meant as a guide only. They do not bind Draper, Inc. in any way and do not imply any responsibility of Draper, Inc. for improper installation or faulty workmanship at the jobsite.*

**Installation Tips**

- ① When possible, install bolts with heads toward floor (threads up), or with heads toward front (threads facing rear of backstop).
- ② Use your project drawings, which will tell you everything from exact locations to what clamps to use. If the drawing is to scale, the scale can always be found at the bottom of the drawing.
- ③ Dimensions are referenced from Face of Bank, Center Line of Court or Center of Clamp. Refer to project drawings for dimensions. Remember to account for offset dimensions (Center of Clamp to Edge of Clamp) when marking beams for clamp placement.
- ④ Prior to assembly, distribute parts to the correct backstop locations; make sure you have the proper parts for each backstop location.
- ⑤ All Draper Gymnasium Equipment is supplied with Grade 5 hardware. Clamps are designed to be installed with the nuts and bolts "tight." Draper would consider tight to be torques between 40 ft-lbs and 60 ft-lbs.

**How to Use This Manual**

This manual covers installation of all Draper EZ-Fold® wall-mounted backstops, and is designed to be used in conjunction with project drawings. Project drawings show clamp numbers and positions for each backstop. Begin at step 1, the top, and work your way down, following instructions for clamps provided for each specific installation.

**Tools Needed**

- Block and tackle
- $\frac{9}{16}$ " and  $\frac{3}{4}$ " wrenches, or socket wrenches, sizes  $\frac{9}{16}$ " and  $\frac{3}{4}$ "
- Chalk line
- Plumb bob or laser plumb pointer
- Tape measure (minimum 100')
- Needle-nose pliers
- Screwdrivers (Phillips and flat-head)
- Allen wrenches
- Impact tool
- Scaffolding and/or lift
- Carpenter's Level
- Electric drill ( $\frac{9}{16}$ " and  $\frac{9}{32}$ " bits)
- Electric saw
- Wire cutters

**Operation**

- ① On wall-mounted folding models (DGW and DUW), make sure the walls are cleared of any obstructions to proper operation.
- ② Make sure manual winches are located close to backstop, or at least in a position that allows the operator to see the backstop being raised or lowered.
- ③ Winches should be operated by qualified personnel. Locate winches where they are not easily reached, and keep manual or portable electric operators secured when not in use.
- ④ Use winches only for their original purpose; if equipment changes are necessary, contact Draper, Inc.
- ⑤ If you encounter a problem during installation or operation of your backstop, contact Draper, Inc. immediately.
- ⑥ Make sure wall is strong enough to support backstops.

**Maintenance/Inspection**

NOTE: EZ-Fold® backstops by Draper, Inc., are designed to operate for many years with a minimum of maintenance. However, you should periodically inspect your wall-mounted backstops to ensure they are in good repair and operating properly. Check backstops at least twice a year, depending on amount of use. You will find on page 10 a maintenance checklist. Detach, make copies, and hang this list in a convenient location to help keep track of inspections and repairs. If you encounter problems, or need to replace any parts, contact your dealer or Draper, Inc.

**Wall/Wood Pads**

- ① Check wall inside and out for cracks, crumbling mortar, or other signs of damage.
- ② Make sure wood wall pads are not pulling away from the wall.
- ③ Inspect wall pads for splits, chips, or other signs of damage or excessive wear. Make sure they are still strongly anchored, and that there has been no slippage.
- ④ Check hardware attachments to wood wall pads. Make sure there is no corrosion, and that all attachments are still tight.

**Legs/Braces/Supports**

- ① Inspect chain supports for corrosion, cracks, links pulling apart, or other signs of damage or excessive wear.
- ② Make sure chain swivels operate smoothly, and that they have not been bent out of shape.
- ③ Check leg attachments for DGW and DUW. Make sure they are not bent, and that the legs operate smoothly.
- ④ Inspect brace and leg attachments for SW and SWD models. Make sure they are still tightly attached, and there is no movement up and down or side-to-side.
- ⑤ Check telescoping cross-brace on DGW; make sure spring-loaded locking mechanism is functioning properly.
- ⑥ Make sure legs are still level, and that there are no cracks, dents, or bends. Also check for corrosion.

**Winches**

- ① Examine cable drum on winch for excessive wear or looseness. Ensure cable is wrapping correctly, and that "stacking" (cable wrapping unevenly in layers) does not occur.
- ② Inspect manual winch adaptor and socket on hand or electric operator for excessive wear (rounding of edges).
- ③ Check safety lock to make sure it keeps Manual Winch Adaptor in place.

- ④ Make sure winch is still properly mounted. If winch has slipped slightly, correct and tighten bolts using an impact wrench.

**Please Note:** Draper EZ-Fold® winches are self-lubricating. No periodic application of grease or oil is required.

### Cable Run

- ① Check cable sheaves for excessive wear or looseness. Make sure cable is still passing properly through the sheave.
- ② Inspect cable clamps for tightness; Make sure there is no slippage.
- ③ Check aircraft cable for fraying. (Hint: One way to do this is by running an oily rag along the aircraft cable. The rag will snag on frays; it will also lubricate the cable.) If fraying is encountered, contact your dealer or Draper, Inc. for replacement. **Caution: Wear gloves when searching for frays.**

### Backstop/Accessories

- ① Inspect backstop legs and frame. Make sure all bolts and clamps are tight and have not shifted. Check for cracks, corrosion, or other signs of damage or excessive wear.
- ② Make sure Side Braces are still at proper length.
- ③ Check Height Adjuster for loose clamps, or binding that keeps it from operating correctly.
- ④ Lubricate Inner Tubes of Height Adjusters with petroleum jelly.
- ⑤ Inspect bank and goal for cracks or bending. Also make sure top of rim is still 10' above the floor, and level.
- ⑥ Check padding for tears, missing pieces, or loose sections. Re-glue if necessary.

## Winch Attachment/Wiring

### ⚠ Caution

- ① As with any lifting device, the installation shall be made only by persons suitably experienced and qualified for work on hoisting equipment, in accordance with local requirements.
- ② The electrical supply and connection to the winch shall be made in accordance with local electrical code and by qualified personnel.
- ③ The instructions address the areas of proper mounting, rope installation, wiring and limit switch adjustment, but they are not intended to cover every aspect of installation of your hoisting system, nor to replace the need for normal good care, workmanship and proper practices on the part of the installer. Read all instructions prior to installation and use.
- ④ This unit is intended for indoor use only.
- ⑤ Use appropriate lock-out and tag-out procedure when installing unit.

### Hardware packet includes:

Description	Quantity
Washer, Flat, 1/2" x 1 3/8"	4
Flange Lock	4
Nut, Hex, 1/2"	4
Screw, Hex head, 1/2" x 2 1/2"	4
Screw, Square head, 3/8" x 1/2"	2
Half Clamp, Pipe, 3"	2

### Tools needed:

- Twelve point socket 3/4" six or Socket drive
- 3/4" combination open/box end wrench
- 3/8" eight point socket
- 0-100 ft lb torque wrench
- Center punch & drive hammer
- 3/8" twist drill
- Cordless drill motor
- #3 Phillips screw driver

The clamps provided are designed for 4" tube (4" outside diameter) or 3" pipe (3 1/2" outside diameter).

- ① The basketball backstop must be in its down position for installation of the winch. Locate the installation position of the winch. It is important that the winch be located a proper distance from the closest pulley or attachment point. This is based on the total travel distance of the cable pulled by the winch. Generally speaking the greater the amount of cable drawn, the greater the distance needs to be. For any length of cable, the formula is 4 inches of offset per foot of cable drawn. (See winch drum chart).

### Winch Drum Chart

Cable payout in feet	# turns	IN. Linear travel on drum	Min drum to pulley distance
10	8.6	2.4	48
15	12.9	3.6	60
20	17.1	4.8	72
25	21.4	6.0	86
30	25.7	7.2	103

### Technical Information

WEIGHT	68 LBS
LENGTH	22.85 in
WIDTH	12.75 in
HEIGHT	13.45 in
POWER VOLTAGE	120 AC
CURRENT	11.5 FLA
FREQUENCY	60 HZ
DUTY	Intermittent 10 min.
CAPACITY	1000 LBS Max
TRAVEL	35 Feet
SPEED	9 ft/min Max

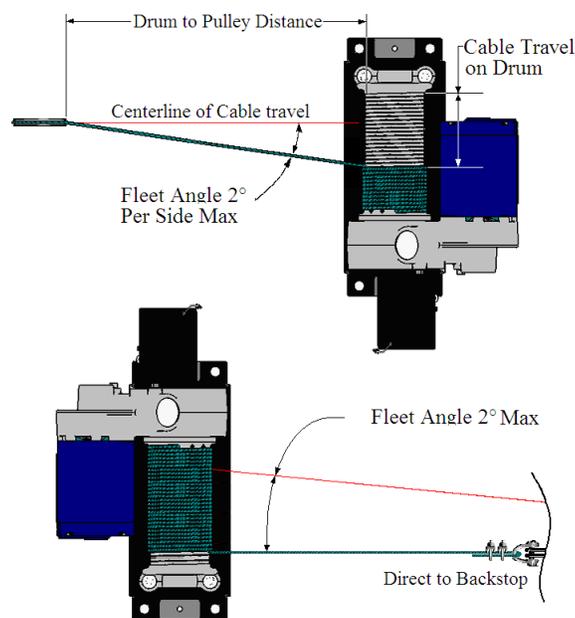


Figure 1

Determine the installation angle of the winch. During the full range of motion of the backstop, the cable must not ever rub on any part of the winch or backstop structure.

Cable needs to feed in within a 90 degree arc. The white cable pinch roller works best when the cable is fed in low.

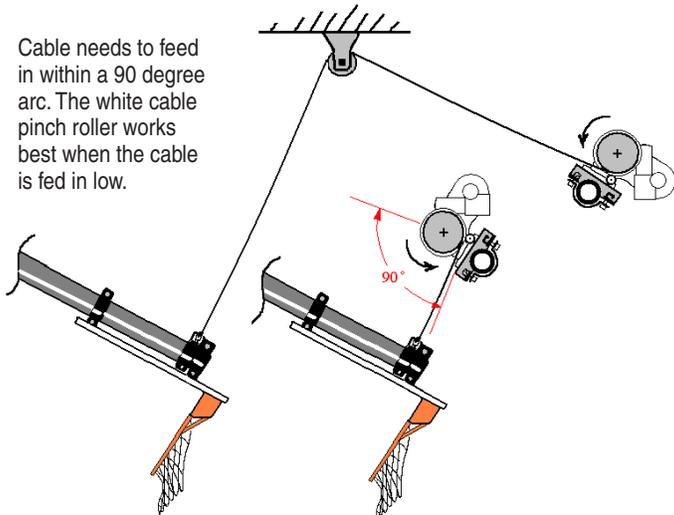


Figure 2

- ② Attach one half of each pipe clamp to the base plate of the winch as shown. This is so that you can place the winch on the mounting structure pipe and have the clamps handy for assembly.

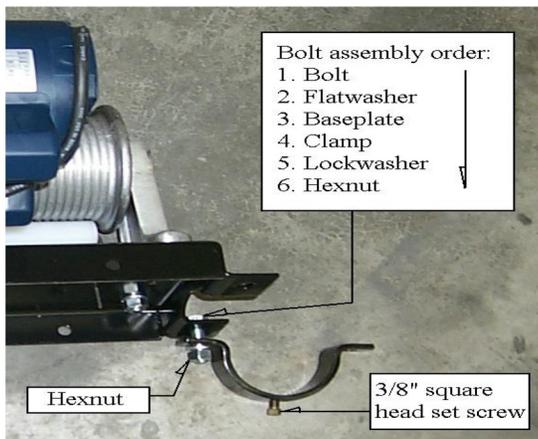


Figure 3

- ③ Insert the second set of bolts and washers into clamps and base plate.



