



Armored Configuration - Easy Rack / AR550 Gongs



2x4 Configuration - Easy Rack / AR550 Gongs



Armored Configuration - Know Your Limits / AR550 Gongs



2x4 Configuration - Easy Rack / AR500 Gongs

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TA TARGETS	EASY RACK / USER MANUAL	MAN-001
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TA TARGETS	EASY RACK / USER MANUAL	MAN-001
1.0	Universal Firearm Safety Rules	

These rules apply any time you are handling a firearm, on this range or any other. They are not specific to TA Targets equipment. They are the foundation of safe shooting, and they take priority over every other instruction in this manual.

- 1. TREAT EVERY FIREARM AS IF IT IS LOADED, every time, even if you believe it is unloaded or have checked it yourself.**
- 2. ALWAYS POINT THE MUZZLE IN A SAFE DIRECTION. Never point a firearm at anything you are not willing to destroy.**
- 3. KEEP YOUR FINGER OFF THE TRIGGER until your sights are on target and you have made the decision to fire.**
- 4. BE SURE OF YOUR TARGET, YOUR BACKSTOP, AND WHAT IS BEYOND IT. Know what you are shooting at and what happens if you miss.**

! A STEEL TARGET IS NOT A BACKSTOP. Its job is to stop and deform a bullet on impact. It is not designed, tested, or guaranteed to contain every fragment, ricochet, or stray round.

Your range MUST have its own proper backstop, separate from any target system, capable of fully capturing ALL bullets and fragmentation. It is NOT safe to shoot ANY steel target, ours or anyone else's, without one.

Before you fire a single round, YOU are responsible for confirming that no round, fragment, or ricochet can leave your property under ANY circumstances.

In addition:

- Never use drugs or alcohol before or while shooting.
- Know how your firearm operates before you load it. Every make and model is different.
- Wear approved eye and ear protection any time a firearm is in use nearby, whether you are shooting or not.
- Store firearms and ammunition securely, unloaded, and separately when not in use.
- Never rely on any mechanical safety in place of the rules above. A safety is a device, not a substitute for muzzle and trigger discipline.

2.0	PPE and Handling Requirements: Steel Targets and Lead Exposure
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Steel targets are built for years of repeated use when properly maintained, but they remain high-impact equipment that deserves the same care and attention as any other part of your range. The requirements below apply to setup, use, maintenance, and eventual retirement of any TA Targets steel target system.

Required PPE:

- **Eye protection:** safety glasses rated ANSI Z87.1 or equivalent, worn by every shooter and every bystander within range of fragmentation, at all times a target is being engaged. Ordinary sunglasses or fashion eyewear do not provide adequate impact protection and are not a substitute.
- **Hearing protection:** worn by every shooter and every bystander, at all times a firearm is in use nearby.
- **Gloves:** recommended when handling, setting up, tearing down, or moving used steel target plates, due to sharp edge chips and lead residue (see below).
- **Dust mask or respirator:** required when cutting, drilling, or sanding any component of this system, and recommended when sweeping or cleaning a heavily-used range area.

LEAD EXPOSURE NOTICE: Any USED steel target will have lead residue on its face from bullet fragmentation, regardless of how new or clean it appears. This is unavoidable and expected.

Wash your hands and forearms thoroughly with cold water and a dedicated lead-removal or heavy-duty soap immediately after handling used targets, spent brass, or range debris, before eating, drinking, smoking, or touching your face.

Do not eat, drink, or use tobacco products while handling targets or working in the impact area.

Launder range clothing separately from other household laundry.

Children and pregnant women should not handle used steel targets or spend time in the direct impact area.

Consider washing or wiping down plates periodically to reduce surface lead dust, particularly on plates used indoors or in low-ventilation areas.

This section is provided as general safety guidance and does not replace your own range's specific rules, local ordinances, or OSHA/CDC guidance on lead exposure, which should always take precedence.

3.0

Identifying Your Target Material: Mineral Bronze vs. White

Every steel target TA Targets sells is powder coated in one of two colors, and that color is not cosmetic. It tells you what the plate is made of and how to shoot it safely. This rule applies across our entire product line, not just this manual.

MINERAL BRONZE = AR500 STEEL

WHITE = AR550 STEEL



AR500 (Mineral Bronze) example



AR550 (White) example

AR500 and AR550 have different safe shooting distances for the same cartridge. Using the wrong distance table for your plate's actual material can result in plate damage, dangerous fragmentation, or injury. Before you shoot any TA Targets steel target:

- Identify the plate's powder coat color: Mineral Bronze or White.
- Confirm that color against the warning sticker on the back of the plate.
- Use the matching distance rating table for that material (Section 12.0 in this manual).

If the plate has been repainted, heavily worn, or the sticker is missing or illegible, contact us before shooting. Do not guess.

4.0

About This System

The Easy Rack is a modular gong stand system built on TA Targets' second-generation Deluxe Gong platform. It is available in two frame configurations, chosen at purchase:

- Armored Configuration: an all-steel, fully adjustable armored frame (brackets, post bottoms, and splice plates).
- 2x4 Configuration: the same A-Bracket end supports, paired with customer-supplied 2x4 lumber for the legs and crossbar. A more cost-friendly build.

Both configurations are intentionally modular. Each can be reconfigured by the customer into custom gong arrays of virtually any layout, plate shape, or plate count. This manual covers standard assembly for both configurations, plus how to build your own custom array.

Sections 7.0 and 8.0 are each fully self-contained. Read the section for the configuration you purchased. Sections 9.0 onward (connections reference, distance ratings, ammunition, wear and maintenance) apply to both configurations, with any differences called out explicitly.

Target plate part numbers depend on how your Easy Rack was ordered. A complete, pre-configured Easy Rack ships with the standard part numbers listed in the component tables in Sections 7.1 and 8.1. A custom-built array, including "Know Your Limits" style layouts, ships with the specific plates you ordered for that build, which may differ. If you purchased a custom configuration, confirm your target plate part numbers against your order confirmation, not this manual.

5.0

Before You Begin: Safety Notice

**FULLY READ THIS MANUAL AND THE INCLUDED SAFE SHOOTING PAMPHLET BEFORE SHOOTING.
READ THE STICKER ON THE BACK OF YOUR TARGET PLATE PRIOR TO SHOOTING.
ALWAYS WEAR APPROVED HEARING AND EYE PROTECTION WHENEVER HANDLING A FIREARM,
OPERATING POWER TOOLS, OR ASSEMBLING THIS SYSTEM.
UNDER NO CIRCUMSTANCES SHOULD YOU ALTER OR MISUSE THIS SYSTEM.**

As always, if you have ANY questions, please contact us via email PRIOR to using our products. Customer Service email: info@tatargets.com. You may also call 1-833-746-4785 M-F during business hours. If questions EVER exist, cease use of your target system until we can address your questions and/or concerns.

The steel your gong targets are made from determines your safe shooting distance, not the frame configuration. This system supports 3/8" AR500, 3/8" AR550, and 1/2" AR550 target plates, each with its own distance rating table in Section 12.0. Confirm which plate material you own before you shoot. See Section 3.0 for how to identify it.

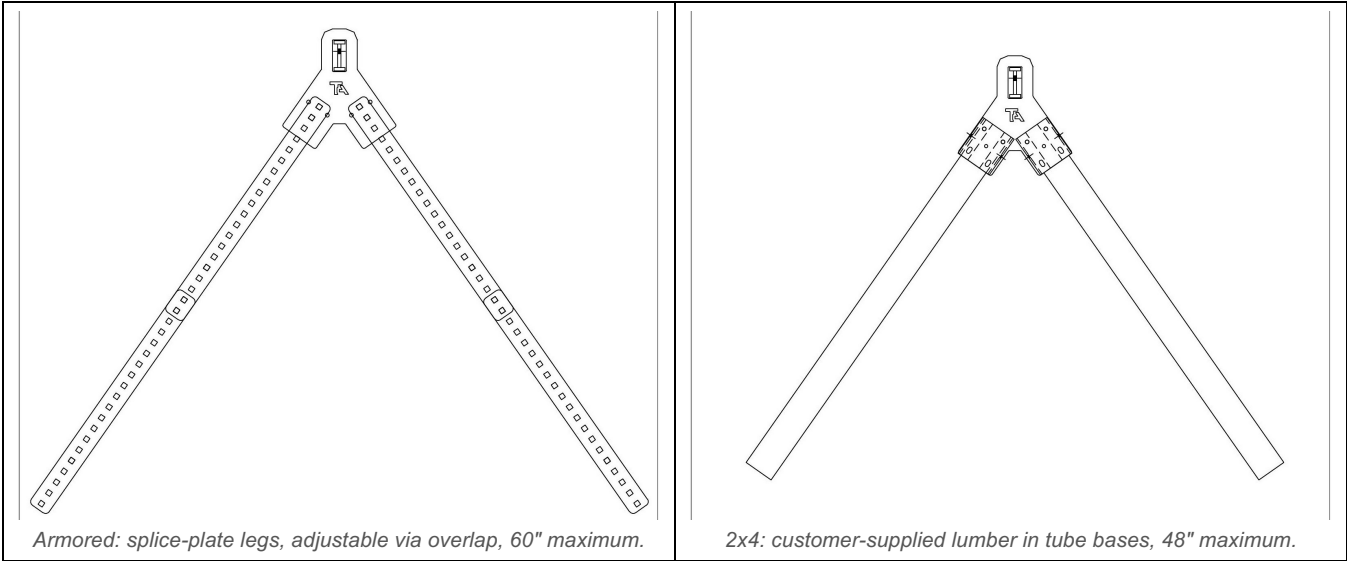
⚠ DO NOT MOVE THE SYSTEM ONCE ASSEMBLED: This system is heavy. Do not attempt to lift or reposition it while fully assembled. Two people picking it up and carrying it while bolted together creates a pinch hazard at the joints. If the system needs to be relocated, disassemble it rather than moving it fully built.

