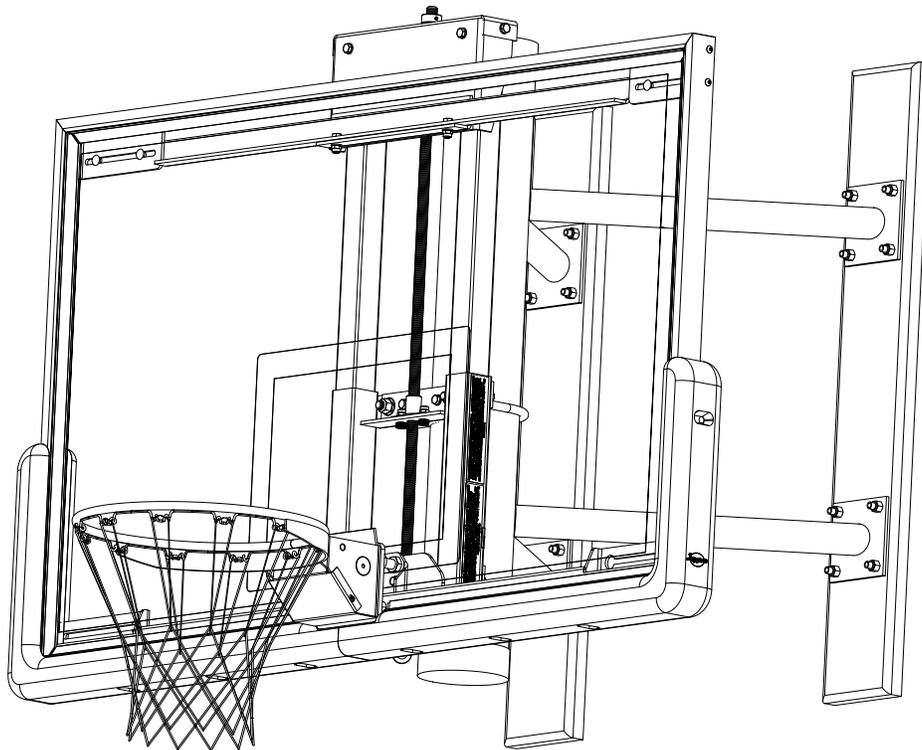


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# WMWH

## WALL MOUNTED SHOOTING STATION w/ HEIGHT ADJUSTER

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## Installation and Maintenance Manual

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Call Jaypro Sports at 1-800-243-0533 during regular business hours for technical support.  
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# WALL-MOUNTED SHOOTING STATION w/ HEIGHT ADJUSTER

## Important Notes

- Follow all warning signs and labels on equipment.
- Inspect all equipment before each use.
- Use the proper anchor depending on wall type. Consult 'Anchor Management' section in this manual for proper selection. The unit weight is approximately 300 pounds.
- Acoustic block or 'sound block' is the worst possible masonry type for wall mounts. The block facing is textured, and there are slots every couple of inches. The block must be filled solid at all attachment areas or failure is likely!
- Wall must be capable of supporting the entire load of the backstop and accessories, as well as handling the shock effect of a large player slamming the ball and/or hanging on the rim.
- Integrity of the wall must be verified by an architect or structural engineer.
- Over the course of time anchors and bolts/nuts may loosen as a result of vibration during equipment use. Periodic inspection and rework is strongly advised to tighten hardware and return equipment to original level of safety.
- All wall anchor hardware should be a minimum of ½" diameter.
- Preventive maintenance should be performed annually on all our basketball backstops to insure years of safe, trouble-free use. This work must be completed by a qualified installer or technician. If one is not available to you, Jaypro's own field service team can be hired to do the work - call Jaypro for pricing and scheduling. See Appendix C for standard equipment maintenance instructions.

### \*\*\* Important! \*\*\*

Following all guidelines for installation is absolutely critical to insure a successful and safe installation of wall mounted equipment. Be especially careful with regards to wall anchor selection and preparation. Follow all manufacturer's instructions for proper use of specific wall anchors. Jaypro does not supply wall anchors with wall mounted equipment, but they can be purchased directly from factory. Wall composition must be brick, concrete, or other form of solid or semi-solid masonry for the backstops to be supported securely. If wall composition is studded with either wood or steel, or there are obstructions or other such building features that make a standard installation inappropriate or impossible, do not attempt installation without first contacting Jaypro directly for a custom engineered solution. Jaypro will not assume liability for the installation of any wall mounted unit.

## Installation Instructions

### 1. Tools & Equipment Required

- a. Socket set and/or box wrenches
- b. Backboard lifting equipment (500 lb capacity minimum)
- c. Electric drill
- d. Medium to heavy duty rotary hammer with the following masonry bits (depending on anchor type - see Appendix A for selection)
- e. Rubber hammer or mallet (for minor leveling adjustments and hardware assembly)
- f. Level
- g. Measuring tape
- h. Assembly diagrams (shipped with materials - contact Jaypro if you are missing your set of assembly diagrams).

### 2. Preparation

- a. Begin by laying out all parts. Identify everything listed on packing list and parts lists and make sure everything is accounted for.
- b. Familiarize yourself with the installation drawing packet supplied with the job. If you don't understand something on any of the drawings, now is the best time to contact Jaypro and get the answers to your questions.
- c. Obtain correct anchors for the wall type present. See table below for guidance. Important: It is the responsibility of the installer to supply the correct anchor. Jaypro cannot be held liable should the wall anchors fail.
- d. Determine the exact location for your backstop. Avoid obstructions such as windows, exposed columns, conduit, etc. on or in the wall in the area where the backstop is to be located. An area 8' wide, from 8'-9" to approximately 14' from the floor is required for installations.
- e. Remove any sheetrock or other wall covering from area immediately behind the wood planks.
- f. The wall surface that the backstop structure is attached to must be capable of supporting the backstop and the forces applied when it is in play. Concrete block, brick, or solid concrete walls are ideal. If your walls are any other material please contact Jaypro Sports for suggested attachment methods.
- g. The distance between the wood planks is 36 inches center to center.