Figure 4

- ④ Position the winch and hand tighten the bolts so that the winch will remain in position on the pipe.
- ⑤ Mark pipe for set screw hole. Use the  $\frac{3}{8}$ " 8 point socket and drive handle to tighten the  $\frac{3}{8}$ " square head set screw against the pipe enough to dent the paint on the pipe.
- ⑥ Loosen the clamp bolts enough that the winch can be rotated and moved about 3" to one side.

- ⑦ Use center punch to mark and indent the centers of where the set screw upset the paint on the mounting pipe. This is so that you can drill an index hole in the pipe to prevent rotation of the hoist.

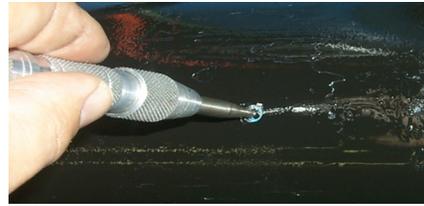


Figure 5

- ⑧ Drill the pipe with the  $\frac{3}{8}$ " drill so that the holes pierce completely into the interior of the pipe.



Figure 6

- ⑨ Re-position the winch clamps over the holes in the pipe and tighten the square head set screws into the holes in the pipe. Torque the set screws to 18 ft lbs.
- ⑩ Tighten the four half inch hex bolts that hold the clamps to the base plate. Torque the nuts on the hex bolts to 35 ft lbs.

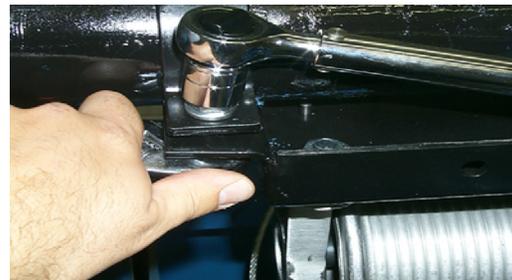


Figure 7

- ⑪ Connect winch to building or temporary power source.
- ⑫ If necessary, route cable as shown on backstop drawings.
- ⑬ Use only  $\frac{1}{4}$ " Galvanized Steel, 7 x 19 stranded wire Rope (per MILDTL-83420 or Equivalent). Assure the cable set screws are loosened enough to allow the cable to insert fully into the drum. Insert cable into socket in drum, and push through until the end is exposed on the opposite side of the drum.

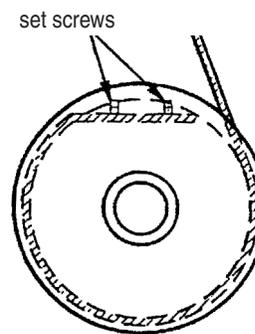


Figure 8

⑭ Torque both set screws to 7 ft. lbs.



Figure 9

- ⑮ Wind a minimum of two safety wraps of cable on the drum.
- ⑯ The cable must wind onto the drum following the grooves on the drum. It will only wind properly on the drum in one direction.



Figure 10

**WARNING: Cable winding on drum poses a severe pinch hazard! Use extreme caution while installing cable. Do not guide cable onto drum with hands; use proper tools. Do not damage or nick the cable in the process of winding it onto the drum. Do not wear loose clothing, long hair, jewelry, etc. When installing cable on drum, ensure that the opposite end of the cable is free. Do not attach cable to backstop until the hoist unit is installed and the cable wound on the drum.**

⑰ Attach far end of cable to the backstop. Leave 1"-2" of slack in cable.

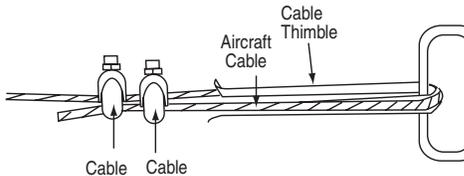


Figure 11

⑱ Lock out electrical power.

**WARNING: HIGH VOLTAGE! Setting the limit switches is a hazardous operation. To set the limit switches you must access the winch while the cable is installed. Lock out and tag the circuit breaker for this unit before adjusting the limit wheel settings. This prevents electric shock, and injury due to unexpected winch movement.**

⑲ Set limit switches. Loosen the retaining screw and remove the limit Box Cover.



Figure 12

⑳ Press the black index locking bar away from the down direction index wheel so it can rotate freely. Rotate the wheel until the switch "clicks" indicating that the switch is active.

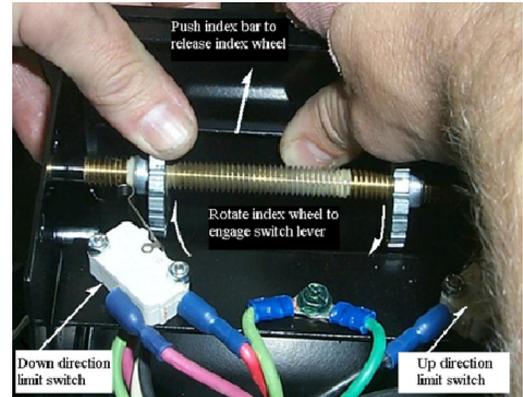
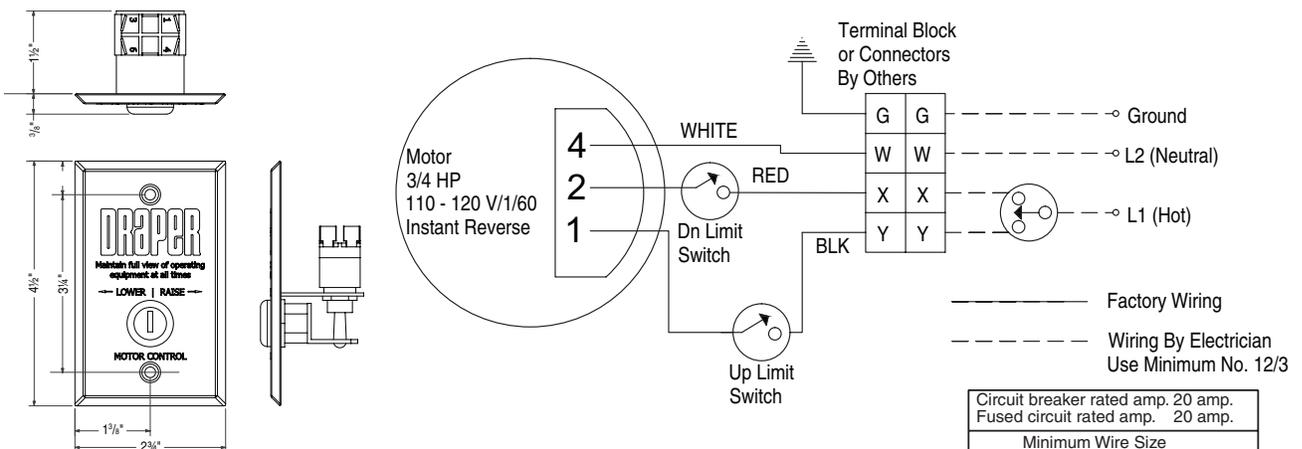


Figure 13

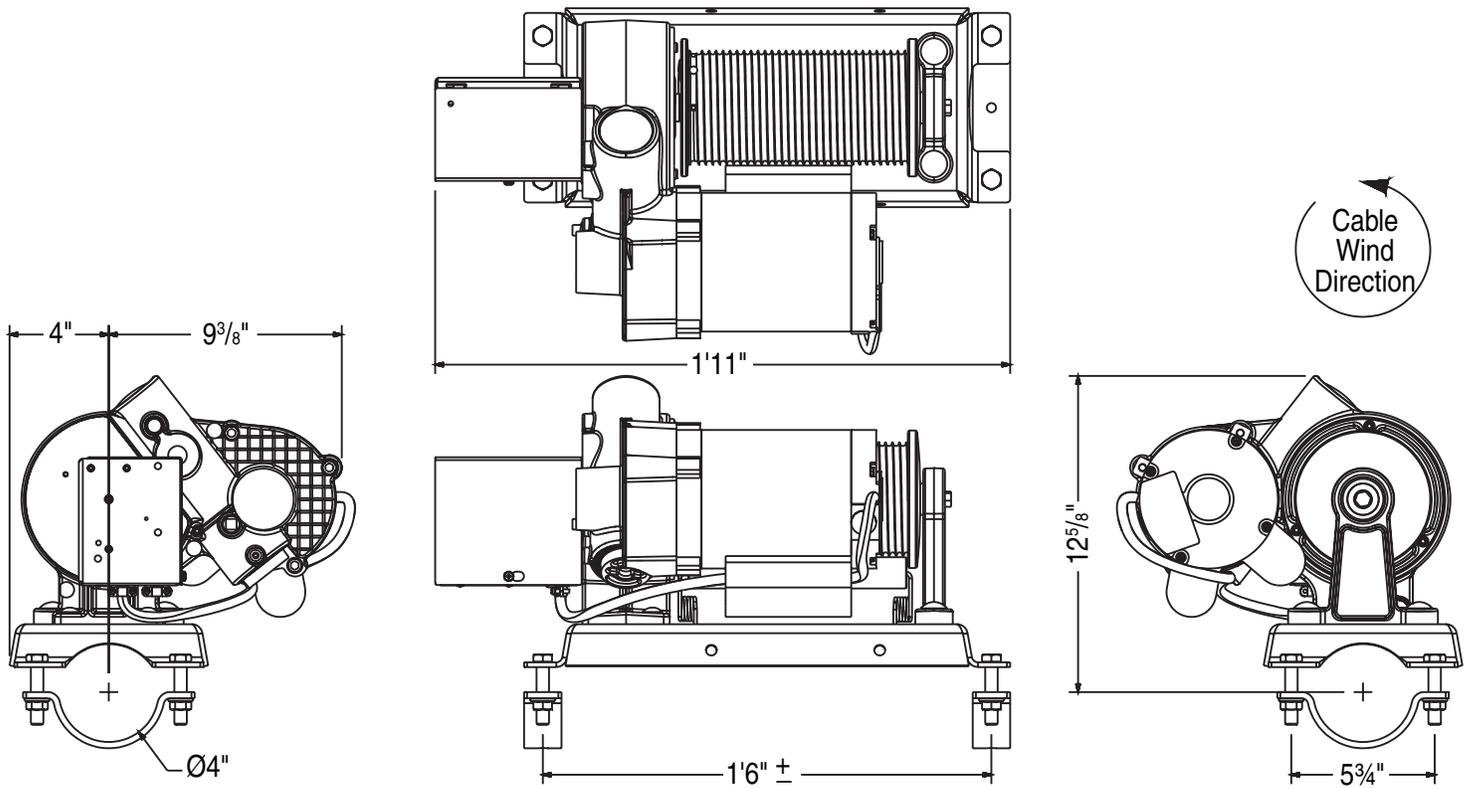
- ㉑ Unlock and restore electrical power. Twist the key switch in the down direction to verify the down switch setting. The winch should not move.
  - ㉒ Lock out electrical power and adjust the down direction wheel as necessary to obtain desired setting. The cable should have 1"-2" of slack in the down position.
  - ㉓ Estimate the amount of cable drawn when the backstop travels from the deployed (down) position to the stowed (up). The number of feet of cable is roughly equivalent to number of threads between the two index wheels.
  - ㉔ Set the Up Direction index wheel so that the two wheels are the same number threads apart as the cable travel in feet.
  - ㉕ Unlock and restore power.
  - ㉖ Operate the winch to raise the backstop to its stowed position. Since each rotation of the drum is about 14.2 inches, the winch should stop short of desired stowage; the drum rotates at the same speed as the limit shaft.
- WARNING: Always directly observe the movement of the backstop whenever operating, watching for mechanical interference!**
- ㉗ Remember to appropriately lock and unlock the electrical power. Adjust the up direction limit switch until the backstop is set.
  - ㉘ Place the cover on the limit box and secure the screw with a screwdriver.