6.0

Choosing Your Configuration

TA TARGETS		EASY RACK / USER MANUAL	MAN-001
	Armored Configuration	2x4 Configuration	
Frame material	All-steel (AR500 brackets, posts, splices)	Steel A-Brackets + customer-supplied 2x4 lumber	
Relative cost	Higher	More cost-friendly	
Adjustability	Continuous, via splice plate overlap	Cut-to-length by the customer	
Assembly	Bolted throughout, laser-cut 9/16" square holes for 1/2" diameter carriage bolts	Some factory bolting; customer drills crossbar holes	
Frame durability	Withstands fragmentation impacts without degradation, capable of withstanding direct impacts from most cartridges	Straps positioned to keep fragmentation in front of 2x4 cross board. Direct impacts and fragmentation will degrade 2x4 boards over time. (Sec. 8.7)	
Distance ratings	Identical, determined by plate steel, not frame	Identical, determined by plate steel, not frame	

Both configurations attach to the same A-Bracket. Here is what each leg assembly looks like side by side:



7.0

Configuration A: Armored Frame



Fully assembled Armored Easy Rack

7.1 Component Overview

Component	Part Number	Std. Qty	Description
Armored A-Bracket	DLX-BRKT-AR500	2	0.25" AR500 end-bracket. One per side; legs and crossbar both attach here.
Armored Post Bottom	ADAP-38-P-BOTTG4	2	3/8" armor. Forms each end of the crossbar; keys into the A-Bracket slot.
Extended Splice Plate	ADAP-38-P-SPLICE-EXT	9	3/8" armor. 8 used to build the two leg assemblies (4 each); 1 completes the standard crossbar.
Standard Splice Plate	ADAP-38-P-SPLICE	Only provided if ordered separately	Customer can choose to add the standard splice to the order, but it is not included standard unless purchased separately. The standard (shorter) splice can be used in place of the extended splice if a wider footprint is not needed for your particular application.
Rubber Strap, 8" 2-Hole	DLX-STRAP-716-8-2H	<i>see Sec. 11.0</i>	1 bolt to crossbar, 1 bolt to plate.
Rubber Strap, 8" 3-Hole	DLX-STRAP-716-8-3H	<i>see Sec. 11.0</i>	2 bolts to crossbar, 1 bolt to plate.
Target Plate, 8" Round, 2-Hole, 3/8" AR500 (Mineral Bronze)	GONG-38-8INCHROUND-2H	6 (or per config)	Standard Easy Rack gong, AR500 steel.

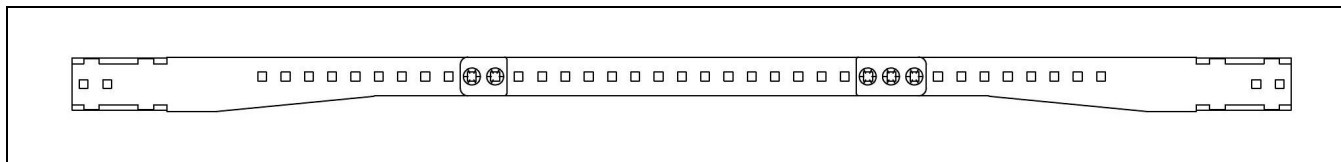
TA TARGETS		EASY RACK / USER MANUAL		MAN-001
Component	Part Number	Std. Qty	Description	
Target Plate, 8" Round, 2-Hole, 3/8" AR550 (White)	GONG-AR550-38-8INCHROUND-2H	6 (or per config)	Standard Easy Rack gong, AR550 steel, upgraded option.	
Target Plate, 8" Round, 2-Hole, 1/2" AR550 (White)	GONG-AR550-12-8INCHROUND-2H	6 (or per config)	Standard Easy Rack gong, AR550 steel, premium option. Longest warranty of the three steel options, Section 16.0.	
Hardware (bolts, nuts, washers)	<i>see Sec. 9.0</i>	N/A	See Connections Reference.	

Note: 12" rubber straps (DLX-STRAP-716-12-2H and -12-3H) are also available for 12" round gongs in custom configurations, though not part of the standard 8"-gong build.

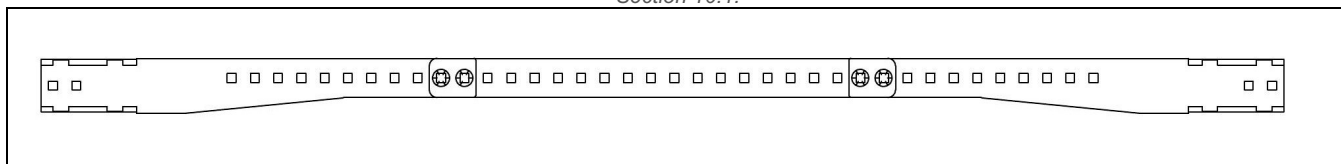
7.2 Assemble the Crossbar

1. Start with your two Armored Post Bottoms (ADAP-38-P-BOTTG4). These form both ends of the crossbar.
2. Choose your splice plates. The Easy Rack and Armored Deluxe Gong System both ship standard with Extended Splice Plates. Standard (shorter) Splice Plates are available separately for shorter custom runs, if purchased.
3. Before bolting anything together, determine whether each joint needs a two-hole overlap (standard) or a three-hole overlap, based on your gong count and desired spacing (see Section 10.0).
4. Working outward from each Post Bottom toward the center, bolt the splice plates together end-to-end using 1/2" Grade 8 Carriage Bolts and locking nuts through the aligned square holes, at the overlap determined above.
5. Position each Post Bottom so its angled/tapered face points DOWN toward the ground.
6. IMPORTANT: Carriage bolt heads (the rounded, smooth side) must always face the shooter. The rounded head reduces erratic fragmentation risk if a round strikes near the bolt. The threaded end and locking nut always face away from the shooter.

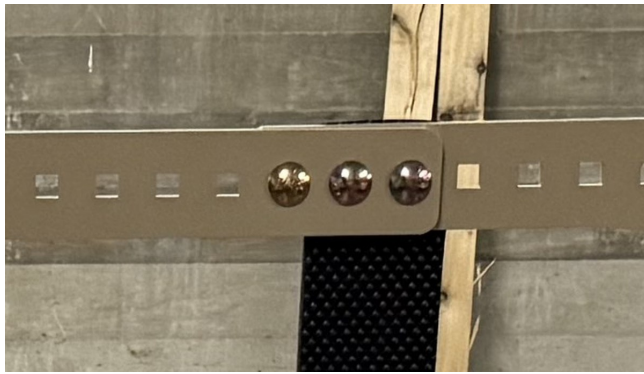
The two overlap types referenced in Step 3 look like this. Both example crossbars below are shown fully assembled, with carriage bolt heads facing the camera (the shooter-facing side):



Standard Easy Rack crossbar (5–6 gongs): two-hole overlap on one joint, three-hole overlap on the other, to keep gong spacing correct. See Section 10.1.



Custom build with fewer than 5 gongs: two-hole overlap at both joints. Simpler, but gong spacing may not come out perfectly even.



Three-hole overlap, close-up



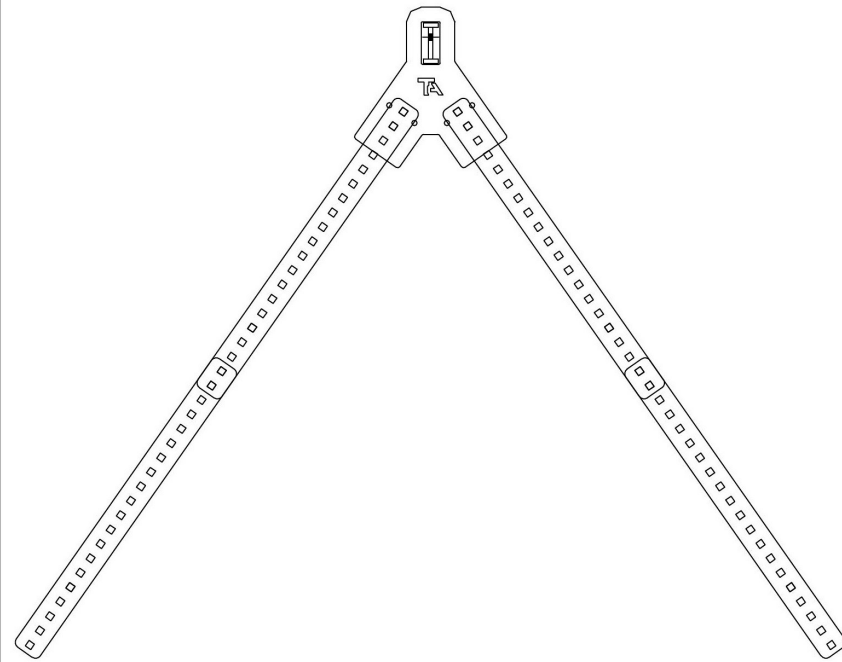
Two-hole overlap, close-up

Set the completed crossbar assembly aside.