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# WALL-MOUNTED SHOOTING STATION w/ HEIGHT ADJUSTER

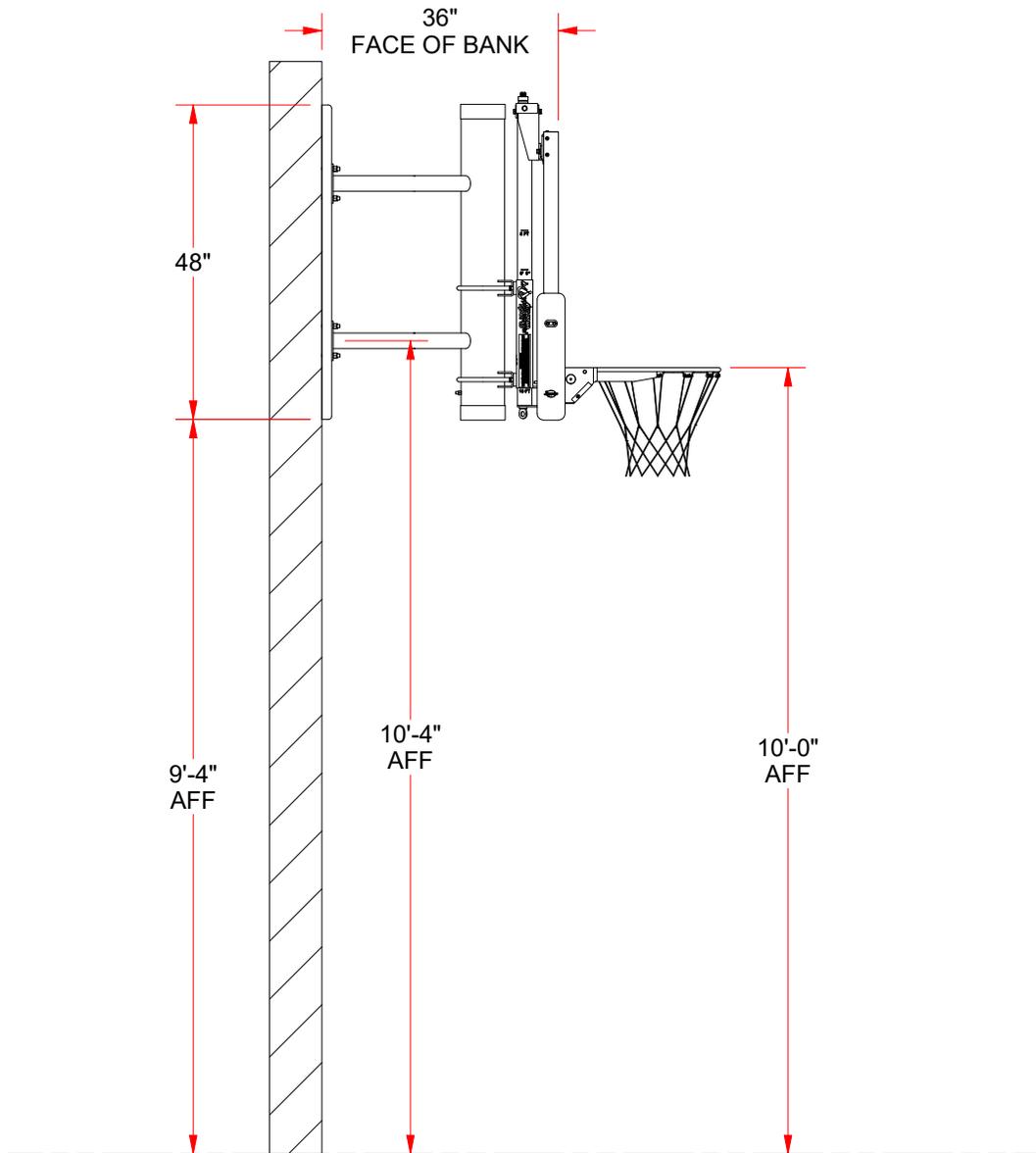
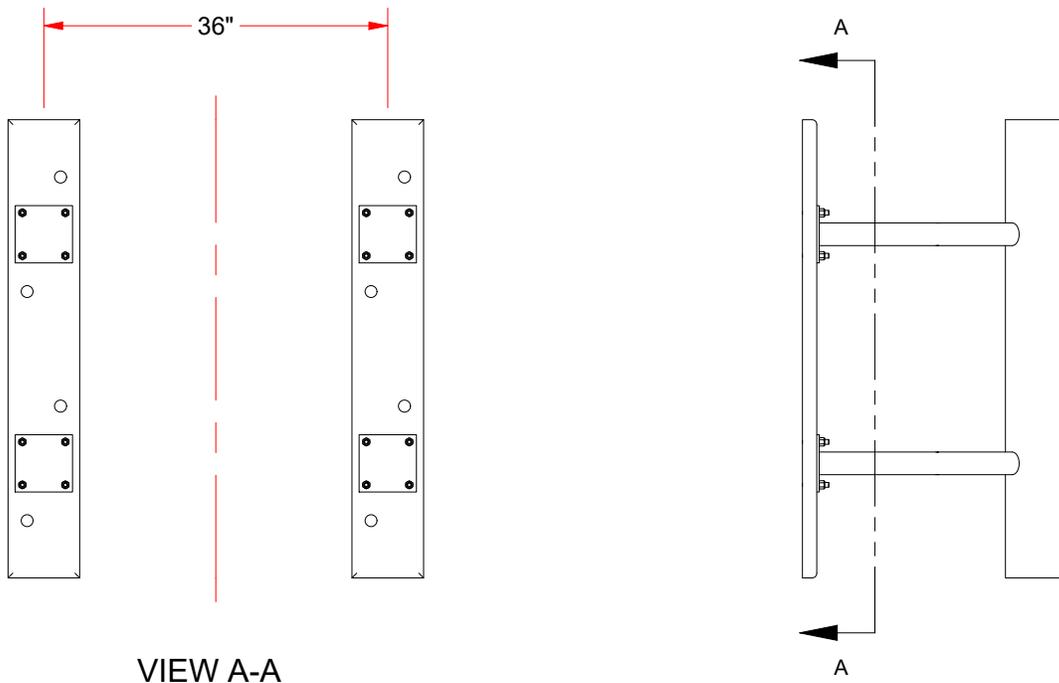


FIGURE 1

### 3. Drilling of Wood Planks

- The wood planks for attaching to the wall are predrilled for their specific brackets. Lay these out on a sawhorse or similar work area. You will need to drill them for anchor bolt locations.
- It is best to use 1/2" anchors for the wall; therefore a 9/16" hole in the wood plank is desirable to allow for leveling the plank. Set up a drill with a 9/16" wood drill bit.
- When marking the planks, mark and drill from the front of the plank, the side facing away from the wall. This will be exposed as a finished product, so mark lightly. You need to drill from this side in order to prevent splintering when drilling.
- Stagger the anchors from side to side leaving 1-1/2 to 2" of wood outside each anchor and ultimately using 4-6 anchors for each plank (see **FIGURE 2**)
- It is very important that these holes are drilled as straight as possible through the planks; otherwise it becomes difficult to level them.