**Wiring Diagram**



Circuit breaker rated amp. 20 amp.
Fused circuit rated amp. 20 amp.
Minimum Wire Size
90' maximum run..... 12 ga.
90' to 140' run..... 10 ga.
Over 140'..... 8 ga.
Sizes of wall masonry boxes required for single and ganged key switches--
All boxes 2" (w) x 3 3/4" (h) x 2 1/2" (d).

### Dimensions



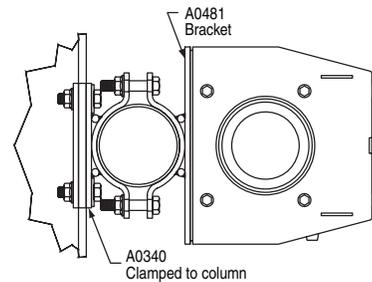
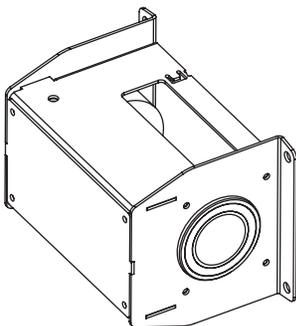
### Manual Winch

- ① Find location according to project drawings.
- ② Four <sup>9</sup>/<sub>16</sub>" diameter holes are provided for mounting the unit. The fastener type and size required will vary according to the type of mounting surface but must be adequate to safely sustain all loads imposed by the backstop system.

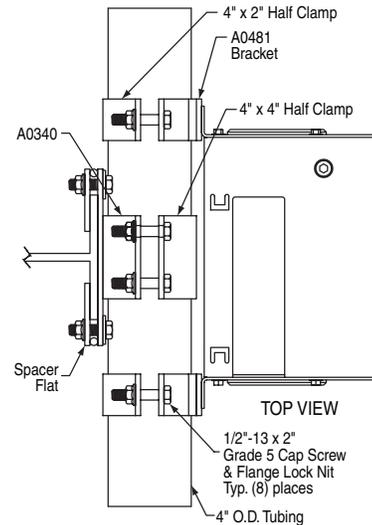
The Architect/ Engineer for the building should be consulted to determine the proper method and size of fastener necessary.

**Note: The winch is designed for standard <sup>1</sup>/<sub>4</sub>" diameter 7 x 19 aircraft cable and has a hollow drum, which makes rope attachment simple and reliable. The rope passes through a hole in the drum and is prevented from pulling out by doubling the end back on itself and securing with a standard rope clamp.**

- ③ Turn the winch handle to bring the wire rope mounting hole in the winch drum to the top.
- ④ Pass the wire rope end from outside the winch in through the rope port and then through the hole in the drum, into the center of the hollow drum. Pass enough cable through to allow you to pull the free end out the end of the drum.
- ⑤ Double the end of the cable back on itself and install the clamp supplied, tightening the nuts progressively to make sure that the clamp is fully secured.
- ⑥ Pull the rope back through the hole to snug the clamp back tight to the hole, inside the drum.
- ⑦ Wind on at least two turns of rope. (The pressure roller will lift by itself to allow the rope to pass under.) Make sure that the rope starts properly in its groove, to ensure even winding of the cable.



SIDE VIEW



TOP VIEW

## Installation Instructions

### Aut-O-Loc 2™ Safety Strap by Draper

#### Caution

- ① Use scaffolding or lift when attaching safety belt.
- ② Safety straps are recommended with all Draper EZ Fold® Ceiling-Suspended Folding Backstops.
- ③ If part of an installation which includes winches and backstops, place safety belt according to project drawings.
- ④ Install so safety strap does not interfere with backstop operation.
- ⑤ Draper provides clamps to attach safety strap to EZ Fold® Backstops; other brands require tie-off directly to the backstop.
- ⑥ Install so the strap pulls out straight and flat toward the backstop. Strap must move freely through the range of backstop motion and must not rub against anything as backstop moves; abrasion may cause strap failure.
- ⑦ Warning Tear Tab sewn in strap is designed to tear away if the unit is tripped. **Loop should not be used as an anchor point!**
- ⑧ Read all instructions prior to installation and use.
- ⑨ This unit is not a person fall protection device.
- ⑩ This unit must be replaced after catching a falling load.
- ⑪ Ensure all people are clear of backstop when operating hoisting equipment.
- ⑫ This unit is intended for indoor use only.
- ⑬ Use appropriate lock-out and tag-out procedure for backstop hoist when installing Aut-O-loc 2™.
- ⑭ During installation, use a tether on the Aut-O-Loc 2™ that will prevent the Aut-O-Loc 2™ from falling. Ensure that people are well clear of work area, and that no-one is underneath work platform. When installing unit ensure that work platform is stable and clear of moving equipment during hoist operation. Work platform (i.e. man lifts) may tip when extended to great heights. Make sure the work platform is clear of the backstop when testing the movement of the backstop and Aut-O-Loc 2™. Do not stand on work platform during movement of backstop.

*These instructions are meant as a guide only. They do not imply any responsibility on the part of Draper, Inc. for improper installation or faulty workmanship at the jobsite.*

#### List of contents in the box:

Description	Quantity
Aut-O-Loc 2™	1 each
Instruction Set	1 each
Hardware packet containing:	1 each
Nut, Hex 3/8" Flange Lock	1 each
Nut, Hex, 1/2" Flange Lock	2 each
Nut, Hex 5/8" Flange Lock	1 each
Bolt, 3/8" x 3"	1 each
Bolt, 1/2" x 3"	1 each
Bolt, 1/2" x 4"	1 each
Bolt, 5/8" x 4 1/4"	1 each
Clamp, Strap, Buckle	1 each
Clamp, Pipe (for belt buckle)	1 each

#### Following is a list of necessary tools:

- 3/4" six or twelve point socket
- 3/4" combination open/box end wrench
- 9/16" socket & wrench (open or adjustable)
- 15/16" socket & wrench (open or adjustable)
- 5-100 ft lb torque wrench

#### Installation

- ① The basketball backstop must be in its deployed (down) position for installation of the Aut-O-Loc 2™.
- ② Locate the Aut-O-Loc 2™ just above and as close to the pick up point on the backstop mast as possible. The warning tear tab should be just below the white roller guides at the bottom of the Aut-O-Loc 2™ when the backstop is in the fully raised position.

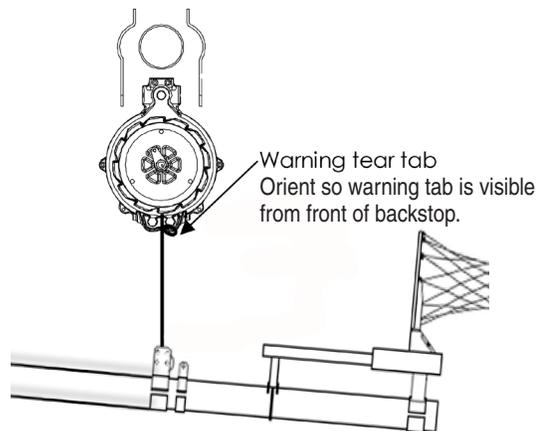


Figure 1

- ③ The Aut-O-Loc 2™ must be mounted in the center plane of backstop motion and the belt should not angle to the side or rub against any surface. Maximum belt side angle should not be greater than 1° at maximum belt payout.

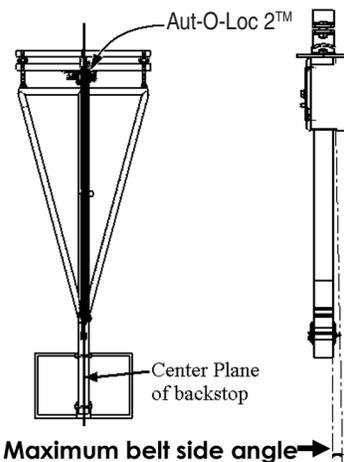


Figure 2

- ④ The Aut-O-Loc 2™ strap should be clear of obstructions throughout its sweep. These angles are installation dependant.

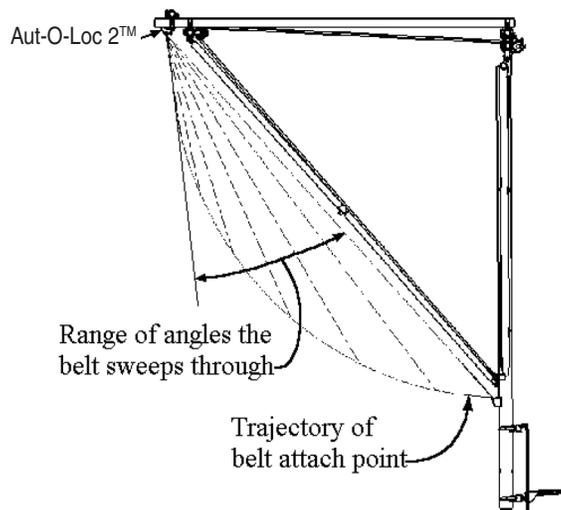


Figure 3

- ⑤ Insert  $\frac{1}{2}$ " x 3" bolt in top clamp hole and finger tighten into opposite half clamp using  $\frac{1}{2}$ " lock washer and nut. Place clamp over mounting pipe. Lift Aut-O-Loc 2™ unit up to clamp, insert  $\frac{5}{8}$ " x  $4\frac{1}{4}$ " bolt through bottom hole in both clamp halves and Aut-O-Loc 2™ unit and finger tighten using  $\frac{5}{8}$ " lock washer and nut. If attaching to  $3\frac{1}{2}$ " OD tube, insert  $\frac{1}{2}$ " x 4" bolt in middle clamp hole and finger tighten using nut and lock washer. Position the Aut-O-Loc 2™ and hand tighten all bolts so that the Aut-O-Loc 2™ will remain in position on the pipe.

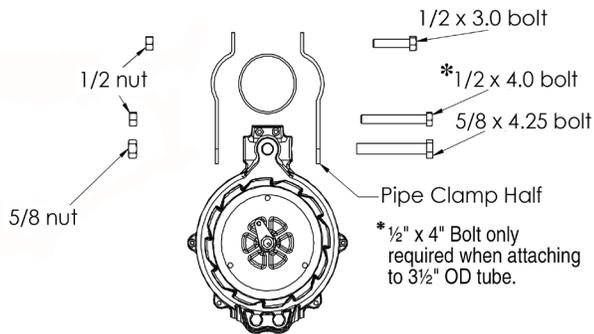


Figure 4

- ⑥ Stretch belt out and attach to mast. Use following steps to properly install belt clamp.

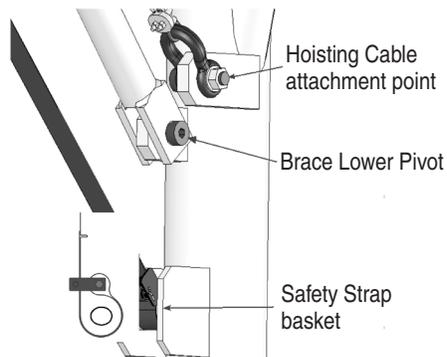


Figure 5

- ⑦ Wrap end around mast attach point. Place sewn tail of belt loop on the outside of the loop. Insert bolt through the clamp and clamp tube and tighten Nyloc nut on opposite side.