7.3 Build the Leg Assemblies

1. Each leg assembly uses one Armored A-Bracket (DLX-BRKT-AR500) and four Extended Splice Plates. Two full leg assemblies are required (left and right), eight Extended Splice Plates total.
2. For each leg assembly: bolt two Extended Splice Plates together to form one leg. Repeat to form a second leg. This gives you a front leg and a rear leg per side.
3. Bolt both legs to the OUTSIDE face of the A-Bracket (not the inside) using the dedicated leg-mounting holes.
4. Each leg adjusts independently along its splice overlap to suit uneven terrain: loosen, slide to the desired position, and re-tighten.

MAXIMUM LEG LENGTH: Do not exceed 60" total leg length (A-Bracket to ground), adjusted via the splice overlap. Longer legs reduce stability and may require a cross support between the legs to remain safe and rigid. TA Targets does not currently offer a cross-support accessory, so leg lengths beyond 60" are not supported.



Armored leg assembly: both legs shown, bolted to the outside face of the A-Bracket. Each leg's splice overlap allows length adjustment. Maximum total leg length: 60".

7.4 Slide the Crossbar into the Leg Assemblies

This step requires two people.

1. Stand one leg assembly upright with both legs (front and rear) resting on the ground, A-Bracket vertical.
2. With a second person supporting the crossbar, slide the Armored Post Bottom at one end into the rectangular slot in the A-Bracket.
3. Install one 2.5" Grade 8 Carriage Bolt through the square hole on one side of the A-Bracket/post joint. Install a second 2.5" bolt through the square hole on the opposite side. Both bolts are installed on opposite sides of the bracket, but both point the same direction: round head ALWAYS facing the shooter, on both bolts.



Retention bolts from the shooter's side: both round heads face the camera.



Both retention bolts installed, opposite sides of the joint, same direction.

4. Repeat Steps 1–3 on the opposite end with the second leg assembly.
5. Kick both leg assemblies outward, away from the center of the rack. This wedges and binds the A-Bracket against the crossbar; the two 2.5" bolts add further rigidity.

⚠ PINCH HAZARD: Kicking the legs outward wedges steel against steel at the A-Bracket/crossbar joint. Keep hands and fingers clear of this junction while the legs are being spread. Perform this step with a second person and clear communication before moving either leg.

7.5 Install the Rubber Straps: Armored Orientation

1. Rubber straps are always installed BEHIND the crossbar and BEHIND the target plate, never bolted from the front.
2. Each strap has a smooth side and a textured side. On the Armored configuration, the textured side faces the shooter; it grips the crossbar for stability.
3. Bolt through the front of the crossbar (head facing shooter), through the crossbar, through the strap from behind, then washer, then locking nut.
4. 2-Hole straps: one bolt to the crossbar, one bolt to the target plate. Typically two 2-hole straps are used per plate (one per top mounting hole) for larger or heavier plates.
5. 3-Hole straps: two bolts to the crossbar, one bolt to the target plate. One 3-hole strap is used per plate; the single plate-side bolt allows more plate movement on impact.
6. Torque note: snug the locking nut only until the washer just presses into the rubber and the rubber shows a slight bulge. Do not overtighten. A washer is mandatory on every strap bolt.



Correctly torqued strap bolt: the washer presses lightly into the rubber with a slight bulge. No more.

7.6 Mount the Target Plates

1. 1/2" Carriage Bolt through the target plate, then a washer against the plate, then the strap, then a second washer, then the locking nut.
2. Do not overtighten. Overtightening at the plate connection damages the rubber the same way as at the crossbar connection.

For an exploded view of this exact stack (bolt, plate, washer, strap, washer, locking nut), see the Single Armored Splice Connection diagram in Section 9.0.

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8.0	Configuration B: 2x4 Frame		



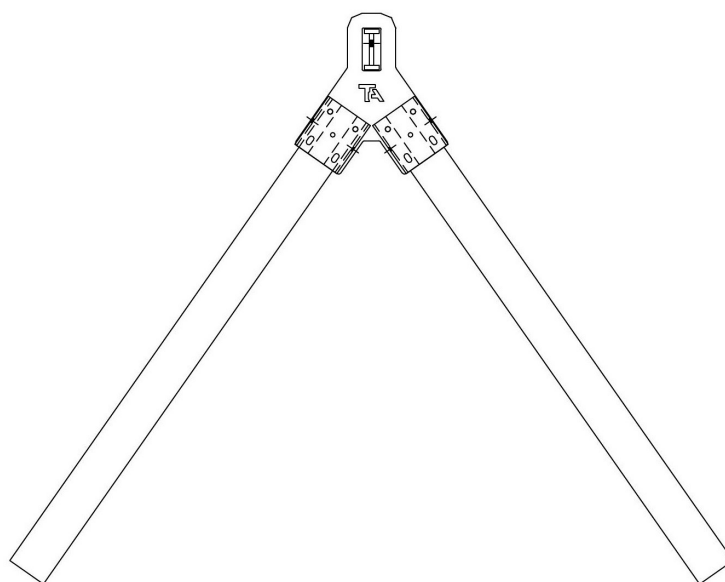
Fully assembled 2x4 Easy Rack, six-gong standard build.

The 2x4 configuration uses the same steel A-Bracket end supports as the Armored configuration, paired with customer-supplied 2x4 lumber for the legs and crossbar. This is a more cost-friendly build; the customer cuts lumber to fit their own site and desired gong count.

8.1 Component Overview

Component	Part Number	Std. Qty	Description
Armored A-Bracket	DLX-BRKT-AR500	2	Same bracket used in the Armored configuration.
2x4 Tube Base	BDB-2X4-TUBE	4	Steel receiver tube. 2 per A-Bracket (front and rear leg position). 2x4 leg slides in and is clamped by an included thumb screw.
2x4 Lumber (legs)	<i>customer supplied</i>	4 boards	SPF framing lumber or treated lumber. Cut to length by customer. See Section 8.2.
2x4 Lumber (crossbar)	<i>customer supplied</i>	1 board (or spliced as needed)	Cut to length by customer to fit desired gong count/spacing.
Rubber Strap, 8" 2-Hole	DLX-STRAP-716-8-2H	<i>see Sec. 11.0</i>	1 bolt to crossbar, 1 bolt to plate.
Rubber Strap, 8" 3-Hole	DLX-STRAP-716-8-3H	<i>see Sec. 11.0</i>	2 bolts to crossbar, 1 bolt to plate.

TA TARGETS	EASY RACK / USER MANUAL			MAN-001
Component	Part Number	Std. Qty	Description	
Target Plate, 8" Round, 2-Hole, 3/8" AR500 (Mineral Bronze)	GONG-38-8INCHROUND-2H	6 (or per config)	Standard Easy Rack gong, AR500 steel.	
Target Plate, 8" Round, 2-Hole, 3/8" AR550 (White)	GONG-AR550-38-8INCHROUND-2H	6 (or per config)	Standard Easy Rack gong, AR550 steel, upgraded option.	
Target Plate, 8" Round, 2-Hole, 1/2" AR550 (White)	GONG-AR550-12-8INCHROUND-2H	6 (or per config)	Standard Easy Rack gong, AR550 steel, premium option. Longest warranty of the three steel options, Section 16.0.	
Hardware (bolts, nuts, washers, thumb screws)	see Sec. 9.0	N/A	See Connections Reference.	



BDB-2X4-TUBE bases bolted to the A-Bracket, both tube positions shown with legs installed. Maximum leg length: 48".

8.2 Cut Your Legs and Crossbar to Fit Your Site

1. 2x4 legs are cut to length by the customer to suit the terrain and desired height. Maximum leg length: 48". Do not exceed this length.

MAXIMUM LEG LENGTH: Do not exceed 48" per leg. Longer legs reduce stability and may require a cross support between the legs to remain safe and rigid. TA Targets does not currently offer a cross-support accessory, so leg lengths beyond 48" are not supported.

2. For sloped or uneven terrain, trim leg length as needed on a per-leg basis for stability, staying within the 48" maximum. Each leg is cut and fitted independently.
3. The crossbar is cut to whatever length accommodates the number of gongs you intend to hang.

Because the crossbar is just a length of lumber, gong count is not fixed at build time. To add or remove gongs later, cut a new crossbar to the length you need and drill new strap positions per Section 8.5. There is no need to replace the rest of the system.

Lumber: standard SPF framing lumber or treated lumber may be used for either legs or crossbar, per customer preference.

TREATED LUMBER NOTICE: If using treated lumber, wash hands thoroughly after handling. Wear a dust mask when cutting or drilling. Never burn treated lumber or offcuts. Do not use treated lumber scraps as mulch or animal bedding.

8.3 Attach the 2x4 Tube Bases to the A-Bracket

1. Bolt two BDB-2X4-TUBE bases to the outside face of each A-Bracket (one for the front leg position, one for the rear) using 3/8" x 3" Carriage Bolts (CB38-16X3) and 3/8"-16 Nylon Locking Nuts (LN38-16N), two bolts per tube.
2. NOTE: This hardware is 3/8", not the 1/2" hardware used everywhere else in this system. Confirm you are using the correct bolt before assembling. See Section 9.0.