# WALL-MOUNTED SHOOTING STATION w/ HEIGHT ADJUSTER



VIEW A-A

#### 4. Wall Anchors

a. Now you are ready to transfer this layout to the wall for drilling. Determine the centerline of the unit on the wall where you are locating the unit. The width of the wood planks is 36 inches center to center. (See **FIGURE 2**) The bottom of the steel frame outrigger should be located 10'-4" off the finished floor (See **FIGURE 1**), this will dictate the location of your bottom hole. Relate this point to your anchor pattern. Mark a centerline of the plank starting at your bottom anchor location and extending to the top anchor location. Mark the actual hole locations to each side of the center as they are located on the plank. Try to avoid mortar joints they often contain wire mesh and are weaker than the surrounding block. The planks may be shifted up or down slightly to avoid the mortar joints. Avoid attachment in the top 2 to 3 rows of block, this will cause the blocks to break away.

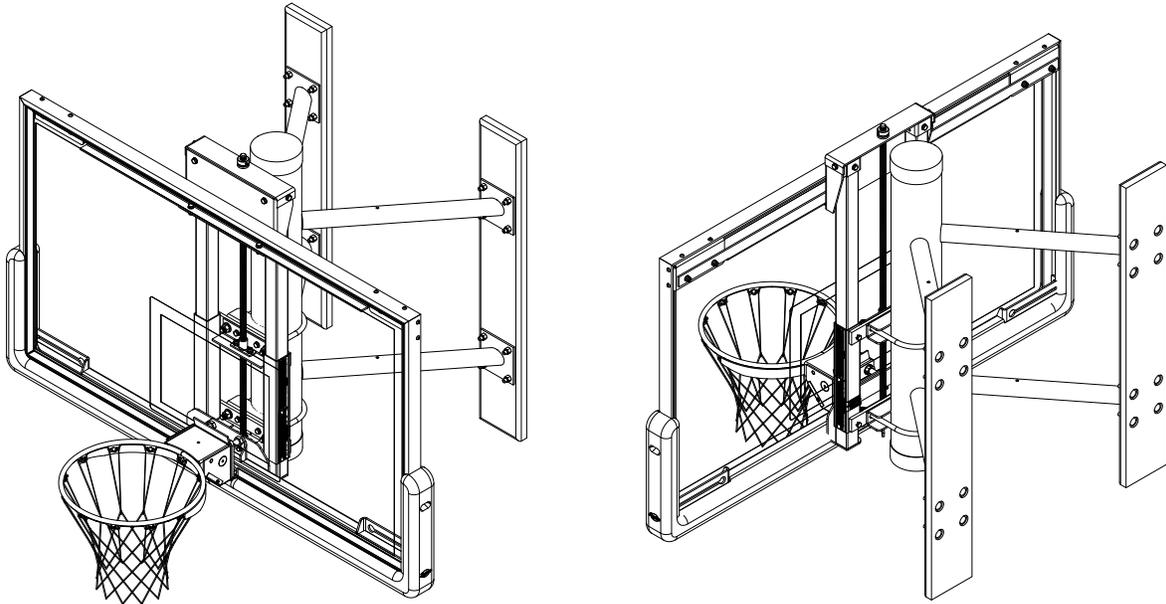
**Important!** Remove any sheetrock or other non-structural materials from area immediately behind all wood planks. This material will interfere with the wall anchors. Failure to remove drywall or other such material may result in the entire backstop unit falling off the wall.

b. After marking all the anchor locations, double check before drilling. Make certain they are at the right height, width, and distance apart. If you are over a finished floor, make certain to protect the area prior to drilling. A box taped to the wall under each hole as you drill will catch a large portion of the dust. Drill all holes before attaching the planks.

c. Clean the area thoroughly before proceeding to prevent spreading masonry dust.

d. Determine the proper anchor for each location. This is **IMPORTANT**. Do not try to use an anchor that is not suited to the location. For instance, don't use an expansion anchor in a hollow wall application. Suitable toggle bolt anchors are available. If you carry a variety to allow for different applications, you will save yourself a huge amount of time and trouble, and do a better job at the same time. If you use a double expansion anchor, make sure you use a back-up washer between the wall and plank to prevent the anchor from pulling into the wood. Use a suitable washer at the face of the plank to cover the hole. 1-1/2" outside diameter works well.

# WALL-MOUNTED SHOOTING STATION w/ HEIGHT ADJUSTER



**FIGURE 3**

## **5. Unit Assembly**

- a. Prepare the wood planks for installation by inserting the proper carriage bolts into the counter bored holes.
- b. Attach each plank loosely to the wall, to allow for leveling. Attach the frames to the wood planks. NOTE: the vertical member of the frame has a hole located on one end, this hole needs to be on the floor side and is there to install a safety bolt that prevents the backboard from sliding off the frame.
- c. Level and tighten the planks securely to the wall and cut off excess bolts protruding from the wall. Maintain center-to-center dimensions and height requirements as accurately as possible to make the rest of the installation as easy as possible.
- d. It is recommended to assemble the height adjuster to the board at ground level. However, if you prefer, you can assemble the height adjuster to the structure and install the board afterward. Follow the SMHA Steel Manual Height Adjuster installation instructions.
- e. A lifting system will need to be used to position the backboard. A manual material lift is ideal (minimum capacity 500 lbs). If another method of hoisting the board is used such as chain hoist, make sure this device is attached no lower than 15' from the floor. Additionally, nylon web straps will be needed to wrap around backboard approximately 4' apart for balance, then hooked to lifting device as shown here.
- f. Lift the backboard into position and secure to the frame with the u-bolts provided making the board level and plum.
- g. Securely tighten all hardware before removing lifting system.
- h. Remove lifting mechanism.
- i. Install a safety bolt on each end of the frame. (See Detail A)
- j. Attach the goal loosely using the bolts provided and level from side to side while tightening.
- k. Check height at the top of the goal - 10' above the playing surface.
- l. Finally, check all fittings and hardware to make sure everything is tight.
- m. Attach edge padding and pipe caps.