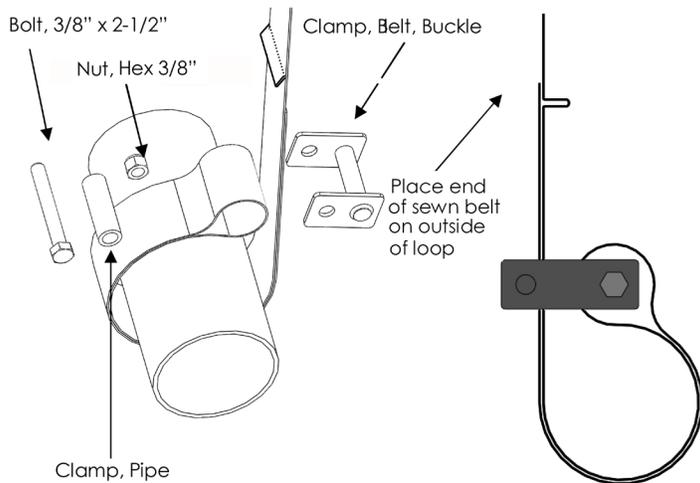


Figure 6

- ⑧ Tighten the top and middle  $\frac{1}{2}$ " clamp nuts to a torque of 35 ft lbs.  
⑨ Tighten the bottom  $\frac{5}{8}$ " clamp nut to a torque of 45 ft lbs.

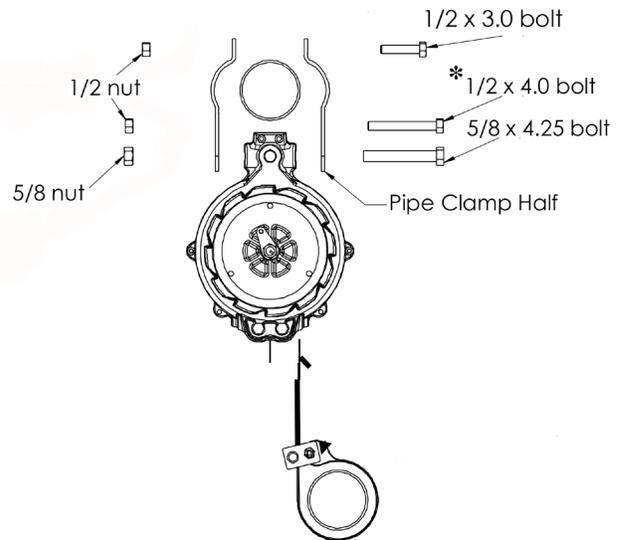


Figure 7

\*  $\frac{1}{2}$ " x 4" bolt only required when attacking to  $3\frac{1}{2}$ " OD tube.

- ⑩ Tighten the  $\frac{5}{8}$ " bolt so the pipe clamp is tight against the surface of the cast housing and the lock washer is compressed.  
⑪ Check belt clamp assembly, tighten  $\frac{3}{8}$ " nut to 22 ft lbs torque. Run backboard through a complete up and down cycle to assure unit is working properly.

**Backboard padding.**

NOTE: This step can be completed at any point during installation; the most convenient time is during bank/goal assembly, prior to bank attachment.

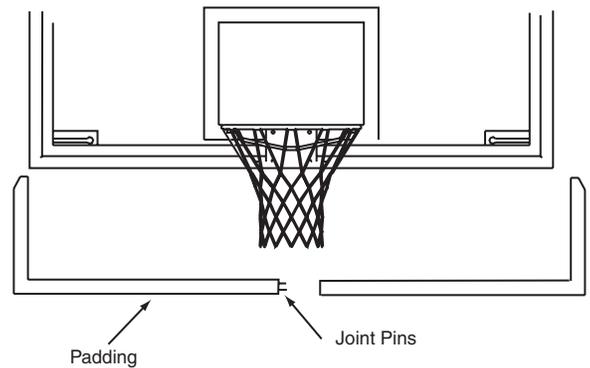
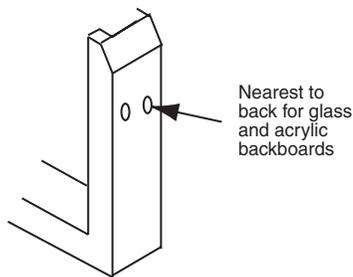
**A0253/A0264 (glue-on:)**

- ① Hold each half of pad in place and mark pads for trimming around support structure (if required).
- ② When required trimming is complete, apply coat of glue to inside of padding. Allow glue to dry until it becomes tacky (less than a minute).
- ③ While glue is drying on padding, apply a coat to the backboard.
- ④ Attach padding to backboard.

**A0142 (bolt-on)**

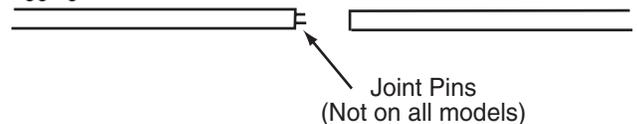
- ① Hold each half of pad in place and mark pads for trimming around support structure (if required).
- ② Trim pads.
- ③ Hold pads in proper position and mark holes for drilling into board framework (8 holes per backboard). Make sure the holes closest to the center of the backboard (under the rim) are positioned so that the pads join fully in the middle.

**CAUTION: On all glass or acrylic backboards, use holes nearest the rear of the backboard to avoid possible damage.**



- ④ Drill holes (minimum 1/4", maximum 5/16") at marked locations. Drill completely through all framework structure.

- ⑤ IF PROVIDED: Use joint pins in pad half ends to eliminate sagging.



- ⑥ Attach pads using appropriate screws (three sizes provided). Make sure all washers and lock washers are used, to avoid loosening.
- ⑦ If needed, trim for goal clearance. (Some backboard and goal combinations will require extra trimming of pads to provide for goal clearance.)

**CAUTION**

Glue used to attach Draper backboard padding is extremely flammable. Keep away from heat and flame. Keep out of reach of children. Avoid prolonged exposure to fumes: Use in a well-ventilated area.

**Before leaving the jobsite:**

- ① Touch up any scratches caused during installation or shipping.
- ② Remove tools and scrap from jobsite.
- ③ Ensure all backstops are level and in accordance with measurements on project drawings.
- ④ Tighten all bolts, and ensure that backstops are ready for use.
- ⑤ Verify that all backstops are functioning properly.
- ⑥ Set all limit switches on electric winches.
- ⑦ Coat Inner Tubes of Height Adjusters with petroleum jelly.
- ⑧ Make sure all chalk lines are wiped from floor.
- ⑨ Dispose of boxes and packing materials.
- ⑩ Explain proper winch and backstop maintenance and operation to the customer.

NOTE: If you encounter any difficulties installing or servicing your EZ-Fold® Wall-Mounted Backstop by Draper, Inc., contact your dealer or Draper, Inc. at (765) 987-7999 or fax (765) 987-7142.

# EZ-Fold® Wall-Mounted Backstops by Draper

Backstop Model: \_\_\_\_\_

## Inspection/Maintenance List

Backstop Number: \_\_\_\_\_

Periodically inspect your backstops and all related equipment and attachments. Frequency of inspections depends on use of the equipment. Use guidelines mentioned earlier in this manual when conducting inspections.

Below is a checklist to assist you in keeping a record of backstop inspections and maintenance. Cut, copy and post this page as a record of previous inspections and equipment repairs on each backstop. Place a checkmark or enter information in the appropriate box:

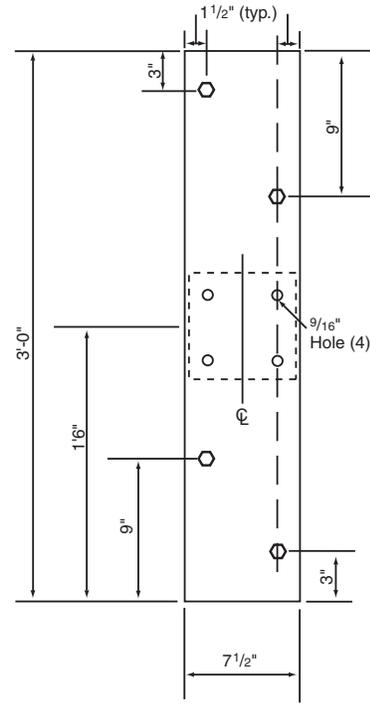
Inspection Item	Date	Satisfactory	Cleaned	Needs Repaired/Replaced	Problem Encountered
Winch Drum					
Winch Belt					
Winch Attachment					
Aircraft Cable					
Pulleys/Sheaves					
Back/Front Braces					
Side Braces					
Jackknife					
Wall Attachments					
Chains					
Turnbuckles					
Cable Clamps					
Backstop Clamps					
Hangers					
Frame					
Height Adjuster					
Goal					
Bank					
Backboard Padding					
Finish					
Nets					
Latches					

① Wood Wall Pad Installation

NOTE: Draper, Inc., is not responsible for wall strength. Attachment method to be determined by project architect/engineer.

Note: Drawings will show locations of wall pads. Before drilling, make sure there are no obstructions or electrical wiring where you will be drilling. Spread plastic throws on inside floor before drilling.

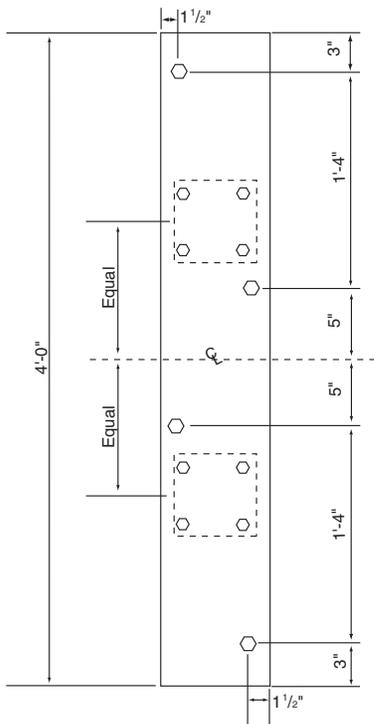
- ① Mark wall attachment locations on 0037 Wood Wall Pads (see figure at right). These may be adjusted to meet field conditions. (If thru-bolts are present, lay out holes to match bolt locations.) Drill four 9/16" diameter holes if anchor bolts are 1/2" dia. or larger, as needed.
- ② Position part to be attached to wood pad on center line. Mark hole locations, and drill required number of 9/16" holes.
- ③ Turn wood pad to unfinished side, countersink 9/16" holes so carriage bolt heads will be flush with wood pad (1 1/4" diameter x 1/4" deep).
- ④ Place wood pad against wall and mark wall where anchor holes are drilled in wood pad.
- ⑤ Drill holes in wall as required.
- ⑥ Install 1/2"-13 x 2 1/2" carriage bolts in 9/16" holes from back side of pad.
- ⑦ Place wood pad on wall and attach with type of wall bolt appropriate for field conditions.
- ⑧ Tighten wall bolts with hand wrench.



0037 3' Wood Wall Pad

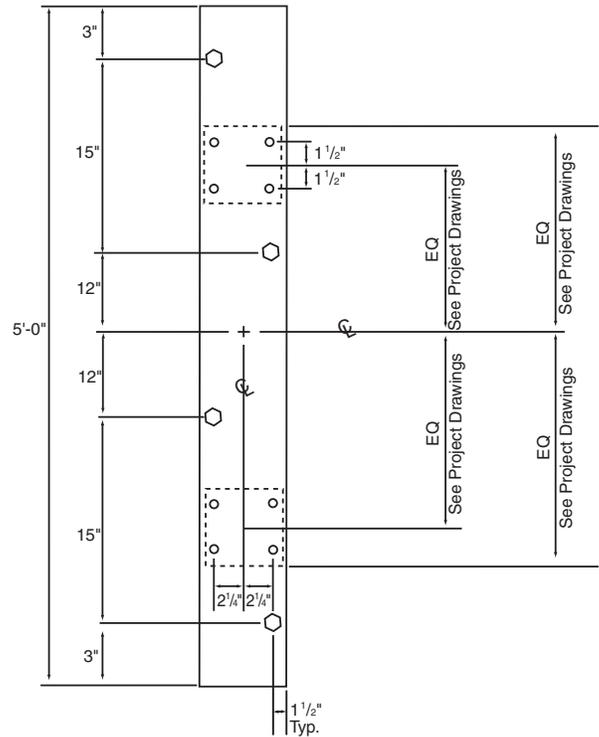
- ⬡ = Suggested wall mounting bolt locations.
- = Suggested hanger bolt mounting locations (9/16" dia.).