BOLT ORIENTATION EXCEPTION: On this connection only, bolt heads face **INWARD**, toward the gongs, not toward the shooter. This applies to the two 3/8" carriage bolts that pass through the A-Bracket and the BDB-2X4-TUBE tube base. This is the opposite of every other bolt in this system. Facing the heads toward the gongs protects the threads from fragmentation; threads that take repeated fragmentation hits become difficult, sometimes impossible, to remove later. This is the only safe orientation here.

8.4 Assemble and Install the Legs

1. Slide each cut 2x4 leg into its tube base.
2. Hand-tighten the included thumb screw on each tube until it presses lightly against the leg. No further torque is required.

THUMB SCREW ORIENTATION: The thumb screw that bears on the skinny (narrow) side of the 2x4 leg must face the inside of the bracket, toward the opposite leg. It must never face the outside edge of the A-frame assembly.



Correct 2x4 leg insertion and thumb screw orientation.

8.5 Drill the Crossbar for Strap Mounting

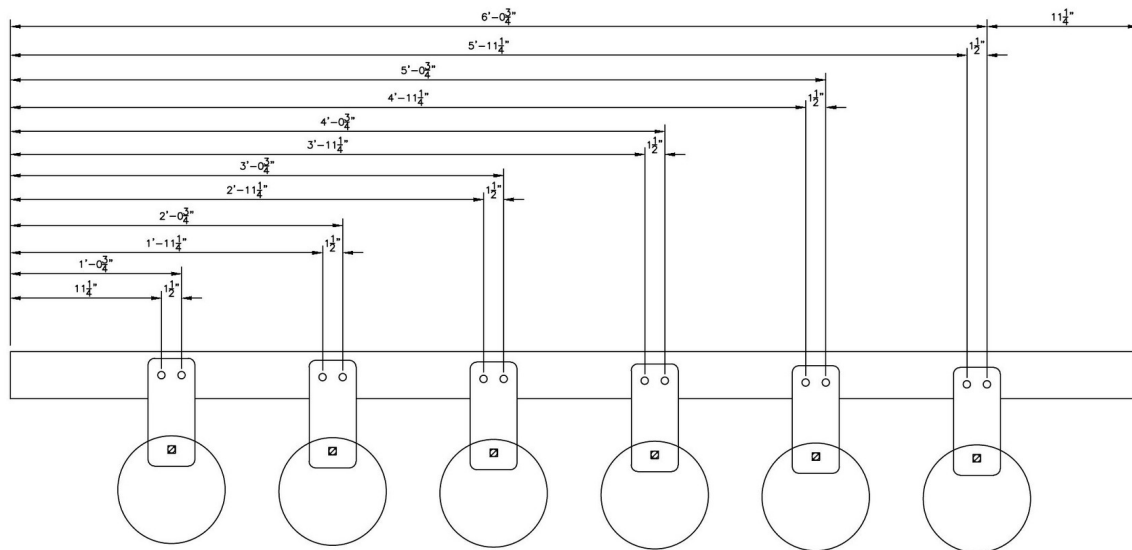
This step involves power tools. Only individuals experienced with power tool operation should perform this step. Eye protection and appropriate PPE are required for drilling, cutting, and assembly.

1. Lay the cut crossbar board on the ground.
2. Lay the rubber straps loosely on top of the board in the position you want each gong to hang.
3. Trace (stencil) the strap's bolt holes onto the board at each position.
4. Drill each marked hole using a 1/2" or 9/16" wood drill bit and a power drill.

The strap itself is your spacing template. There is no separate measurement layout required. Space gongs so plates cannot strike one another when swinging.

Standard 6-Gong Layout Reference: If you would rather cut and drill to exact dimensions than use the strap-as-template method above, the diagram below is the hole layout TA Targets uses for the standard 6-gong Easy Rack and the "Know Your Limits" array.

- Crossbar length: 7' (84") total, with 11-1/4" from each end of the board to the nearest hole.
- Gong positions are spaced 12" on-center, all 6 positions evenly spaced across the board.
- Each position gets two holes, 1-1/2" apart, for the 8" 2-Hole strap. This layout is specific to the 2-Hole strap and the standard 6-gong count. For a custom array, a different gong count, or 3-Hole straps, use the strap-as-template method above instead.



Standard 6-gong crossbar drill diagram: 7' board, 12" on-center gong spacing, hole pairs 1-1/2" apart, 11-1/4" end margins.

8.6 Slide the Crossbar into the Leg Assemblies

This step requires two people, and the sequence mirrors the Armored configuration:

1. Stand one leg assembly upright with both legs (front and rear) resting on the ground, A-Bracket vertical.
2. With a second person supporting the crossbar, slide the crossbar into the rectangular slot in the A-Bracket.
3. Repeat on the opposite end with the second leg assembly.
4. Kick both leg assemblies outward, away from the center of the rack, to wedge the crossbar into the brackets.

Unlike the Armored configuration, no retention bolts are used at this joint. When the A-Bracket pinches down on the 2x4 board, it bites into the wood and cannot slip free.

⚠ PINCH HAZARD: As with the Armored configuration, kicking the legs outward wedges the crossbar tightly into the bracket slot. Keep hands and fingers clear of this junction while the legs are being spread.



Kick both leg assemblies outward with hands well clear of the A-Bracket / crossbar junction.

Verifying the Crossbar Is Properly Seated: Once both leg assemblies are kicked outward, inspect the wood where each A-Bracket presses into the board. A properly seated joint leaves a light, clean impression across the face of the board where the bracket edge has bitten into it. With hands kept clear of the pinch point, wiggle the assembly: if everything feels stable and the crossbar cannot slide, it is properly positioned. If you do not see the impression, or the crossbar can still be shifted by hand at either bracket, the joint is not fully seated. Kick the legs further outward, hands clear of the junction, until the impression appears and the crossbar no longer moves.

Note: the Armored configuration does not rely on this bite-and-wiggle check. Steel cannot bite into steel the way the A-Bracket bites into a 2x4 board, so the Armored crossbar instead uses two 1/2" x 2.5" retention bolts to lock the joint in place. See Section 7.4.



Properly seated crossbar: the A-Bracket edge has bitten a visible line into the 2x4 board. This impression is your visual confirmation the joint is secure.

8.7 Install the Rubber Straps: 2x4 Orientation (REVERSED from Armored)

THIS IS THE OPPOSITE OF THE ARMORED CONFIGURATION. If you have built the Armored version before, read this carefully before installing straps.

The strap goes **IN FRONT** of the 2x4 board, not behind it. The textured side of the strap faces **AGAINST** the board; the smooth side faces the shooter.

Why: the Armored crossbar is steel and can safely absorb bullet fragmentation. A 2x4 board cannot. Mounting the strap, and therefore the gong, in front of the board keeps fragmentation from striking and degrading the wood.

1. Bolt through the front of the crossbar (head facing shooter, as always), through the strap (smooth side out), then through the drilled hole in the board, then washer, then locking nut on the back side.
2. Crossbar-side bolt: always a 1/2" x 2.5" Grade 8 Carriage Bolt. The board's 1.5" thickness, plus the strap's 7/16" thickness, plus washers, exceeds what a 1.5" bolt can safely thread into a locking nut. There is no shorter-bolt option at this connection.
3. The strap continues to hang **BEHIND** the target plate, exactly as in the Armored configuration. This does not change.



Correct 2x4 strap orientation: smooth side facing the shooter, textured side against the board.

8.8 Mount the Target Plates

1. 1/2" x 1.5" Carriage Bolt through the target plate, then a washer against the plate, then the strap, then a second washer, then the locking nut. Identical to the Armored configuration.
2. Do not overtighten.

See the mounting diagram in Section 9.0. This connection is identical regardless of frame configuration.

9.0

Connections Reference

Every bolted connection in the Easy Rack system, both configurations, in one place.

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Connection	Hole Type	Hardware	Note	
Steel splice-to-splice / splice-to-BOTTG4 overlap (Armored)	Laser-cut 9/16" square	1/2" x 1.5" (CB12-13X15G8) or 2.5" (CB12-13X25G8) Grade 8 carriage bolt, per layer count, Sec. 10.2	Head faces shooter	
A-Bracket-to-crossbar retention (Armored)	Laser-cut square	1/2" x 2.5" Grade 8 carriage bolt (CB12-13X25G8), x2	Opposite sides of bracket; both heads face shooter	
Strap-to-crossbar (Armored)	Laser-cut square	1/2" carriage bolt, 1.5" (CB12-13X15G8) or 2.5" (CB12-13X25G8) per layer count	Head faces shooter; texture faces shooter/crossbar	
2x4 Tube-to-A-Bracket	Factory laser-cut	3/8" x 3" carriage bolt (CB38-16X3) + 3/8"-16 nylon locking nut (LN38-16N), x2 per tube	Only 3/8" hardware in the system. Do not substitute 1/2". Heads face INWARD toward the gongs, opposite of every other bolt in this system.	
Strap-to-crossbar (2x4)	Customer-drilled 1/2" or 9/16"	1/2" x 2.5" carriage bolt (CB12-13X25G8), always	No layer-counting needed. Board + strap + washers always exceeds 1.5" capacity. Texture faces board, smooth faces shooter.	
Strap-to-target plate (either configuration)	Factory laser-cut	1/2" x 1.5" carriage bolt (CB12-13X15G8), always	Same across both configurations. Strap always behind plate.	