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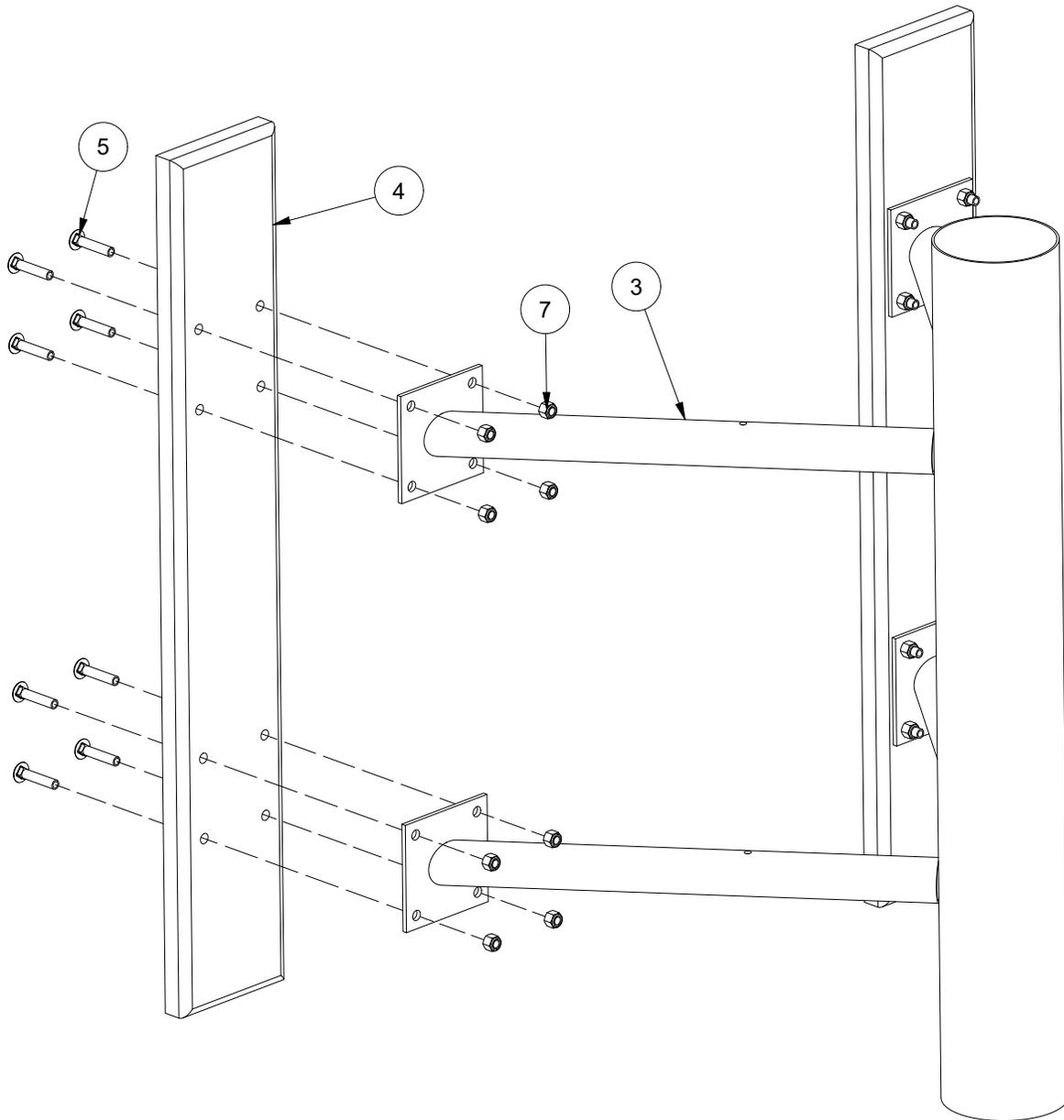
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ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
1	1	GBRUB-42	72" x 42" UNBREAKABLE RECTANGULAR GLASS BACKBOARD	6	3	HN265	3/8-16 UNC-Nylon Lock Nut-ZP-GrNC
				7	16	HN2951	1/2-13 UNC-Nylon Lock Nut-ZP-GrNC
2	1	JAHA-XX-1 JAHA-UBM	MANUAL STEEL HEIGHT ADJUSTER w/ UPPER BOARD MOUNT	8	1	HS286	3/8-16 x 1 HEX CAP SCREW-ZP-GrNC
				9	2	HS5351	3/8-16 x 1-1/2 HEX CAP SCREW-ZP-Gr5
3	1	WMSS-658	MAST WELDMENT	10	2	HW2050	3/8 STD WASHER-ZP-GrNC
4	2	WMSS-WP	WALL MOUNT WOOD w/ 24" MOUNT	11	2	EC0042	6 5/8 ID BLACK NON THREADED CAP #RRC-6
5	16	HB5045	1/2-13 x 2-1/2 CARRIAGE BOLT-ZP				



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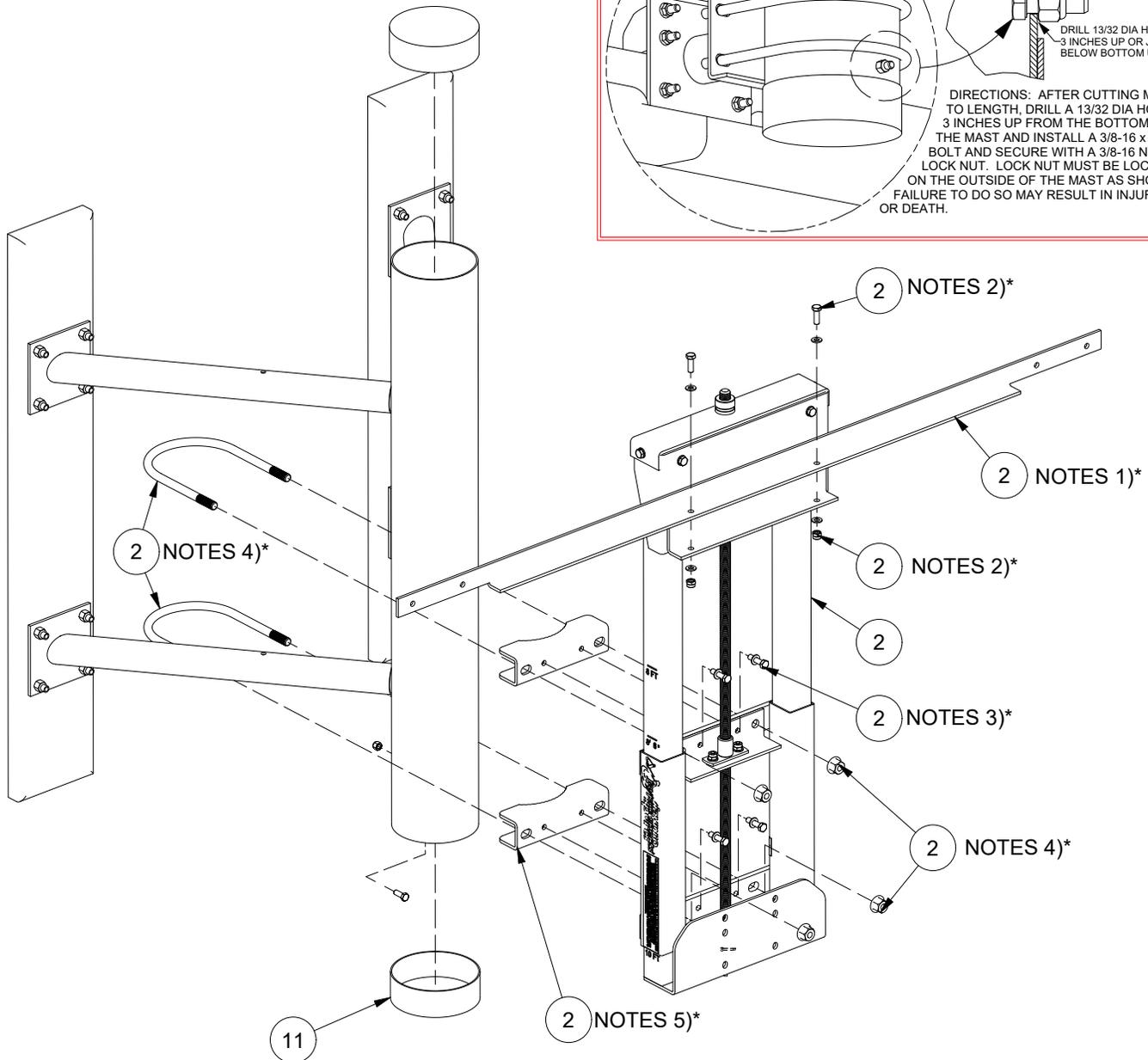
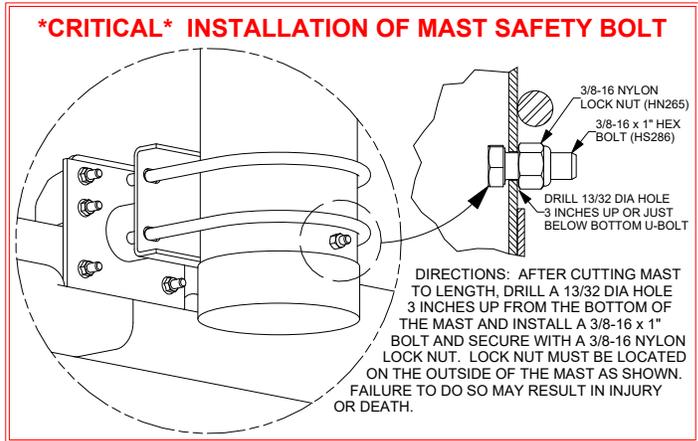
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# WALL-MOUNTED SHOOTING STATION w/ HEIGHT ADJUSTER