- ⬡ = Suggested wall mounting bolt locations.
- = Suggested hanger bolt mounting locations (9/16" dia.).



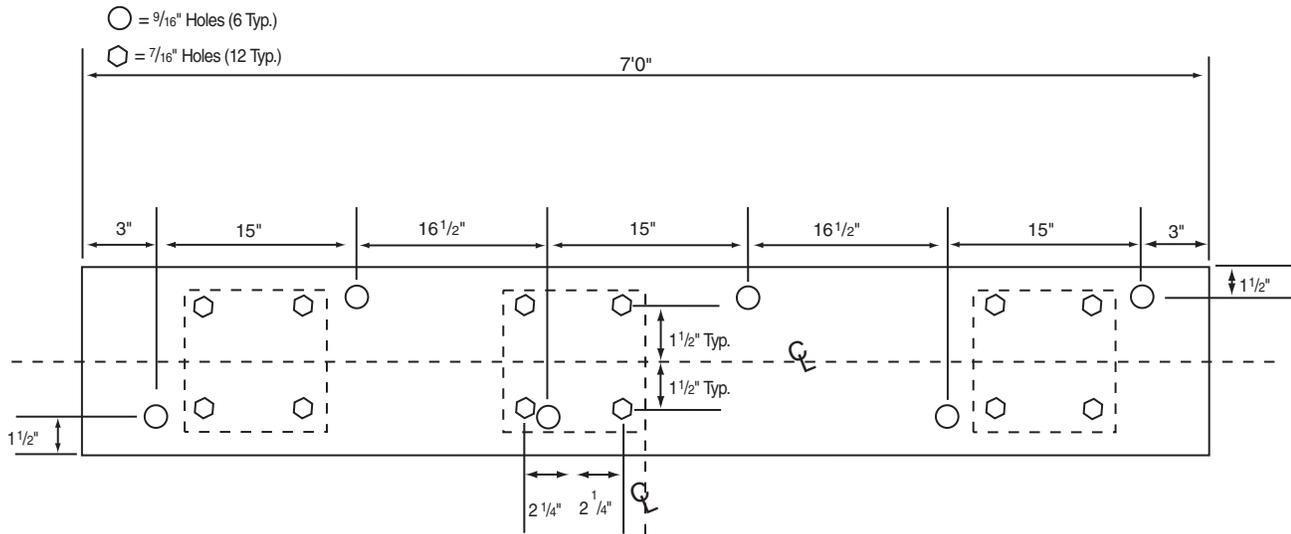
0302 4' Wall Pad

- ⬡ = Suggested wall mounting bolt locations.
- = Suggested hanger bolt mounting locations (9/16" dia.).

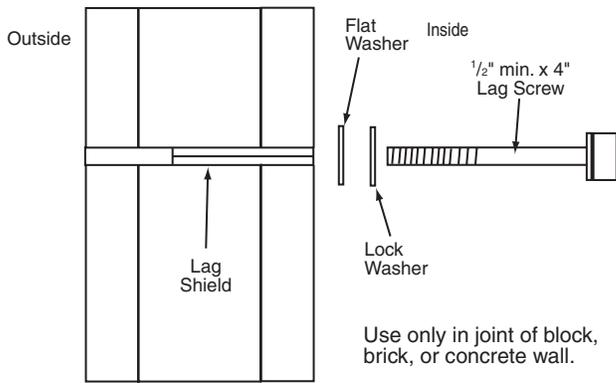


0274 5' Wall Pad

See next page for 7' wall pad. 5' and 6' wall pads also available. Contact Draper or see your project drawings.



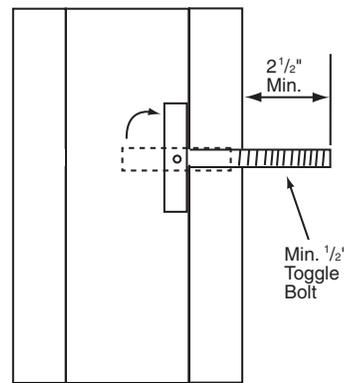
7' Wall Pad (for use with DUW)



Lag Screw with Lag Shield

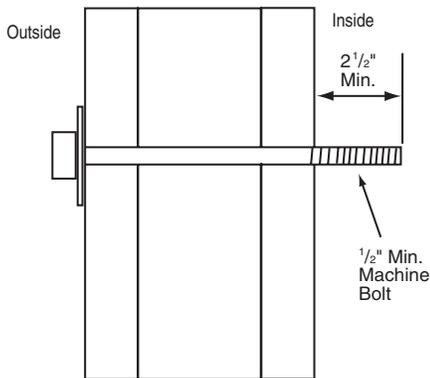
NOTE: Install Lag Shield first, using a hammer to sink it into pre-drilled hole.

Use only in joint of block, brick, or concrete wall.

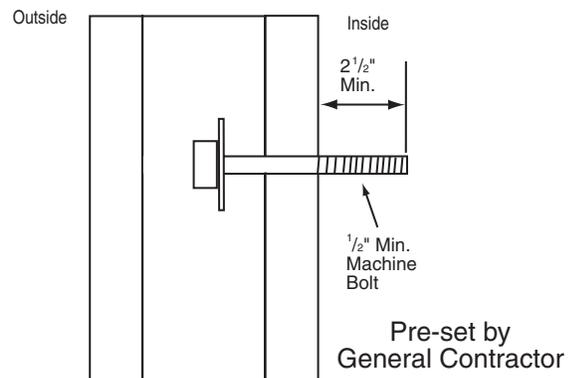


Toggle Bolt

NOTE: Insert Toggle Bolt into hole far enough to allow head to rotate, then pull flush against inside of wall.



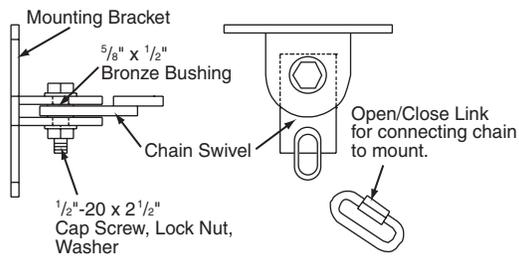
Through Bolt



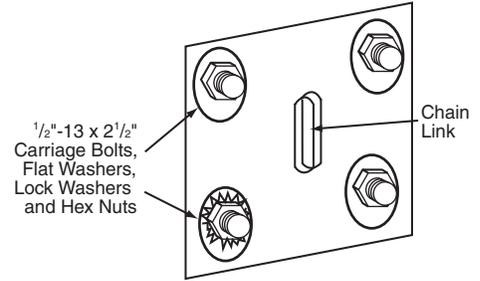
Set-in Bolt

**NOTE: Attachment method determined by project architect/engineer. Attachment hardware provided by others.**

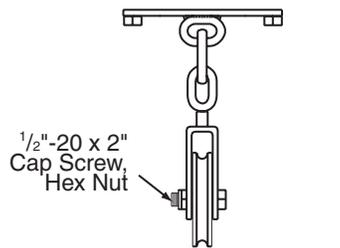
② Attach support mounts and Cable Sheaves to Wall Pads.



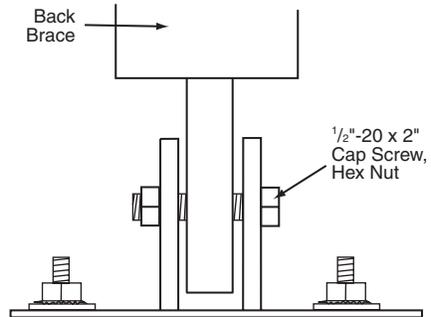
A0309 Wall Mount for DGW chain supports.



Wall chain mount for use with 7' wood wall pad on DUW and 36" Wood Wall Pad on SW extensions of over 3' and SWD.

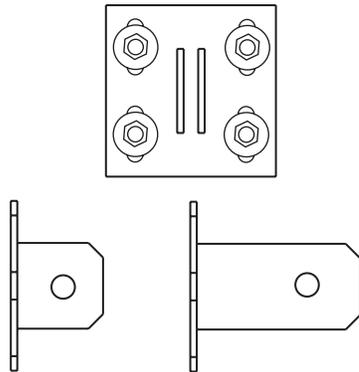


A0339 Cable Sheave for DUW.



A0301 Upper Back Brace Hanger for TSW

③ Install leg mounts to Wall Pads.

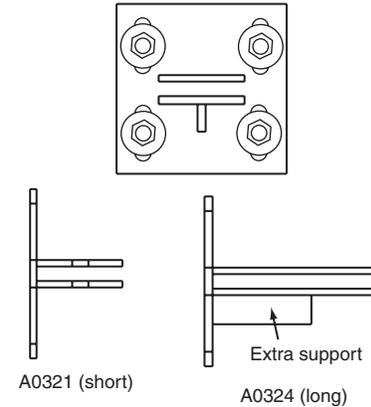


A0320 (Short)

A0323 (Long)

A0320/A0323 mounts for DUW.

NOTE: Install SHORT LUGS on the top legs.



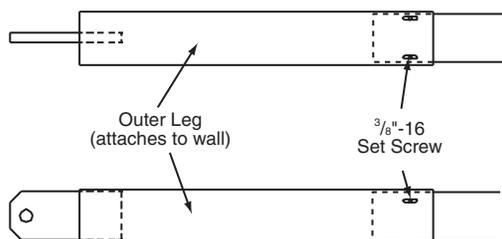
A0321 (short)

A0324 (long)

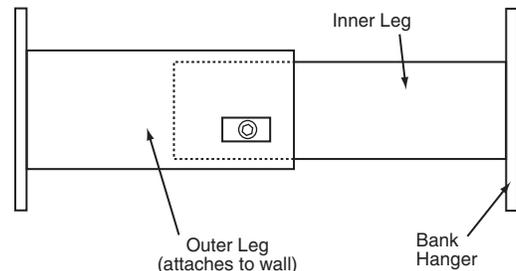
A0321/A0324 mounts for DGW.

NOTE: Install SHORT LUGS on side in direction of fold (right side for right fold, left side for left fold).

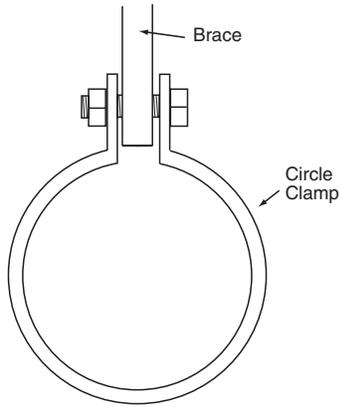
⑤ Assemble/attach Leg Frames.