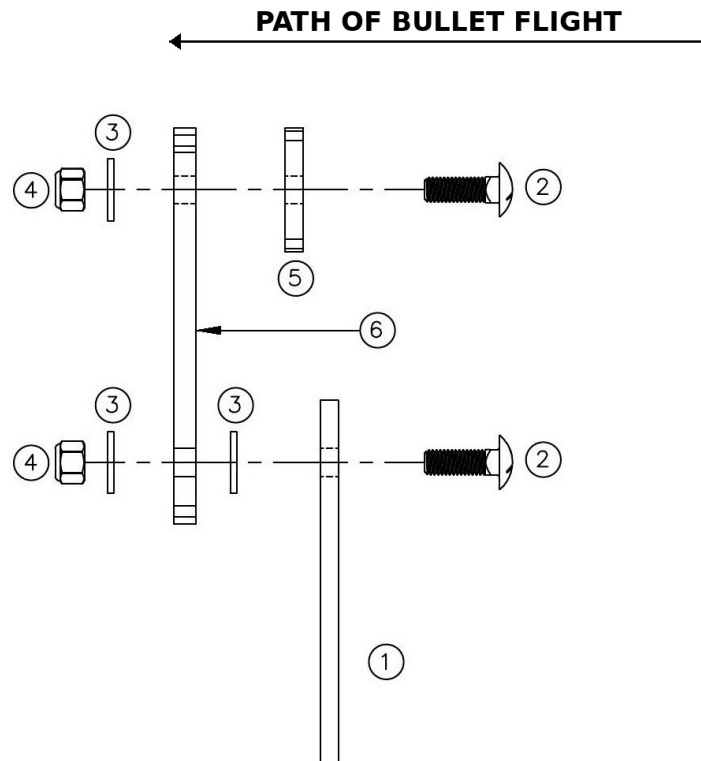
Before installing any bolt at an overlap joint on the Armored configuration, count your layers. If a strap is landing on a hole where two structural pieces already overlap, use the 2.5" bolt. A 1.5" bolt will not leave enough thread engagement for the locking nut at that location.

Part numbers: 1/2"-13 x 1.5" Grade 8 Carriage Bolt = CB12-13X15G8. 1/2"-13 x 2.5" Grade 8 Carriage Bolt = CB12-13X25G8. 1/2" Flat Washer = FW12 (used under the nut at every 1/2" bolted connection in this system, even where not listed separately above). 1/2"-13 Mechanical Locking Nut = L12-13. 3/8"-16 x 3" Grade 8 Carriage Bolt = CB38-16X3. 3/8"-16 Nylon Locking Nut = LN38-16N.

Three splice and strap connections cover every bolted joint that carries a target plate. Each is shown exploded below with its exact hardware.

Single Armored Splice Connection

One structural layer under the strap, no overlap at this hole. Uses the 1.5" bolt.

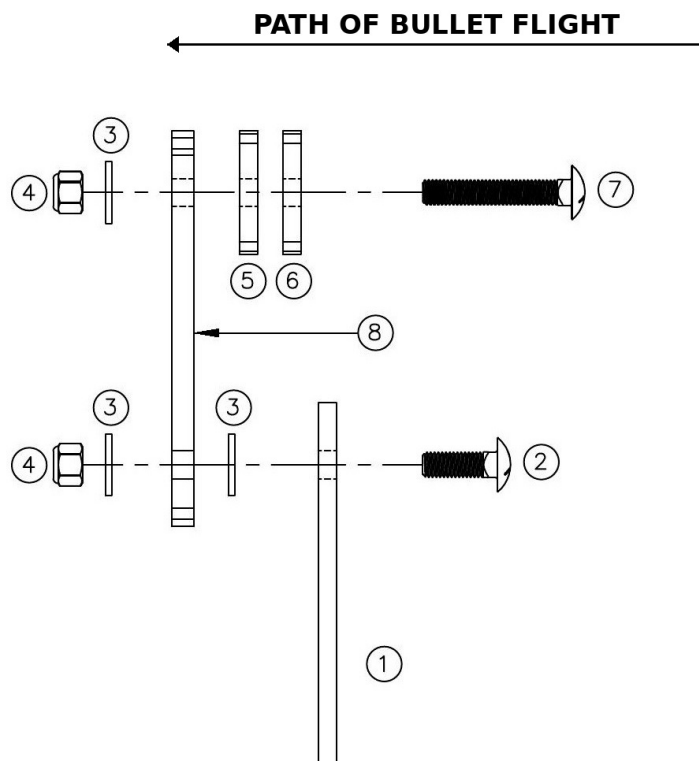


Shown from side view of components.

#	Component	Note
1	Gong Target Plate	Customer's selected plate
2	1/2" x 1.5" Grade 8 Carriage Bolt	Used at both holes in this connection
3	1/2" Flat Washer	
4	1/2" Locking Nut	
5	Armored Splice	Single layer at this hole, no overlap
6	Rubber Strap	Customer's selected strap type

Double Armored Splice Connection

The strap lands where two structural layers (BOTTG4 and Armored Splice) already overlap. This triple stack requires the 2.5" bolt at the crossbar-side hole.

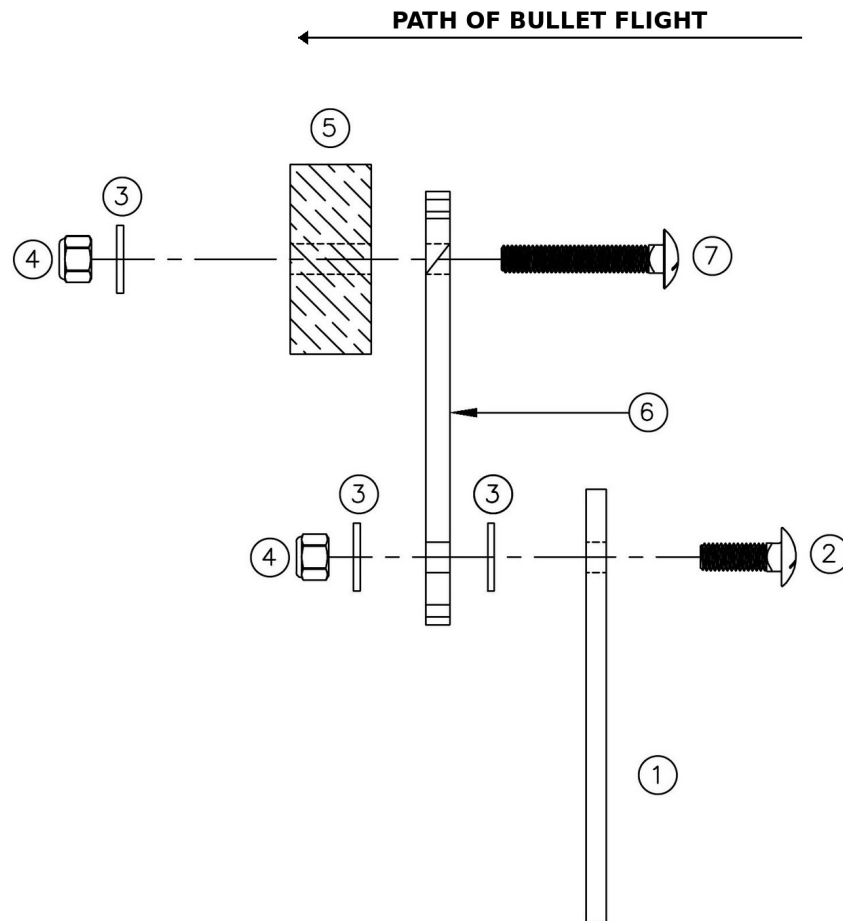


Shown from side view of components.

#	Component	Note
1	Gong Target Plate	Customer's selected plate
2	1/2" x 1.5" Grade 8 Carriage Bolt	Plate-side hole only
3	1/2" Flat Washer	
4	1/2" Locking Nut	
5	Armored Post Bottom (BOTTG4)	Always behind the splice
6	Armored Splice	In front of BOTTG4
7	1/2" x 2.5" Grade 8 Carriage Bolt	Crossbar-side hole; two overlapping layers plus the strap require the longer bolt
8	Rubber Strap	Customer's selected strap type

2x4 Strap and Target Connection

Only one structural layer (the 2x4 board) sits under the strap, but the board's own 1.5" thickness uses up a 1.5" bolt's full length on its own. The board-side hole always takes the 2.5" bolt, regardless of layer count.



Shown from side view of components.

#	Component	Note
1	Gong Target Plate	Customer's selected plate
2	1/2" x 1.5" Grade 8 Carriage Bolt	Plate-side hole only
3	1/2" Flat Washer	
4	1/2" Locking Nut	
5	2x4 Cross Board	Customer-supplied lumber
6	Rubber Strap	Customer's selected strap type
7	1/2" x 2.5" Grade 8 Carriage Bolt	Board-side hole; required by the board's own thickness, not layer count

10.0 Building a Custom Configuration (Armored Only)

This section applies to the Armored configuration. The 2x4 configuration's crossbar is a single cut board and does not use splice overlaps.

10.1 Splice Overlap: Two Holes vs. Three Holes

When two splice sections (an Extended Splice Plate and an Armored Post Bottom, or two Extended Splice Plates) are joined, the standard overlap is two holes, bolted with two carriage bolts. This is correct for the majority of custom builds.

- 4 gong targets or fewer: always use the standard two-hole overlap. No further calculation is needed.
- 5–6 gong targets (including the standard Easy Rack and the "Know Your Limits" style array): expect exactly one joint in the crossbar that requires a three-hole overlap instead of two, to keep gong spacing correct across the whole array.