NOTES: THIS ITEM COMES w/ HEIGHT ADJUSTER.

- 1) 1X TOP BOARD MOUNT
- 2) 4X M10 x 30mm BOLT, WASHER & LOCK NUT
- 3) 4X M10 x 40mm BOLT & WASHER
- 4) 2X M16 U-BOLTS & FLANGE NUTS
- 5) 2X SADDLE BRACKETS



ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
1	1	GBRUB-42	72" x 42" UNBREAKABLE RECTANGULAR GLASS BACKBOARD	6	3	HN265	3/8-16 UNC-Nylon Lock Nut-ZP-GrNC
				7	16	HN2951	1/2-13 UNC-Nylon Lock Nut-ZP-GrNC
2	1	JAHA-XX-1 JAHA-UBM	MANUAL STEEL HEIGHT ADJUSTER w/ UPPER BOARD MOUNT	8	1	HS286	3/8-16 x 1 HEX CAP SCREW-ZP-GrNC
3	1	WMSS-658	MAST WELDMENT	9	2	HS5351	3/8-16 x 1-1/2 HEX CAP SCREW-ZP-Gr5
4	2	WMSS-WP	WALL MOUNT WOOD w/ 24" MOUNT	10	2	HW2050	3/8 STD WASHER-ZP-GrNC
5	16	HB5045	1/2-13 x 2-1/2 CARRIAGE BOLT-ZP	11	2	EC0042	6 5/8 ID BLACK NON THREADED CAP #RRC-6



# WALL-MOUNTED SHOOTING STATION w/ HEIGHT ADJUSTER

NOTES: THIS ITEM COMES w/ HEIGHT ADJUSTER.

1) M10 x 30mm CARRIAGE BOLT & NYLON LOCK NUT.