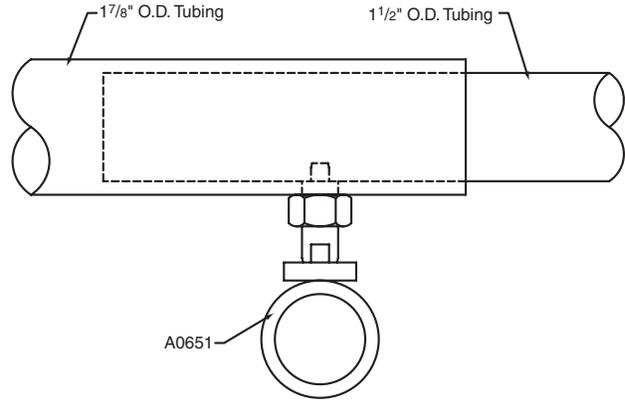
Leg for DGW and DUW.



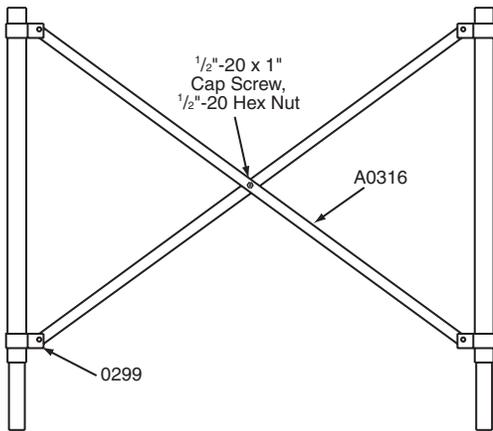
Leg for SW and SWD.



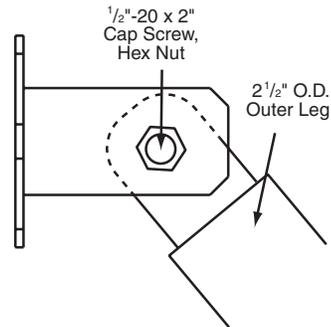
0299 Circle Clamp (for attachment of vertical Braces).



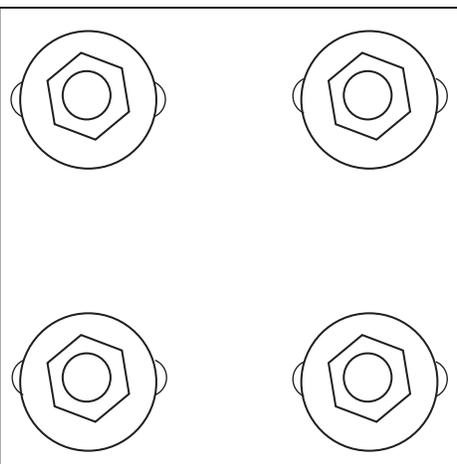
0651 (for attachment of horizontal Braces, including movable, locking Kick Brace on DGW).



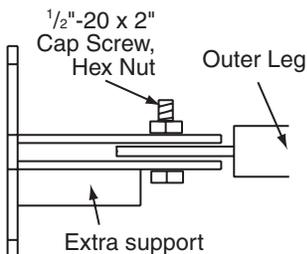
Cross Brace (top view), an example of horizontal braces on Wall-Mounted Frames.



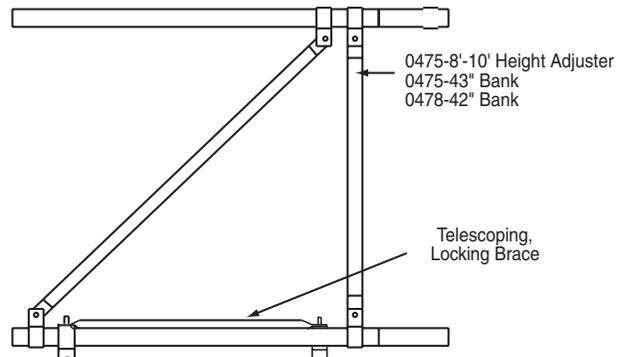
A0320/A0323 Leg attachment for DUW.



A0317 For use on SW/SWD

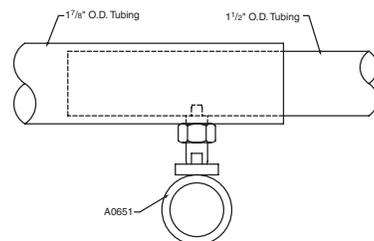


A0321/A0324 Leg attachment for DGW.

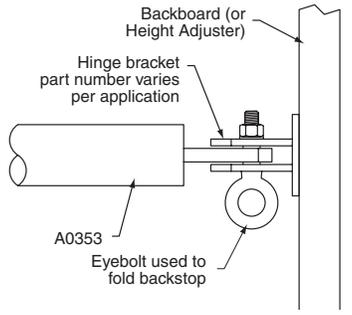


Example of vertical braces on Wall-Mount Frames (side view), including DGW telescoping, locking brace.

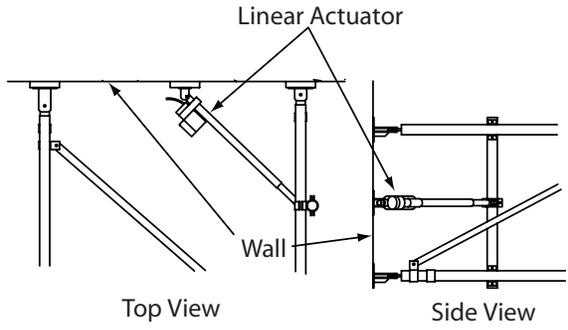
Please Note: To install telescoping brace, screw spring-loaded pin into hole provided on outer tube so that the head of the mechanism is toward the floor. Slip inner tube into outer tube. Spring-loaded pin will pop into place. To fold, use manual height adjuster crank to pull spring-loaded pin down, then manually push backstop toward wall.



A0651

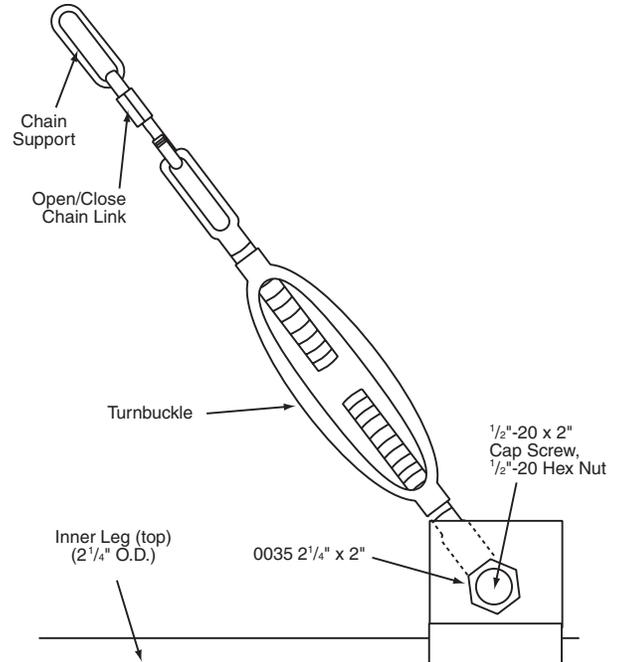


Eyebolt used to fold backstop (DGW).



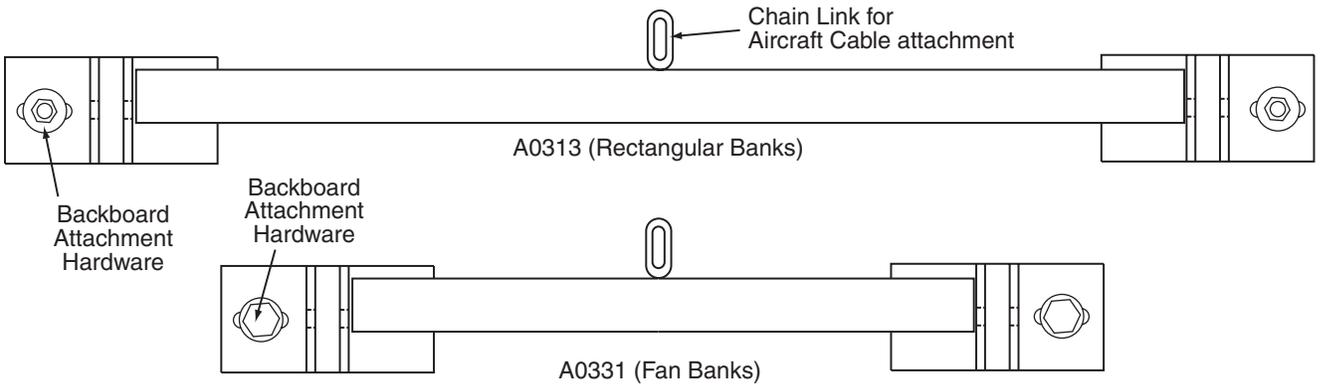
Linear Actuator used to fold backstop (DGW-E).

⑥ Attach Chain Supports to Backstop (SW, SWD, DGW, and DUW).

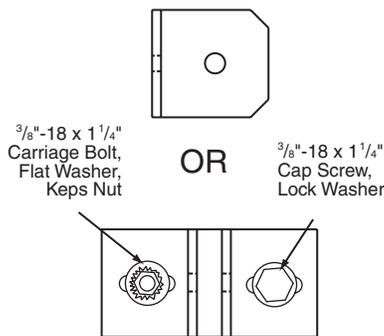


⑦ Attach Bank Hangers to Bank.

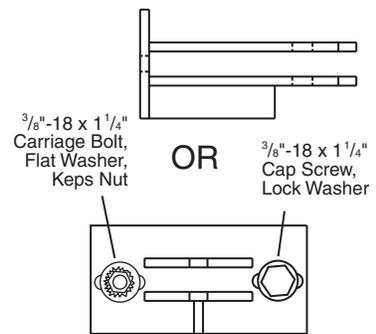
NOTE: If installing a Height Adjuster, see separate assembly instructions. If this is an SW model, skip this step.



Upper Bank Hangers for DUW (NOTE: some Fan Banks require Carriage Bolts).



A0315 DUW Short Bank Hangers (for bottom).



A0355 DGW Long Bank Hanger (for side in direction of fold).

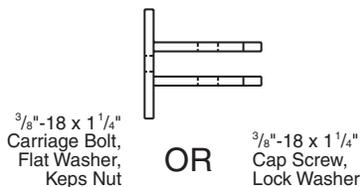
NOTE: All Bank Hangers use same Carriage Bolt or Cap Screw combinations.

⑦ Assemble and attach Height Adjuster or Goal Brace (SWD), Bank, and Goal. (See separate instructions for Height Adjuster assembly.)

NOTE: You cannot use a Goal Brace and Height Adjuster on the same backstop.

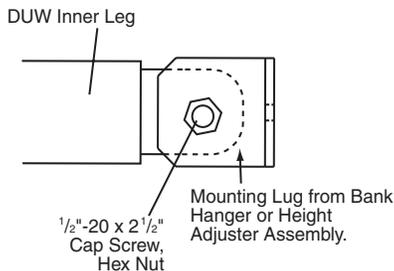
① Bolt Goal to Bank and Goal Brace (Direct Mount Goal Brace on SWD).

TIP: Assemble Bank/Goal/Height Adjuster/Goal Brace face down on sawhorses, then hoist and attach.

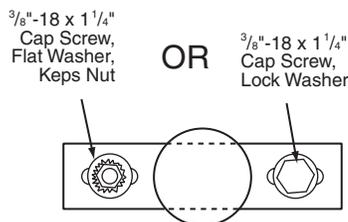


A0354 DGW Short Bank Banger (for side away from direction of fold).