The standard Easy Rack and "Know Your Limits" array are the only two builds that require a three-hole overlap. Extra 1/2" x 2.5" carriage bolts are included with every build so you have what you need if a custom array calls for one. On a custom array, there is no required formula for where a three-hole overlap goes: it is not a safety matter, only a spacing one. If a joint ends up with a two-hole overlap where a three-hole would have kept gong spacing perfectly even, the only effect is that the spacing looks slightly uneven. The one exception is if that unevenness lets two gongs swing into each other; if so, adjust the overlap or plate spacing until they clear.

10.2 Bolt Length at Overlap Joints

Situation	Bolt Required
Standard two-piece overlap, no strap at that hole	1/2" x 1.5" Grade 8 Carriage Bolt (CB12-13X15G8)
Strap bolted to a single layer, no overlap at that hole	1/2" x 1.5" Grade 8 Carriage Bolt (CB12-13X15G8)
A strap lands where two pieces already overlap (triple stack)	1/2" x 2.5" Grade 8 Carriage Bolt (CB12-13X25G8), required
A-Bracket-to-crossbar retention	1/2" x 2.5" Grade 8 Carriage Bolt (CB12-13X25G8)



Single splice layer: standard 1/2" x 1.5" carriage bolt.



Two-layer overlap joint: 1/2" x 2.5" carriage bolt, longer to span both layers.

11.0 Choosing a Strap Type

Strap selection comes down to two separate decisions: matching strap length to gong size, and choosing how much plate movement you want.

Step 1: Match Strap Length to Gong Size

Gong Size	Recommendation
8" or smaller (round, square, or any other shape)	Use the 8" straps (2-Hole or 3-Hole). A longer strap lets a smaller, lighter gong wrap up and over the crossbar and get hung up, especially under larger-cartridge impacts.
Larger than 8"	Any strap works. The gong's size and weight prevent it from wrapping over the crossbar.

Step 2: Choose 2-Hole vs. 3-Hole by Desired Feedback

Priority	Choice
Maximum plate movement and impact feedback (precision rifle shooters reading shot placement from how the plate swings)	One 3-Hole strap per plate. The single plate-side bolt lets the gong move freely in all directions.
Maximum stability and strength, less plate movement	Two 2-Hole straps per plate (one per top mounting hole).

12.0 Safe Shooting Distances

Your safe shooting distance is determined by the steel your target plate is made from, not by the frame configuration. Identify your plate material using the color key below, then use the matching table. These ratings assume a muzzle velocity of 3,000 FPS or less; for velocities above 3,000 FPS, add 25 yards minimum for every additional 100 FPS.

Color key: Mineral Bronze powder coat = AR500. White powder coat = AR550. Always confirm by the sticker on the back of your plate. See Section 3.0 for full guidance on identifying your target material.

VELOCITY-BASED DISTANCE ADJUSTMENT: Minimum distances assume a muzzle velocity of 3,000 FPS or less. If your ammunition is faster, use the table below to find how many yards to add to your plate's rated distance. When in doubt, round up to the next row.

Your Ammo's Speed Over 3,000 FPS	Add to Your Plate's Rated Distance
1 – 100 FPS over	Add 25 yards
101 – 200 FPS over	Add 50 yards
201 – 300 FPS over	Add 75 yards
301 – 400 FPS over	Add 100 yards
401 – 500 FPS over	Add 125 yards
More than 500 FPS over	Contact us before shooting

Example: a rifle at 3,200 FPS is 200 FPS over 3,000. That falls in the "101–200" row, so add 50 yards to your plate's rated distance: a 50-yard rating becomes a 100-yard minimum.

12.1 3/8" AR500 (Mineral Bronze)

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Weapon Type	Cartridge	Velocity	Bullet Make	Distance
Pistol	22LR	All Velocities	FMJ, HP, Lead	10 Yards
Rifle	22LR	All Velocities	FMJ, HP, Lead	10 Yards
Centerfire Pistol	.380, 9mm, 40, 45ACP, 10mm, 357 Sig	Up to 1500 FPS	FMJ, HP, TMJ, Lead, Soft Point	10 Yards
Magnum Pistol	44 Mag, 454 Casull, etc.	Up to 1800 FPS	FMJ, HP, TMJ, Lead, Soft Point	25 Yards
Pistol Caliber Carbine	9mm, 40, 45, 10mm, 44 mag, 357 mag, etc.	Up to 2,400 FPS	FMJ, HP, TMJ, Lead, Soft Point	75 Yards
Light Rifle	5.45x39, 5.56/.223, 7.62x39, 6.8 SPC, 6.5 Grendel, etc.	3,000 FPS or less	FMJ, HP, TMJ, Lead, Soft Point, Ballistic Tip, Copper Expanding	100 Yards
Larger Bore Rifle	.243, .308, 7mm-08, etc.	3,000 FPS or less	FMJ, HP, TMJ, Lead, Soft Point, Ballistic Tip, Copper Expanding	100 Yards
Magnum Rifle	.300 Win Mag, 7mm Mag, etc.	3,000 FPS or less	FMJ, HP, TMJ, Lead, Soft Point, Ballistic Tip, Copper Expanding	300 Yards
Shotgun Slugs	.410, 20GA, 12GA	All rifled slug velocities	Rifled Slugs	Not Approved
Shotgun Buck Shot	.410, 16GA, 20GA, 28GA, 12GA	All lead buck shot	Buck Shot	30 Yards
Shotgun Bird Shot	.410, 16GA, 20GA, 28GA, 12GA	All lead bird shot	Bird Shot	10 Yards
50BMG & Wildcat	Not Allowed	Not Allowed	Not Allowed	NOT ALLOWED

Reminder: distances above assume a muzzle velocity of 3,000 FPS or less. If your ammunition is faster, see the velocity adjustment note at the start of Section 12.0.

(Continued onto next page)

12.2 3/8" AR550 (White)

Weapon Type	Cartridge	Velocity	Bullet Make	Distance
Pistol	22LR	All Velocities	FMJ, HP, Lead	10 Yards
Rifle	22LR	All Velocities	FMJ, HP, Lead	10 Yards
Centerfire Pistol	.380, 9mm, 40, 45ACP, 10mm, 357 Sig	Up to 1500 FPS	FMJ, HP, TMJ, Lead, Soft Point	10 Yards
Magnum Pistol	44 Mag, 454 Casull, etc.	Up to 1800 FPS	FMJ, HP, TMJ, Lead, Soft Point	25 Yards
Pistol Caliber Carbine	9mm, 40, 45, 10mm, 44 mag, 357 mag, etc.	Up to 2,400 FPS	FMJ, HP, TMJ, Lead, Soft Point	25 Yards
Light Rifle	5.45x39, 5.56/.223, 7.62x39, 6.8 SPC, 6.5 Grendel, etc.	3,000 FPS or less	FMJ, HP, TMJ, Lead, Soft Point, Ballistic Tip, Copper Expanding	50 Yards
Larger Bore Rifle	.243, .308, 7mm-08, etc.	3,000 FPS or less	FMJ, HP, TMJ, Lead, Soft Point, Ballistic Tip, Copper Expanding	100 Yards
Magnum Rifle	.300 Win Mag, 7mm Mag, 7 PRC, 300 PRC, etc.	3,000 FPS or less	FMJ, HP, TMJ, Lead, Soft Point, Ballistic Tip, Copper Expanding	200 Yards
Shotgun Slugs	.410, 20GA, 12GA	All rifled slug velocities	Rifled Slugs	150 Yards
Shotgun Buck Shot	.410, 16GA, 20GA, 28GA, 12GA	All lead buck shot	Buck Shot	30 Yards
Shotgun Bird Shot	.410, 16GA, 20GA, 28GA, 12GA	All lead bird shot	Bird Shot	10 Yards
50BMG & Wildcat	408 CT, 416 Barrett, 50 BMG	3,000 FPS or less	FMJ, Copper Solid, A-Tip / Match	500+ Yards

Reminder: distances above assume a muzzle velocity of 3,000 FPS or less. If your ammunition is faster, see the velocity adjustment note at the start of Section 12.0.

(Continued onto next page)

12.3 1/2" AR550 (White)

Weapon Type	Cartridge	Velocity	Bullet Make	Distance
Pistol	22LR	All Velocities	FMJ, HP, Lead	10 Yards
Rifle	22LR	All Velocities	FMJ, HP, Lead	10 Yards
Centerfire Pistol	.380, 9mm, 40, 45ACP, 10mm, 357 Sig	Up to 1500 FPS	FMJ, HP, TMJ, Lead, Soft Point	10 Yards
Magnum Pistol	44 Mag, 454 Casull, etc.	Up to 1800 FPS	FMJ, HP, TMJ, Lead, Soft Point	25 Yards
Pistol Caliber Carbine	9mm, 40, 45, 10mm, 44 mag, 357 mag, etc.	Up to 2,400 FPS	FMJ, HP, TMJ, Lead, Soft Point	25 Yards
Light Rifle	5.45x39, 5.56/.223, 7.62x39, 6.8 SPC, 6.5 Grendel, etc.	3,000 FPS or less	FMJ, HP, TMJ, Lead, Soft Point, Ballistic Tip, Copper Expanding	50 Yards
Larger Bore Rifle	.243, .308, 7mm-08, etc.	3,000 FPS or less	FMJ, HP, TMJ, Lead, Soft Point, Ballistic Tip, Copper Expanding	50 Yards
Magnum Rifle	.300 Win Mag, 7mm Mag, 7 PRC, 300 PRC, etc.	3,000 FPS or less	FMJ, HP, TMJ, Lead, Soft Point, Ballistic Tip, Copper Expanding	200 Yards
Shotgun Slugs	.410, 20GA, 12GA	All rifled slug velocities	Rifled Slugs	150 Yards
Shotgun Buck Shot	.410, 16GA, 20GA, 28GA, 12GA	All lead buck shot	Buck Shot	30 Yards
Shotgun Bird Shot	.410, 16GA, 20GA, 28GA, 12GA	All lead bird shot	Bird Shot	10 Yards
50BMG & Wildcat	408 CT, 416 Barrett, 50 BMG	3,000 FPS or less	FMJ, Copper Solid, A-Tip / Match	500+ Yards

Reminder: distances above assume a muzzle velocity of 3,000 FPS or less. If your ammunition is faster, see the velocity adjustment note at the start of Section 12.0.