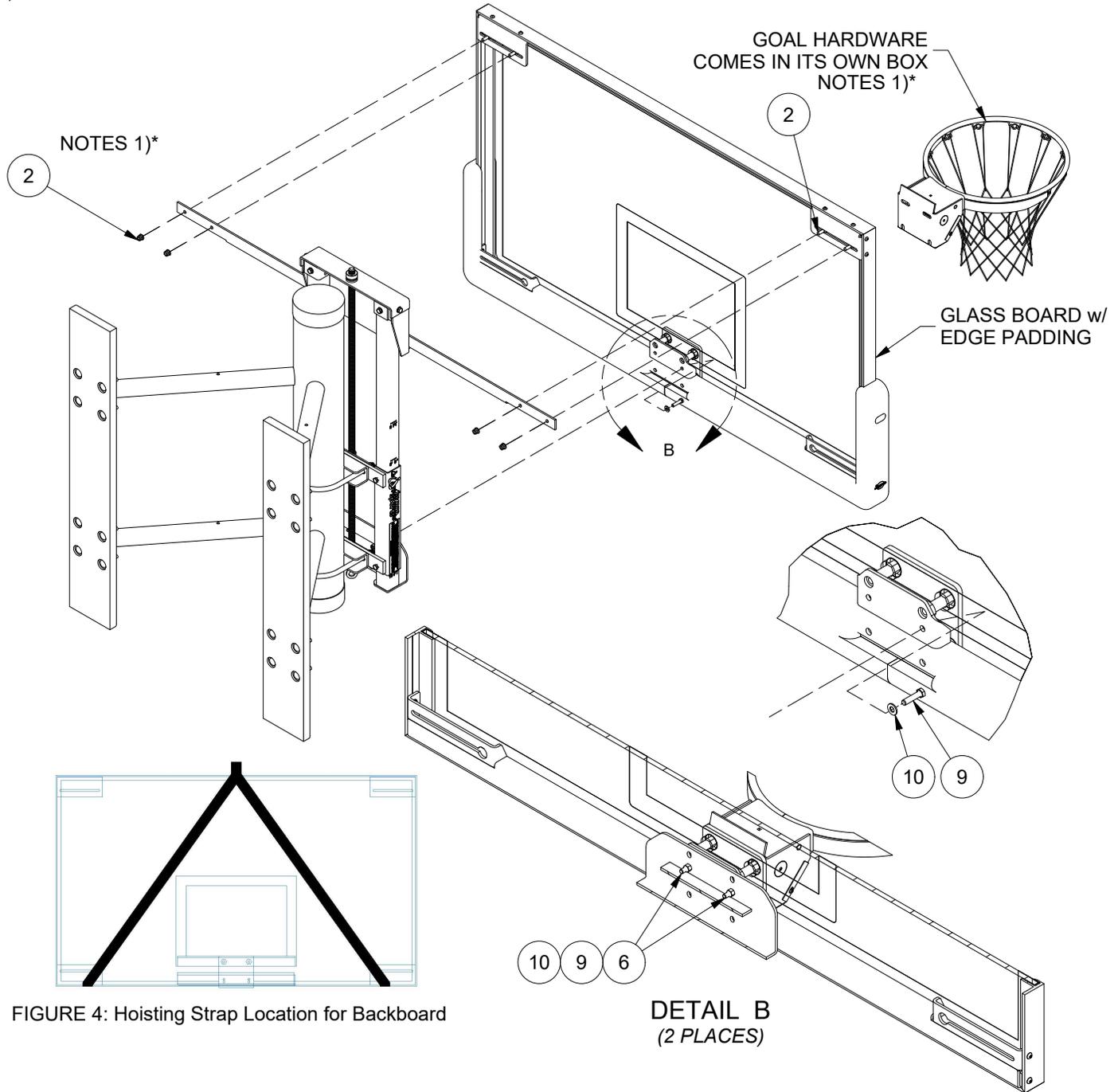


FIGURE 4: Hoisting Strap Location for Backboard

DETAIL B  
(2 PLACES)

ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
1	1	GBRUB-42	72" x 42" UNBREAKABLE RECTANGULAR GLASS BACKBOARD	6	3	HN265	3/8-16 UNC-Nylon Lock Nut-ZP-GrNC
2	1	JAHA-XX-1 JAHA-UBM	MANUAL STEEL HEIGHT ADJUSTER w/ UPPER BOARD MOUNT	7	16	HN2951	1/2-13 UNC-Nylon Lock Nut-ZP-GrNC
3	1	WMSS-658	MAST WELDMENT	8	1	HS286	3/8-16 x 1 HEX CAP SCREW-ZP-GrNC
4	2	WMSS-WP	WALL MOUNT WOOD w/ 24" MOUNT	9	2	HS5351	3/8-16 x 1-1/2 HEX CAP SCREW-ZP-Gr5
5	16	HB5045	1/2-13 x 2-1/2 CARRIAGE BOLT-ZP	10	2	HW2050	3/8 STD WASHER-ZP-GrNC
				11	2	EC0042	6 5/8 ID BLACK NON THREADED CAP #RRC-6



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# WALL-MOUNTED SHOOTING STATION w/ HEIGHT ADJUSTER

## Appendix A - Anchor Management

> It can be argued that the wall anchor is the most critical component of the wall mounted backstop system. All of the weight of the unit, as well as the load introduced through play and use of the equipment, ultimately must be supported by the wall anchors. Preparation of the wall, drilling of the holes in the proper location and depth, and most importantly correct selection of the type of anchor are all critical steps in the installation process.

> Due to the fact that there are so many different types of walls Jaypro is not able to supply the wall anchors with the backstop unit at the time of shipment. We do, however, stock most common types and you can purchase the anchors from us directly.

> All wall anchor hardware should be a minimum of ½" diameter.

> The following four pages lists three of the most common wall anchors. Before drilling a single hole you must verify the type of wall you will be installing against and then procure the necessary type and quantity of anchor to guarantee a successful installation. Immediately below is a table listing acceptable anchor types for given wall compositions

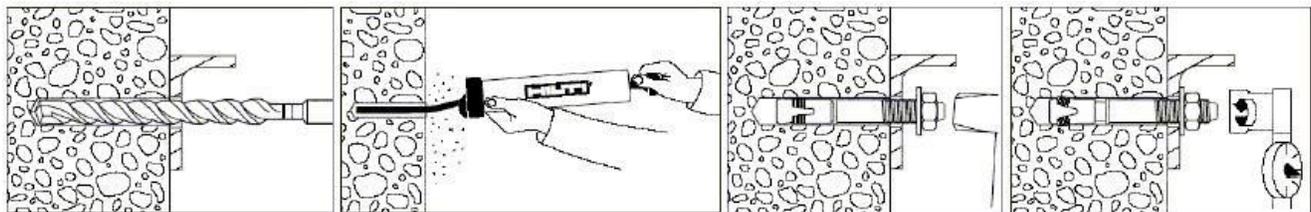
Wall Type	Recommended Anchor
4" Pre-Cast	Rawl Powerstud Hilti Kwik Bolt 3
CMU (Hollow)	Tumble Toggle
CMU (Filled / Solid)	Double Expansion Shield Hilti Kwik Bolt 3

Figure 5: Recommended Anchors for Wall Types

### Pre-Cast or Filled/Solid CMU

The Hilti Kwik bolt 3 comes in two varieties - Expansion anchor and Adhesive anchor (sometimes referred to as a chemical anchor). The Hilti Kwik Bolt 3 is the only anchor approved in many California districts due to its endurance under seismic loading. It has extremely high load capacities, but is has particularly stringent preparation steps. Consult Hilti's own website ([www.us.hilti.com](http://www.us.hilti.com)) and installation instructions supplied with anchors for complete site and equipment preparations. Shown below are general steps for installation for reference only.

Hilti Kwik Bolt 3 [Expansion Anchor]



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1. Hammer drill a hole to the same nominal diameter as the Kwik Bolt 3. The hole depth must exceed the anchor embedment by at least one diameter. The fixture or predrilled wood plank may be used as a template to ensure proper anchor location.
2. Clean hole.
3. Drive the Kwik Bolt 3 into the hole using a hammer. The anchor must be driven until at least six threads are below the surface of the fixture (or wood).
4. Tighten the nut to the recommended installation torque.