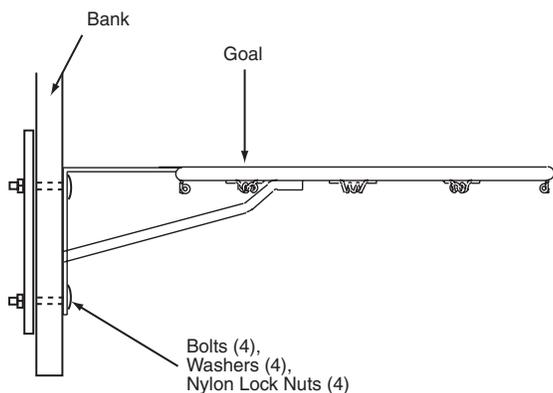
NOTE: Use lift to raise and attach Bank Assembly.



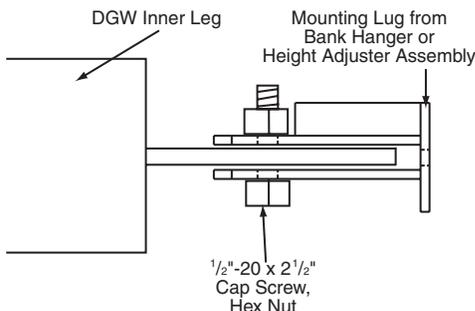
DUW Leg-to-Bank Assembly attachment.



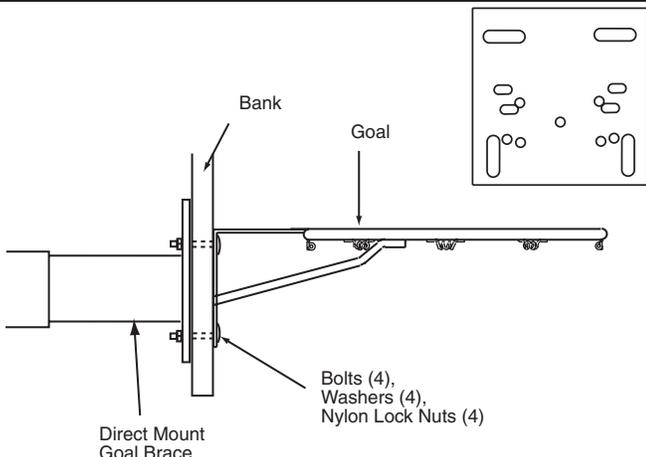
SWD/SW Leg-to-Bank Attachment.



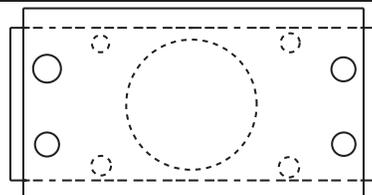
SW, DGW, and DUW Goal attachment.



DGW Leg-to-Bank Assembly attachment.



SWD Goal and Goal Brace attachment.

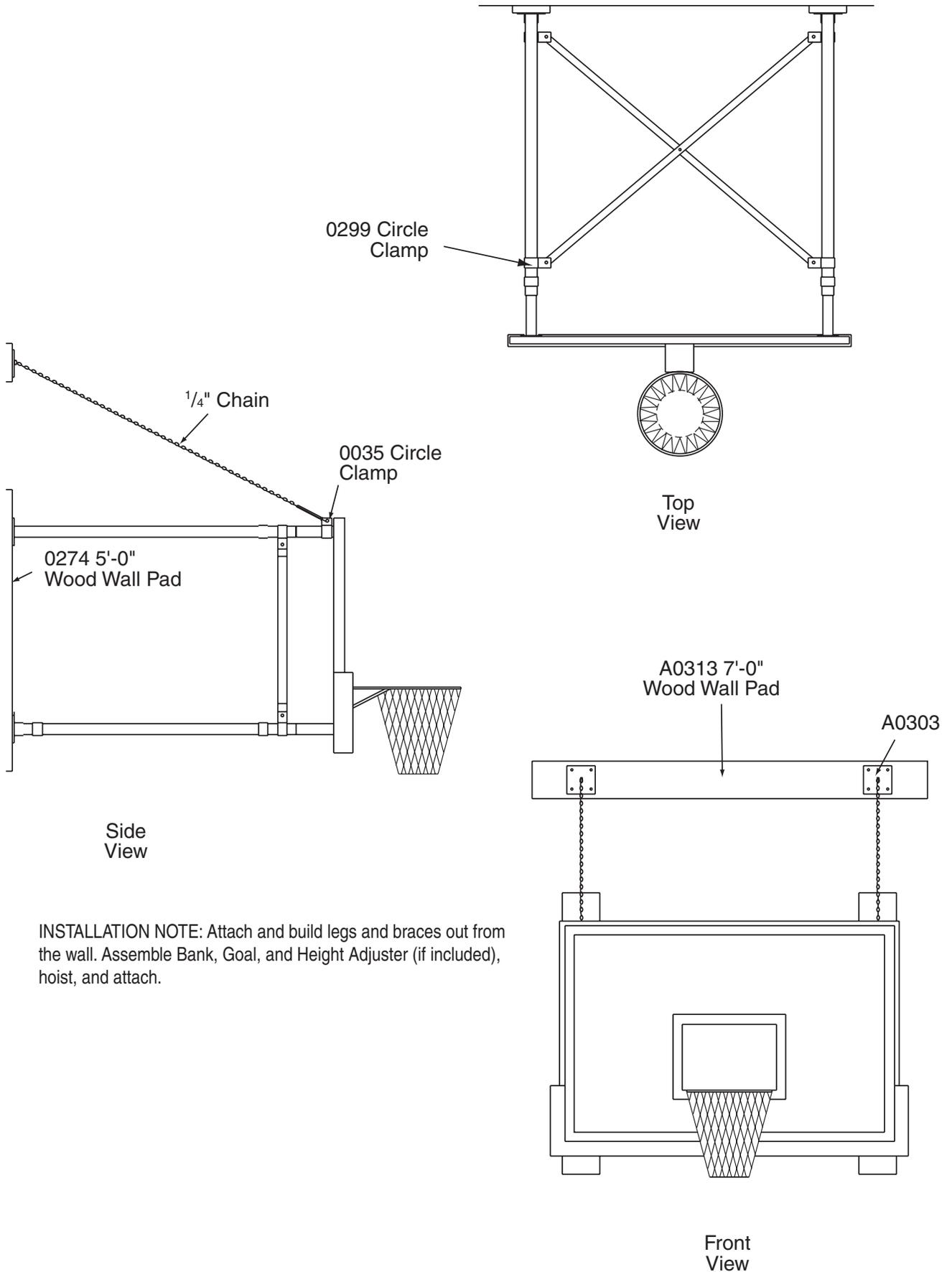


SWD Direct Goal Brace-to-Bank attachment.

**⚠ Caution: The maximum recommended torque when attaching the goal to the backboard is 60 ft/lbs. Exceeding 60 ft/lb of torque could cause damage to the backboard.**

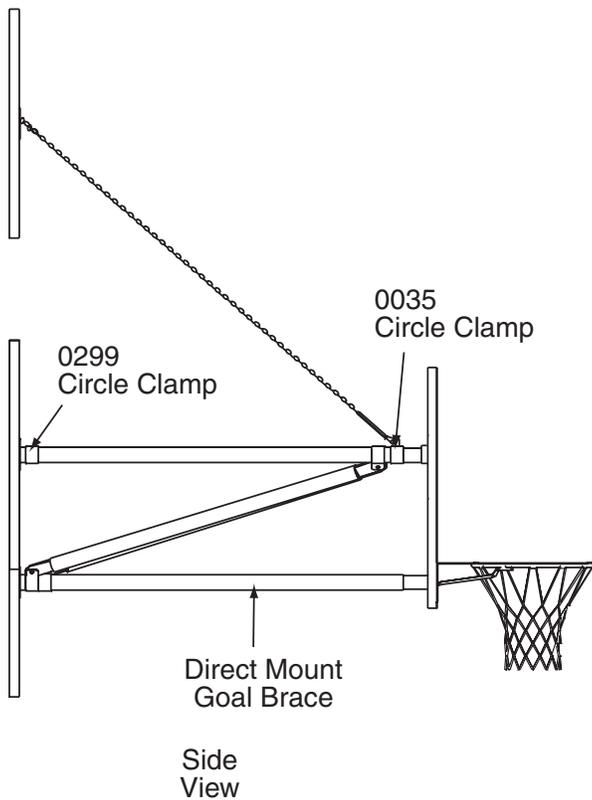
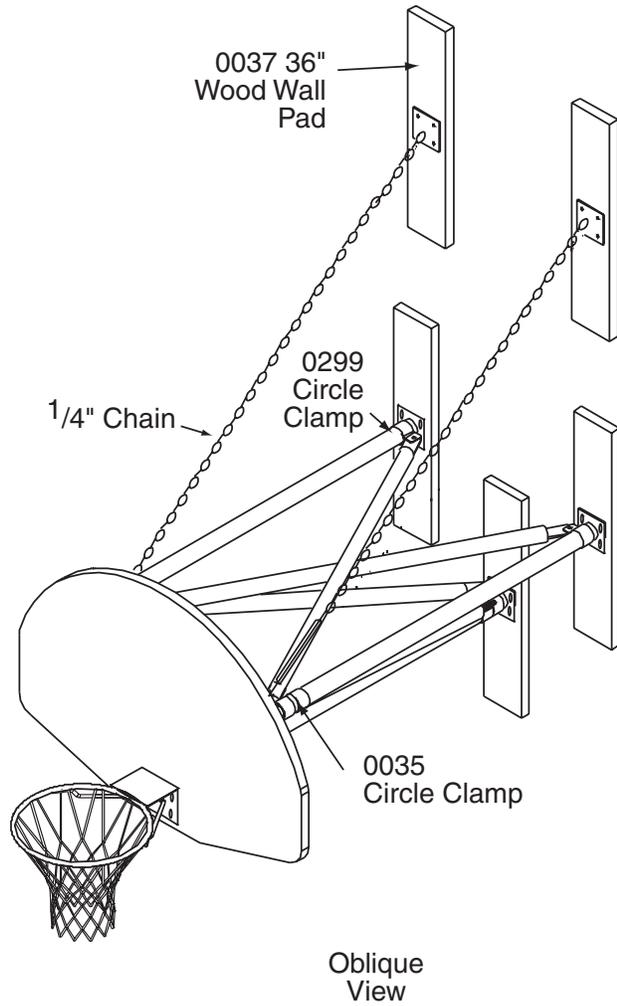
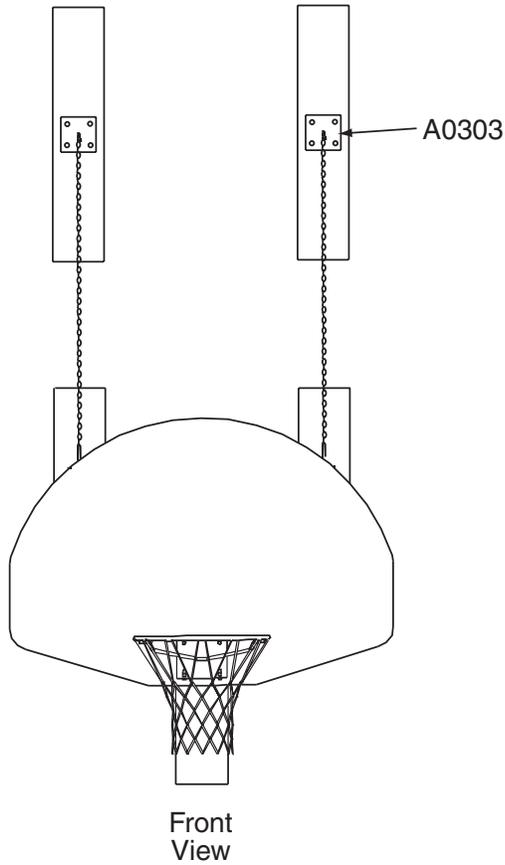
**Attention: On glass backboards, Goal Plate Bushings are properly tightened during factory assembly. Installer should never tighten these bushings as excessive torque may cause damage to the glass.**

SW



INSTALLATION NOTE: Attach and build legs and braces out from the wall. Assemble Bank, Goal, and Height Adjuster (if included), hoist, and attach.