Wildcat and 50BMG use: distances above are PLATE distance ratings. Impacts on the crossbar, post, or bracket, even at approved plate distances, can still cause frame damage and are not covered under warranty. Never use armor piercing, steel core, tungsten, incendiary, or explosive ammunition on any TA Targets product.

13.0 Approved and Prohibited Ammunition

Approved bullet construction:

- Full Metal Jacket (FMJ)
- Ballistic / plastic tip hunting ammunition
- Match grade ammunition (boat-tail hollow points)
- Hollow point ammunition
- Soft point ammunition, provided velocity is 3,000 FPS or less muzzle (higher-velocity soft point can damage steel target plates)
- Bi-metal ammunition, provided velocity is 3,000 FPS or less muzzle (may spark; never use in dry, fire-prone conditions)

Never use the following on any TA Targets product:

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- M855 steel core projectiles
- Solid copper machined (non-expanding) bullets
- Expanding solid copper bullets over posted velocity limits
- SS109
- Russian steel core ammunition
- Incendiary projectiles
- Tungsten core projectiles
- M855A1
- Any armor piercing or penetrating bullet construction not listed above
- Stainless steel shotgun shot

14.0 Expected Wear and Tear

14.1 Both Configurations

- Chipped powder coat or paint
- Worn hardware: nuts, bolts, and washers
- Edge chips on target plates from close edge impacts
- Slight impressions from hollow point or soft point ammunition (up to 1/32" depth)
- Gradual darkening, stiffening, or surface wear on the rubber straps, especially with hollow point ammunition

14.2 2x4 Configuration Only

- Wood splitting, cracking, or splintering, especially around drilled holes
- Warping or checking from moisture exposure
- Drilled holes enlarging ("wallowing out") over time from repeated impact vibration
- Rot, particularly at ground contact if legs are left outdoors long-term

Rubber Strap Life: Rubber straps are a consumable component. Bullet pass-throughs and fragmentation wear them over time, and sun exposure degrades the rubber over the years even without direct impacts. Replace a strap when you see visible cracking or tearing, or when concentrated hits have worn a hole larger than 3/4" in diameter. Straps are sold individually on our website.

15.0 Maintenance

15.1 Both Configurations

Component	What to look for	Maximum Threshold	Action Step
Target Plate	Curve / bending	Greater than 3/16" across the face	Replace the plate.
Target Plate	Pitting	1/8" depth and/or 3/16" diameter	Replace the plate.
Target Plate	Cracking	Any crack present	Replace the plate immediately.
Rubber Strap	Cracking, tearing, excessive stretch	Visible cracking or tearing, or a worn hole larger than 3/4" diameter from concentrated round impacts	Replace the strap. Sold individually on our website.
Hardware	Worn or impact-damaged bolts, nuts, washers	Any visible wear from impact/fragmentation	Replace affected hardware.

15.2 Armored Configuration Only

Component	What to look for	Maximum Threshold	Action Step
Bracket, Post, Splice	Chipped paint, surface rust	Cosmetic only, unless structural	Touch up paint to prevent corrosion.
Bracket, Post, Splice	Bending, cracking, weld failure	Any structural deformation or crack	Retire and replace the affected component.

15.3 2x4 Configuration Only

Component	What to look for	Maximum Threshold	Action Step
2x4 Board	Splitting or cracking	Any crack that compromises the drilled hole	Replace the board.
2x4 Board	Drilled hole wallowing/enlarging	Hole visibly elongated or loose around bolt	Replace the board or re-drill at a fresh location with adequate edge distance.
2x4 Board	Rot or moisture damage	Any soft or spongy wood	Replace the board.
Tube Base / Thumb Screw	Worn threads, loose clamp	Leg no longer clamps securely	Replace hardware.

16.0 Warranty

The terms below apply specifically to the Easy Rack system. For general company warranty policy, see tatargets.com/ta-targets-warranty.

Component	Warranty Terms
Rubber Straps	Guaranteed against defects on receipt only. If a strap arrives cut, torn, or cracked, we will replace it. Straps are a consumable component and are not warrantied against normal wear from range use.
Armored System (A-Brackets, Post Bottoms, Splice Plates)	Guaranteed against defects on receipt. The Armored System is designed to withstand fragmentation indefinitely; direct bullet impacts are not covered and should always be avoided, even though the system is fully armored. Fragmentation will chip powder coat and will wear hardware over time. This is expected and normal, not a defect: we do not warranty hardware, and we do not warranty scuffs, scrapes, or worn powder coat. Structural component failure from consistent impacts is covered for 3 years from date of purchase, limited to one replacement of each affected component in that period.
2x4 System (A-Brackets and Breakdown Base Tubes)	The A-Brackets are armored and fall under the Armored System warranty above. The Breakdown Base Tubes (BDB-2X4-TUBE) are mild steel and should never be shot; impacts will cause damage. These tubes are warrantied against manufacturing defects only, not impact damage.
AR500 Gongs	90-day manufacturer warranty, one replacement if defective under proper use during that period. Does not cover intentional damage, improper distances, or improper cartridge, velocity, or ammo construction.
AR550 3/8" Gongs	3-year warranty, one replacement for failure under proper use. Same cartridge and ammo requirements as AR500. Does not cover intentional misuse or destruction.

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Component	Warranty Terms		
AR550 1/2" Gongs	5-year warranty, one replacement for failure under proper use. Same cartridge and ammo requirements as AR500 and AR550 3/8". Does not cover intentional misuse or destruction.		

17.0 Contact Us

If you have any other questions, please feel free to email our team and we'll be able to further assist you with setting up your new target system.

Customer Service Email: info@tatargets.com

Phone: 1-833-746-4785, M-F during business hours

TA Targets, PO Box 212, Womelsdorf, PA 19567

18.0 Bill of Materials

This section organizes hardware into complete kits by function rather than by finished SKU. Gong count and array layout are customer-configurable (Sections 6.0–11.0); the underlying hardware kits that build any configuration are not. Internal build teams use these tables to pull the correct hardware; customers can use them to confirm every component arrived. Gong target plates are ordered and tracked separately by steel spec, not listed here — see Sections 4.0, 7.1, and 8.1.

18.1 A-Frame Hardware Kit

The A-Bracket is shared between both configurations. Leg construction differs.

18.1a Armored Configuration

Component	Part Number	Qty per System	Note
Armored A-Bracket	DLX-BRKT-AR500	2	One per side
Extended Splice Plate (legs)	ADAP-38-P-SPLICE-EXT	8	4 per leg × 2 legs, standard build
1/2"-13 x 1.5" Grade 8 Carriage Bolt	CB12-13X15G8	16	Leg-joint hardware. No flat washers are used in this assembly
1/2"-13 Mechanical Locking Nut	L12-13	16	Paired with leg-joint bolts

18.1b 2x4 Configuration

Component	Part Number	Qty per System	Note
Armored A-Bracket (same bracket as Armored config)	DLX-BRKT-AR500	2	One per side
2x4 Tube Base	BDB-2X4-TUBE	4	2 per bracket
3/8"-16 x 3" Grade 8 Carriage Bolt (tube-to-bracket)	CB38-16X3	8	2 per tube × 4 tubes. NOTE: 3/8", not 1/2". See Section 8.3 bolt orientation exception
3/8"-16 Nylon Locking Nut (tube-to-bracket)	LN38-16N	8	Paired with tube-base bolts
3/8"-16 x 1" Thumb Screw	TS38-16X1	4	Secures the 2x4 leg in its tube base, Section 8.4
3/8"-16 x 1.5" Thumb Screw	TS38-16X15	4	Secures the 2x4 leg in its tube base, Section 8.4

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Component	Part Number	Qty per System	Note	
2x4 Lumber (legs)	Customer supplied	4 boards	Cut to length by customer, Section 8.2. Legs must be adjusted/cut based on the terrain and slope to establish a stable system	

18.2 Crossbar Hardware Kit

18.2a Armored Configuration

Built to accommodate both 2-hole and 3-hole splice overlaps (Section 10.1), so the same kit works regardless of which overlap style your crossbar joints use.