Wall Type	Recommended Torque
Normal and lightweight concrete	40 ft-lb
Grout filled block	25 ft-lb

Figure 6: Recommended Torque for Kwik Bolt 3 (Expansion Anchor)

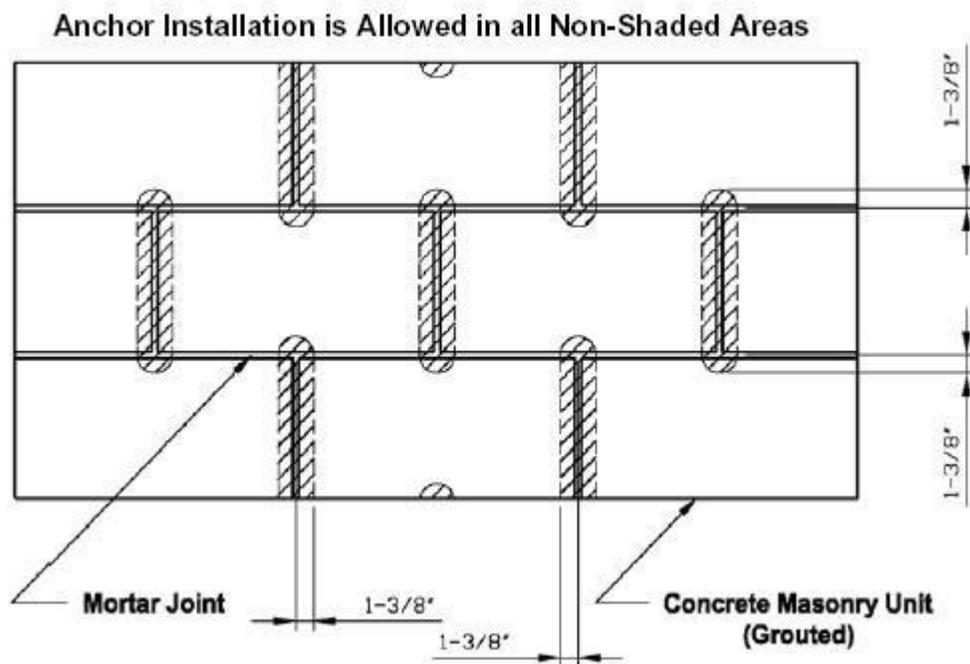
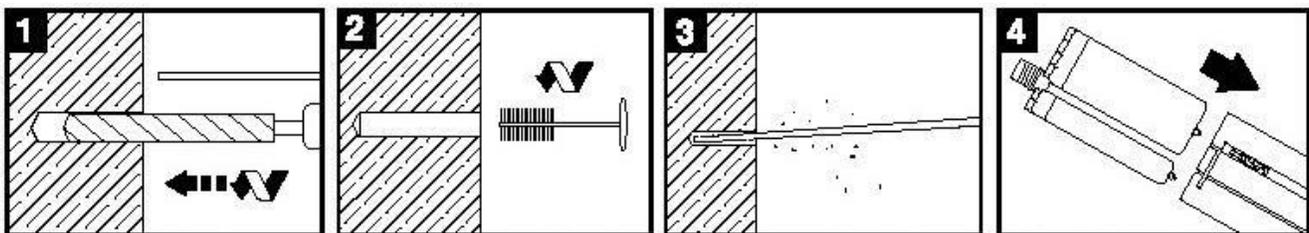


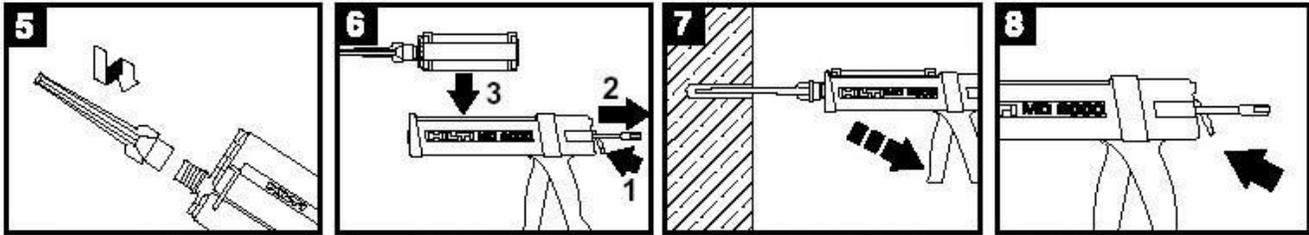
Figure 7: Allowed Anchor Locations for Concrete Masonry Unit (CMU)

Hilti Kwik Bolt 3 [HIT HY 150 Adhesive Anchor System]

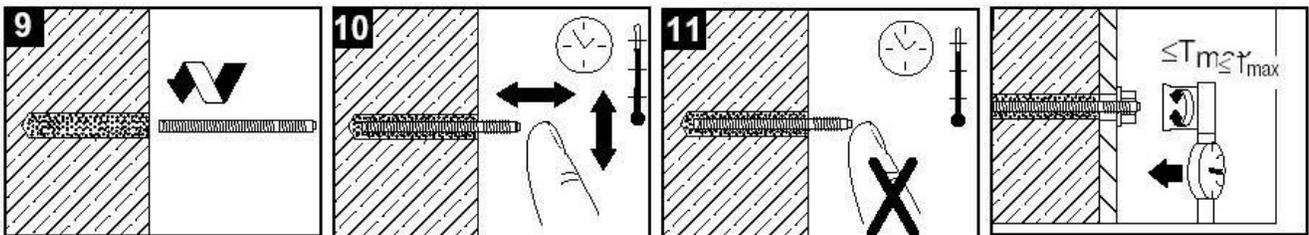


1. Drill anchor hole with carbide bit. Contact Hilti for use of Diamond Core bits.
2. Clean hole with wire brush. Proper hole cleaning is essential.
3. Insert air nozzle to bottom of hole and blow out hole using a pump or compressed air.
4. Put refill pack into holder. Remove cap covering threaded projection.

# WALL-MOUNTED SHOOTING STATION w/ HEIGHT ADJUSTER



5. Screw on static mixer.
6. Put holder/cartridge into appropriate dispenser and **discard first two trigger pulls of adhesive from each refill pack or cartridge.**
7. Inject adhesive into hole starting at the bottom until 1/3 to 2/3 full. Use mixer filler tube extensions when needed to reach the hole bottom.
8. Unlock dispenser.



9. Insert rod. Twist during installation.
10. Fastener may be adjusted during specified gel time.
11. Do not disturb anchor between specified gel time and cure time.
12. Apply specified torque as required to secure items to be fastened. Do not exceed maximum torque specified.

See applicable Hilti Kwik Bolt tables below for gel and cure time information. Remember to consult Hilti directly for complete specifications and installation instructions. The information included herein is intended as a guide only for assistance in proper anchor selection. HAS rod information shown but other acceptable anchors are available from Hilti.

**Open Gel Time Table (Approximate)<sup>1</sup>**

Base Material Temperature		HIT HY 150 <sup>2</sup>	HIT-ICE
°F	°C		
-10	-23	-	1.5 hrs
0	-18	-	1.5 hrs
23	-5	25 min	40 min
32	0	18 min	26 min
41	5	13 min	11 min
68	20	5 min	4 min
86	30	4 min	1.5 min
104	40	2 min	-

<sup>1</sup> Product temperatures must be maintained above 41°F (5°C), with the exception of HIT-ICE which must be above 0°F (-18°C).