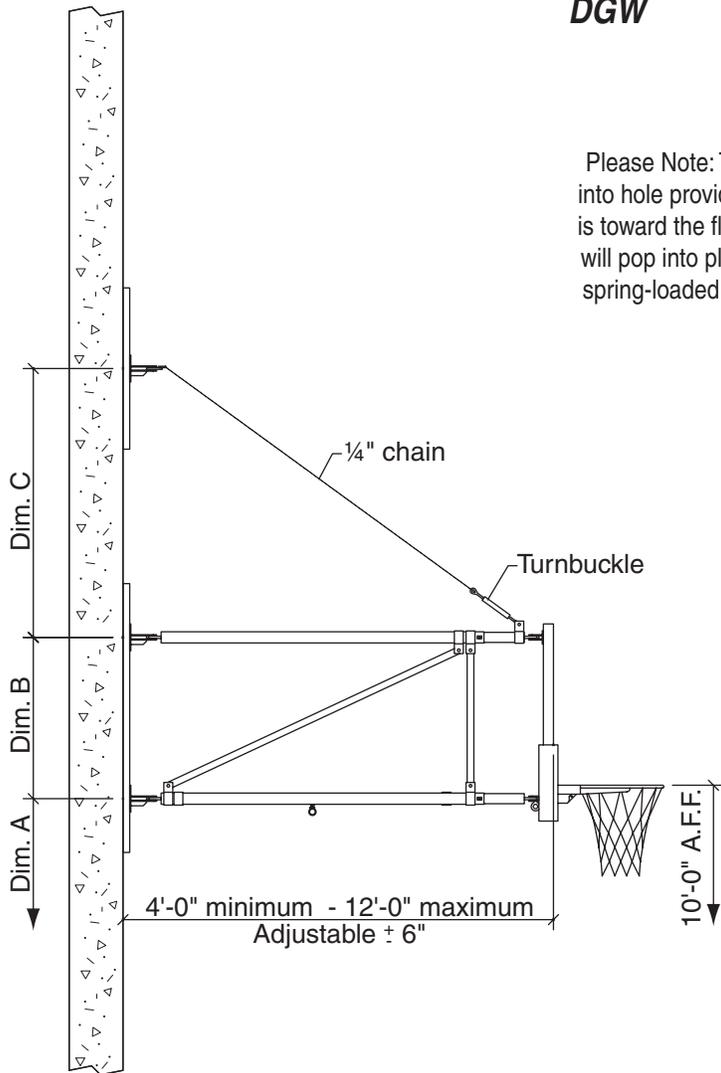
**SWD**



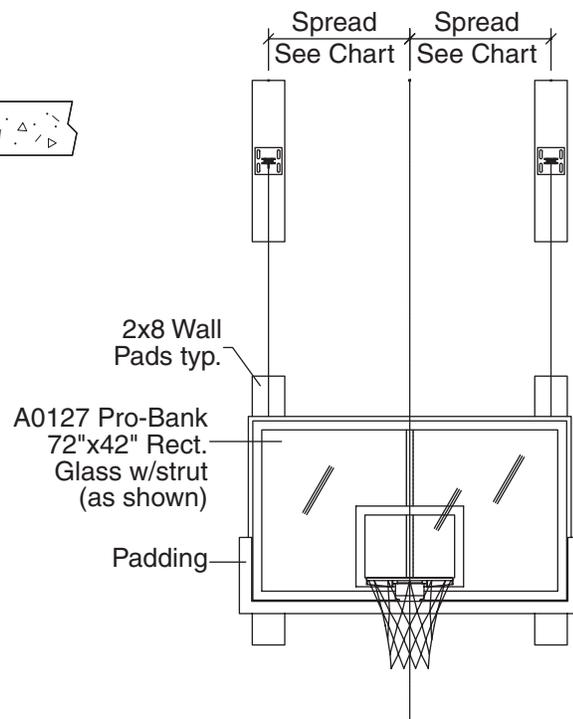
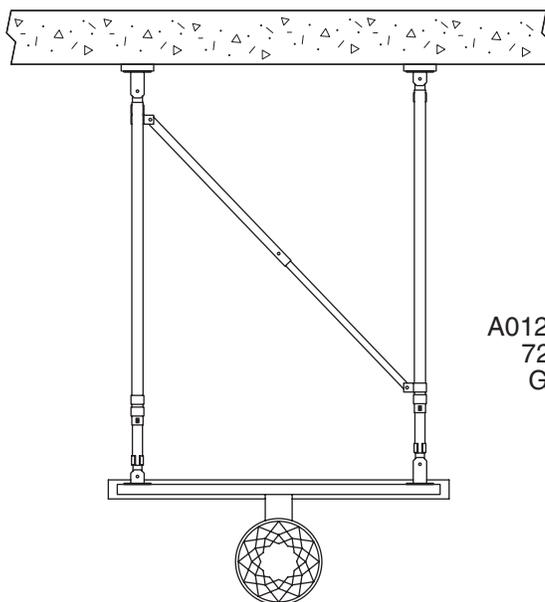
INSTALLATION NOTE: Attach/build legs and Direct Mount Goal Brace from the wall out. Assemble Bank and Goal, then hoist and attach.

**DGW**

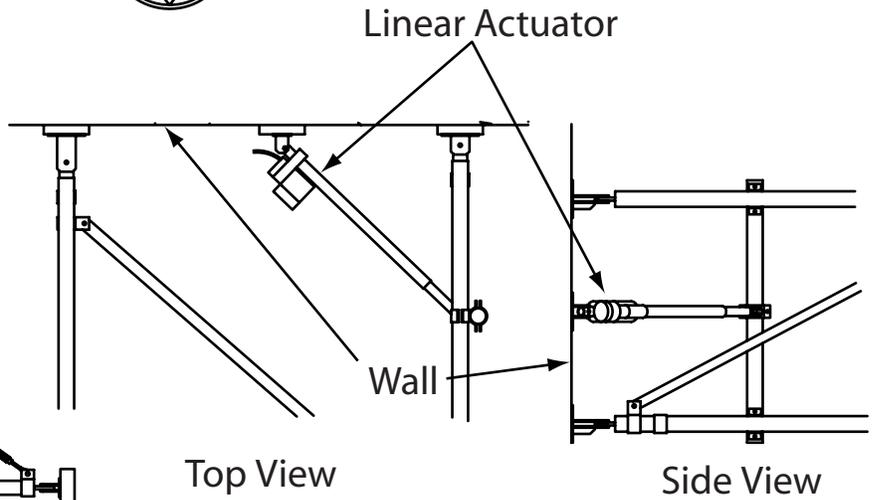
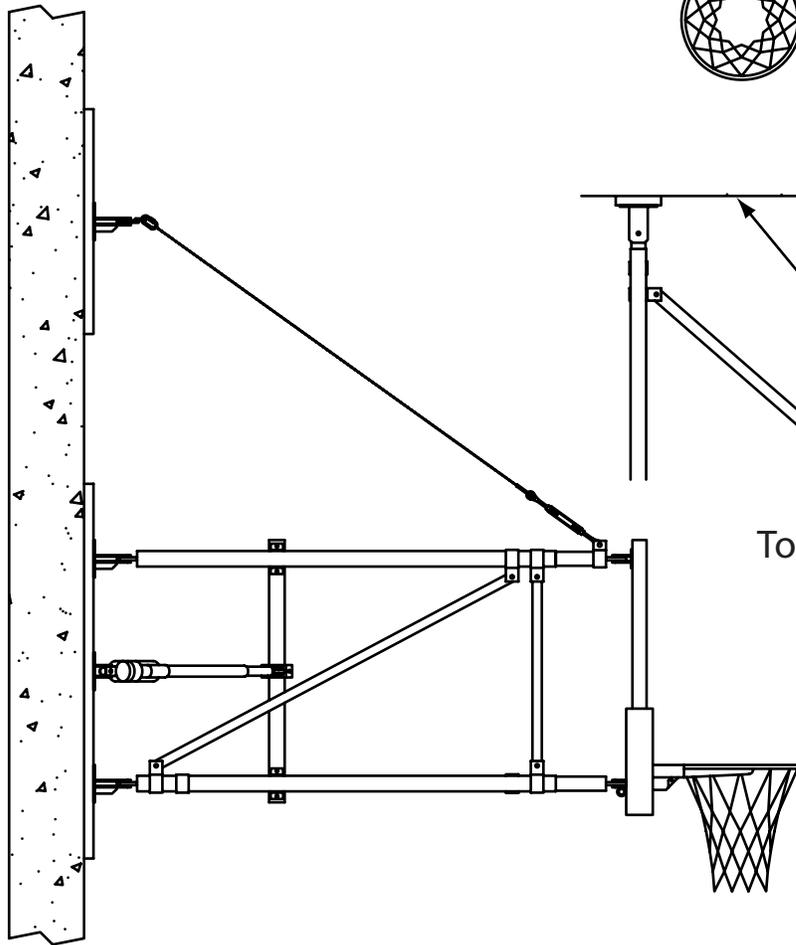
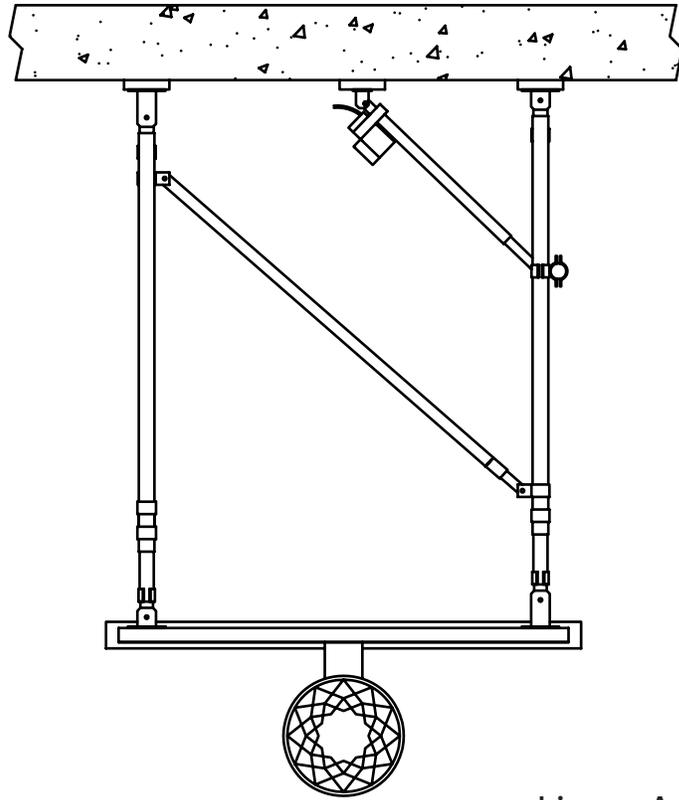
Please Note: To install telescoping brace, screw spring-loaded pin into hole provided on outer tube so that the head of the mechanism is toward the floor. Slip inner tube into outer tube. Spring-loaded pin will pop into place. To fold, use manual height adjuster crank to pull spring-loaded pin down, then manually push backstop toward wall.



INSTALLATION NOTE: Attach and build legs from the wall out. Assemble Bank, Goal, and Height Adjuster, hoist and attach.



DGW-E



**DUW**

INSTALLATION NOTE: Attach and build legs from the wall out. Assemble Bank, Goal, and Height Adjuster, hoist and attach.