Component	Part Number	Qty per System	Note
Armored Post Bottom (BOTTG4)	ADAP-38-P-BOTTG4	2	Forms both ends of the crossbar
Extended Splice Plate (crossbar)	ADAP-38-P-SPLICE-EXT	1	Standard 5–6 gong build. Longer custom crossbars need additional plates
1/2"-13 x 1.5" Grade 8 Carriage Bolt	CB12-13X15G8	4	For 2-hole overlap splice joints in the crossbar, Sections 10.1 and 10.2
1/2"-13 x 2.5" Grade 8 Carriage Bolt	CB12-13X25G8	8	4 of these lock the crossbar into the A-Bracket (retention, always required — Section 7.4, page 10). For most assemblies you'll only need one more, for a three-hole overlap splice joint (Sections 10.1, 10.2); the remaining 3 ship as spares for alternate splice configurations. Save unused bolts as spares.
1/2"-13 Mechanical Locking Nut	L12-13	12	Serves all 1.5" and 2.5" carriage bolts in this kit

18.2b 2x4 Configuration

Component	Part Number	Qty per System	Note
2x4 Lumber (crossbar)	Customer supplied	1 board (or spliced as needed)	Cut to length by customer, Section 8.2. Secured by tightening the tube-base thumb screws (already counted in Section 18.1b, not repeated here) — not a slip fit. Thumb screws must be tightened for a sturdy connection.

18.3 Strap & Gong-Hanging Hardware Kit

Sized for a standard 6-gong array. Arrays of 3–5 gongs will have some spare hardware left over — simpler to build and stock than tracking exact counts per array size. Splice plates and post bottoms are already covered in Section 18.2; only strap-hanging hardware is listed here.

18.3a Armored Configuration

Component	Part Number	Qty (6-gong array)	Note
Straps	Per customer specification / model number, Section 11.0	—	Strap type and count vary by customer selection and are not tracked as fixed BOM hardware
1/2"-13 x 1.5" Grade 8 Carriage Bolt	CB12-13X15G8	12	

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Component	Part Number	Qty (6-gong array)	Note	
1/2"-13 x 2.5" Grade 8 Carriage Bolt	CB12-13X25G8	4		
1/2"-13 Mechanical Locking Nut	L12-13	16	One per bolt above (12 + 4)	
1/2" Flat Washer	FW12	36	12 at plate-side bolts (2 washers per bolt × 6 plate connections, contacting the gong and strap — see diagrams, pages 19–21) + 12 at crossbar-side bolts (1 washer per bolt) + 12 extra. Customers will have 12 extra flat washers.	

18.3b 2x4 Configuration

Component	Part Number	Qty (6-gong array)	Note	
Straps	Per customer specification / model number, Section 11.0	—	Strap type and count vary by customer selection and are not tracked as fixed BOM hardware	
2x4 Cross Board	Customer supplied	—	Shared crossbar, not a per-connection item	
1/2"-13 x 1.5" Grade 8 Carriage Bolt	CB12-13X15G8	12	Gong-to-strap (plate-side) connection only	
1/2"-13 x 2.5" Grade 8 Carriage Bolt	CB12-13X25G8	12	Strap-to-2x4-board connection only — never used at the plate-side hole. Customers must drill holes through the 2x4 prior to bolting straps to the board. See page 21 diagram for component orientation	
1/2" Flat Washer	FW12	36	24 at plate-side bolts (2 per bolt × 12 plate-side bolts, contacting the gong and strap) + 12 at board-side bolts (1 per bolt × 12 board-side bolts)	
1/2"-13 Mechanical Locking Nut	L12-13	24	One per bolt (12 + 12)	

Part numbers above are TA-assigned where the component is TA-manufactured or TA-sourced (brackets, splice plates, post bottoms, tube bases, straps, standard fasteners). "Customer supplied" items (2x4 lumber) have no part number since they are not sold by TA.

19.0 Revision History

Version	Date	Changed By	Description
1.0 (DRAFT)	July 2026	Jared Daub	Initial draft. Added 2x4 configuration, Connections Reference, TOC, and hero imagery. Multiple sections marked PENDING await final part numbers, warranty terms, and strap-selection guidance.

TA TARGETS		EASY RACK / USER MANUAL		MAN-001
Version	Date	Changed By	Description	
1.0 (DRAFT)	July 2026	Jared Daub	Added Section 3.0 material ID photos (AR550 White, AR500 Mineral Bronze). Added target plate part numbers to Sections 7.1 and 8.1. Added Section 4.0 note clarifying standard vs. custom-build part numbers. Added Section 7.0 Armored hero photo. Added Section 7.2 crossbar overlap schematics and close-up photos (two-hole and three-hole). Updated Section 7.1 Standard Splice Plate row. Added Armored and 2x4 leg assembly diagrams and maximum leg length warnings (60" Armored, 48" 2x4). Added Section 7.4 retention bolt photos, Section 8.6 no-bolt explanation for 2x4 joint, and a new Section 5.0 warning against moving the assembled system. Fixed a table row-splitting defect affecting photo captions. Added side-by-side leg assembly comparison to Section 6.0. Added exploded diagrams and parts tables for all three splice/strap connections (single, double, 2x4) to Section 9.0. Added bolt orientation exception warning to Section 8.3 (2x4 tube base bolts face inward). Added full strap selection guidance to Section 11.0. Added Section 8.6 photo of the 2x4 kick-out step (hands clear of pinch point) and a photo-supported visual fit-verification check for the friction-fit crossbar joint. Added Section 7.5 Armored strap torque photo and Section 8.7 2x4 strap orientation photo. Corrected the Section 9.0 2x4 Strap and Target Connection exploded diagram: the strap and 2x4 board were swapped so the strap correctly sits in front of the board, matching Section 8.7. Added Section 8.0 2x4 hero photo. Added Section 10.2 single-splice vs. double-splice bolt-length comparison photos. Added Section 14.0 rubber strap wear/replacement guidance and filled in the matching Section 15.1 maintenance table row. Expanded the Section 8.6 crossbar fit-verification guidance with a wiggle-test step and a note on why the Armored configuration doesn't need it. Added Section 10.1 guidance on custom-array splice overlap (aesthetic, not safety-critical). Added the full Section 16.0 Easy Rack warranty terms table. Removed the Section 8.4 leg-clamp PENDING note; the Section 8.6 crossbar verification guidance covers it. Restored Section 8.4 with real thumb screw torque and orientation guidance, plus a photo. Removed the Section 7.4 Armored kick-out photo placeholder (no photo available; considered adequately covered by existing text). Added a note to Section 8.2 that the 2x4 crossbar can be re-cut to add or remove gongs after the initial build. Removed the Section 7.6 target plate mounting stack placeholder; cross-referenced the existing Section 9.0 Single Armored Splice Connection diagram instead, and corrected the Section 8.8 cross-reference to match.	

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1.0 (DRAFT)	July 2026	Jared Daub	Incorporated first-round team proofing feedback from Brenton: swapped the AR500/AR550 photo order in Section 3.0 (bronze left, white right), moved the Section 8.0 heading to its own page, added a dimensioned drill diagram to Section 8.5 for the standard 6-gong layout, clarified the Section 8.3 bolt orientation callout with the specific bolts and the fragmentation/thread rationale, added bullet-flight-direction arrows to the three Section 9.0 connection diagrams, revised the Armored System warranty language to separate hardware and powder coat from structural coverage, and flagged the AR550 1/2" Gong warranty term as pending a team decision.	

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1.0 (DRAFT)	July 2026	Jared Daub	Corrected Section 8.1: 2x4 legs quantity from 2 to 4 boards, matching the 4 tube bases per system. Updated safe shooting distance tables per team review: Section 12.1 (3/8" AR500) Magnum Rifle to 300 Yards and Shotgun Slugs to Not Approved; Section 12.2 (3/8" AR550) Larger Bore Rifle to 100 Yards, Magnum Rifle to 200 Yards, Shotgun Slugs to 150 Yards, and 50BMG and Wildcat to 500+ Yards; Section 12.3 (1/2" AR550) Light Rifle to 50 Yards, Magnum Rifle to 200 Yards, Shotgun Slugs to 150 Yards, and 50BMG and Wildcat to 500+ Yards.	

Version	Date	Changed By	Description	
1.0 (DRAFT)	July 2026	Jared Daub	Corrected the 1/2" x 3" carriage bolt references to 1/2" x 2.5" throughout the manual (Sections 7.4, 8.6, 8.7, 9.0, 10.1, 10.2, the Section 9.0 exploded diagrams, and Section 18.0); confirmed the 3/8" tube-base carriage bolt is 3" and labeled it accordingly. Added TA part numbers throughout Section 9.0, Section 10.2, and Section 18.0 for all standard fasteners (carriage bolts, flat washers, mechanical and nylon locking nuts, thumb screws). Restructured Section 18.0 Bill of Materials into A-Frame, Crossbar, and Strap & Gong-Hanging hardware kits (Armored and 2x4 variants), replacing the single-SKU placeholder table; confirmed all hardware quantities with Jared. Resolved the AR550 1/2" Gong warranty: 5-year warranty, one replacement for failure under proper use, same ammunition requirements as AR500 and AR550 3/8". Finalized the Table of Contents page numbers now that no further content changes are expected and removed the approximate-pagination note.	

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1.1	July 2026	Jared Daub	Incorporated final printed team-review feedback: added the ANSI Z87.1 eye protection standard to Section 2.0 and clarified sunglasses are not an adequate substitute; added the 1/2" AR550 8" round 2-hole gong option (GONG-AR550-12-8INCHROUND-2H) to the Section 7.1 and 8.1 Component Overview tables, same standard quantity as the 3/8" gongs; corrected Table 18.1a to 16 carriage bolts and 16 locking nuts; corrected Table 18.2a to 12 locking nuts. Reviewed and approved by three TA Targets team members prior to release. Released for distribution: removed DRAFT status.	