**Final Cure Time Table (Approximate)<sup>1</sup>**

Base Material Temperature		HIT HY 150 <sup>2</sup>	HIT-ICE
°F	°C		
-10	-23	-	24 hrs
0	-18	-	24 hrs
23	-5	6 hrs	6 hrs
32	0	3 hrs	4 hrs
41	5	90 min	2 hrs
68	20	50 min	1 hrs
86	30	40 min	30 min
104	40	30 min	-

<sup>2</sup> Use of HIT HY 150 and HIT-TZ rods must be installed in base material temperatures  $\geq 40^\circ\text{F}$  (5°C).

**Figure 8: Gel and Cure Times for Kwik Bolt 3 (Adhesive Anchor)**

# WALL-MOUNTED SHOOTING STATION w/ HEIGHT ADJUSTER

Jaypro mandates a minimum of 1/2" diameter anchors. Information supplied here is limited to that size anchor. See Hilti's website or call Hilti directly for information on other size anchors.

Visit Hilti Online   
www.us.hilti.com US  
www.ca.hilti.com Canada

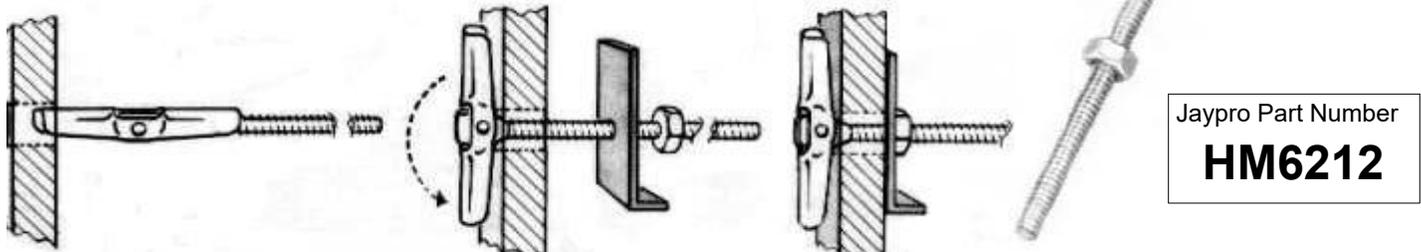


Hilti, Inc. (US) 1-800-879-8000  
Hilti (Canada) Corporation 1-800-363-4458

## Hollow Wall - Non-Filled CMU

### No. 1 Type Tumble Toggle

The No. 1 tumble toggle features a tilting type toggle head, which is riveted to a flattened end screw. This design permits either pre-installing the fastener to the fixture or into the hole. Also it is the strongest hollow wall anchor.



13. Turn wing to position parallel to bolt and insert through hole drilled in wall.

14. Wing flips to vertical by gravity. Remove nut and place bracket over hole.

15. Replace and tighten nut. Bracket is now held in place.

**Installer Note:** Only a 1/2" (1/2-13 x 6") diameter bolt type recommended, requiring a 7/8" diameter hole to be drilled. For availability, please contact Jaypro Sports New Construction Customer Service.

## Solid Wall - Pre-Cast Concrete, Brick, or Filled Block

### 1/2" "Double" Dual Expansion Machine Bolt Anchor

The double is a dual expansion machine bolt anchor particularly suited for materials of questionable strength. It can be used in solid concrete, block, brick and stone. It consists of twin tubular sleeves, bound together with high tension spring steel bands which contains two protruding wedge shaped hollow cones. One cone is smooth, while the other is threaded. Internal lugs on the tapered ends of the hollow cones prevent them from rotating during anchor expansion. As the anchor is tightened, the



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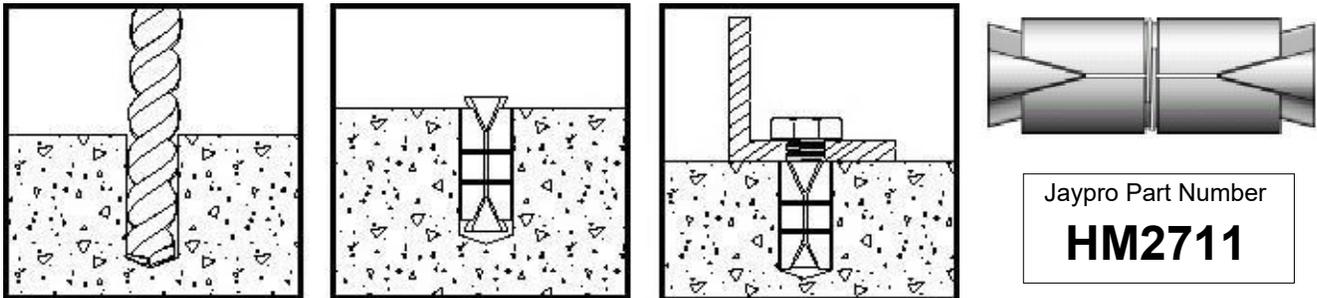
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opposing wedges at either end are drawn in tightly providing full length, 360° expansion over a large bearing area. For maximum expansion, the upper cone should protrude slightly before setting.



1. Drill hole of recommended diameter ( $\frac{7}{8}$ " for a  $\frac{1}{2}$ " bolt) into the base material to a depth equal to, or slightly deeper than the length of the expansion anchor. Clean out the hole of all dust and cuttings.
2. Place the Double Expansion anchor, nut end first, into the hole. The top end of the anchor should be flush or slightly below the base material surface.
3. Place the object to be fastened over the anchor in the base material and bolt in to place.

**Installer Note:** Only  $\frac{1}{2}$ " bolts are recommended for use by Jaypro. For availability, please contact Jaypro Sports New Construction Customer Service.

## Appendix B - Equipment Maintenance

### MAINTENANCE INSTRUCTIONS

Jaypro prides itself on manufacturing high quality, durable and safe equipment. It is very important however that certain maintenance be performed annually on all our basketball backstops to insure years of safe, trouble-free use. This work must be completed by a qualified installer or technician. If one is not available to you, Jaypro's own field service team can be hired to do the work. See number below, as for a field service manager to schedule an on-site visit.

#### BEFORE THE START OF EVERY SEASON, YOU MUST:

- ◆ Visually inspect entire unit to make sure that no parts have slipped or moved. (NOTE: To do this quickly, look to see if any unpainted areas have become visible or if painted areas have become damaged.)
- ◆ Check backboard for level and plumb. (NOTE: If backboard is not plumb, it is necessary to adjust brace for plumb.)
- ◆ Check goal for appropriate height and level.
- ◆ Inspect and tighten ALL nuts and bolts.

**IF ANY PARTS ARE REQUIRED, PLEASE CALL JAYPRO DIRECT.**  
1-800-243-0533



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