



RANGE MAINTENANCE SCHEDULE

REVISION 8.0

The maintenance schedule (high or standard) that a range should follow is ascertained by the number of days it takes to fill the lead collection containers (drums or canisters)* as outlined in the table below.

Ranges with a BCS Auto 55 (screw conveyor system): Average time to change a 55 gallon lead collection drum (change when 2/3 full):	1-10 days	11+ days
Ranges with a BCS Basic 3 ("bucket" system): Average time to change a 3.5 gallon lead collection canister (change when filled to 2-gallon mark):	1-20 days	21+ days
Ranges with a BCS Deluxe 20 (20-gallon drum): Average time to change ALL 20-gallon lead collection drums (change when 80% full or when lead is at a depth of 16 inches):	1-90 days	90+ days
Ranges with a Rubber Berm Trap: Average time to reach 80,000 rounds per lane (60,000 rounds per lane for 6-ft Rubber Berm Traps):	1-120 days	121+ days
Follow maintenance schedule:	HIGH	STANDARD

Note: Not every maintenance item will apply to your range. Adjust maintenance schedule if range usage varies. New ranges should follow the high use maintenance schedule until usage is determined. **For supplementary information about how to perform maintenance, see the product's operation and maintenance manual.**



When in contact with lead fragments and dust, it is recommended that personal protective equipment (PPE) designed for lead protection is worn (e.g. Tyvek suits; full face respirators; eye protection; and foot/hand/head coverings).

TARGET RETRIEVERS

	HIGH	STANDARD
Check track and bus bars for damage, missing hardware, and holes. Replace as necessary.	Daily	Daily
Check trolley, trolley wheels, and track end pulley for damage. Replace as necessary.	Daily	Daily
Send trolley up and down track several times before range use.	Daily	Daily
Check cable for damage, nicks, or frayed/missing vinyl (if applicable). Replace as necessary.	Daily	Weekly
Clean track and drive unit. Vacuum/remove unburnt powder and debris (rubber, bullet casings, shotgun wad, wood, etc.) from track rail.**	Weekly	Every 2 weeks
Check track hanger brackets for damage and that they are securely fastened to the track. Replace brackets/tighten hardware as necessary.	Weekly	Monthly
Check dead-stops/rubber bumpers at both ends of track for damage. Replace as necessary.	Weekly	Monthly
Inspect and clean copper bus-bars with non-metallic Scotchbrite or similar (Mancom Touch Plus retriever only) as necessary.	Quarterly	Quarterly
Tension the cable.	2 months after install/replacement. Annually thereafter.	

SHOOTING STALLS

	HIGH	STANDARD
Check stall walls for bullet holes. For steel panels, inspect with a flashlight in a darkened room. If holes are discovered, replace stall panel before resuming use of adjacent lanes.*	Daily	Daily
Check for loose or missing hardware and tighten/replace as necessary.	Weekly	Weekly
Remove brass or other debris from top of stall walls.	Weekly	Monthly

BULLET TRAP IMPACT PLATES

	HIGH	STANDARD
Check deflector edges between chambers for deformation or damage. Sharpen or replace as necessary to avoid developing a blunt edge (TCT 4D only).	Daily	Weekly
Ensure wall deflectors are fastened properly to the wall. Inspect for looseness and gaps between the deflector and wall.*	Daily	Weekly
Check for gaps in joint strips on side plates.*	Daily	Weekly
Vacuum loose lead fragments and jacket material on the bullet trap bottom ramp and trough in front of the ramp (from the shooter side).**  Never deposit any debris (cables, cardboard, etc.) through the mouth of the trap into the deceleration chamber. This may clog the lead evacuation ports and/or damage the Screw Conveyor System.	Weekly	Every 2 weeks
Inspect the trap impact plates, paying close attention to the top and bottom plate nearest to the chambers for bowing or damage. If bowing or damage is noted, contact Action Target Customer Service at +1 (877) 852-2418 immediately to schedule a technician to replace the plates.	Weekly	Every 2 weeks

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DECELERATION CHAMBER

	HIGH	STANDARD
Check mouth plates (entire width) for ½" minimum clearance. * A ½" steel or PVC pipe is ideal for performing this check.	Weekly	Monthly
With a flashlight, visually inspect chamber (inside mouth from the shooter's side) to ensure there are no visible obstructions or lead clogs at the base of the chamber.* If you encounter a clogged chamber, try to determine the cause of the blockage. If a large volume of shotgun rounds are shot at the trap, there is a possibility that the plastic wads have created the clog. To clean a clogged chamber, reach through the canister port with a HEPA vacuum hose and draw out all the lead material into the vacuum. If you are unable to remove the lead clog, stop use immediately and report to an Action Target customer service representative at +1 (877) 852-2418.	Weekly	Monthly
Inspect the tightness of shell cams. If the cams have loosened (as indicated by the cam not being aligned with the white location mark on the rib or shell), tighten cams to a minimum of 600 ft-lbs. using an approved cam tool and 1" torque wrench. Cam tool can be purchased through ATI customer service (+1 877 852-2418).	Weekly	Monthly
Inspect back of deceleration chambers. Damage/bulging may indicate use of non-approved ammunition or excessive wear*. The first likely place of wear on the Vortex is at the mouth of the deceleration chamber at the rear shell. After excessive wear, this portion of the chamber may eventually breach (although this is rare) and allow bullets to escape.	Monthly	Monthly
A thorough inspection and cleaning of chamber performed by an approved ATI technician is recommended. Schedule an appointment through ATI Customer Service (+1 877 852-2418).	Annually	Every 2 years



BCS BASIC 3 (3-GALLON CANISTERS)

	HIGH	STANDARD
Check canister lead levels. Canisters will not fill at the same rate. Empty canisters that are 60% full (filled to the 2-gallon mark) only. See the operation and maintenance manual for lead removal instructions.	Daily	Daily
Check the top of each collection canister to make sure it is firmly seated against the gasket and cannot leak lead dust. If necessary, tighten the clamping nuts on the appropriate side of the canister (there are 4 clamping nuts) to pull the canister up firmly, but not too tight, against the gasket. Make a note of the level of lead in the canisters. Compare this level with the previous week's level. If there is little or no lead accumulating in the canisters, the chamber may be clogged. Inspect the chamber immediately before the problem escalates. This is necessary even if you have a Dust Collection Unit.	Weekly	Weekly
Inspect evacuation ports for blockages. Clear debris as necessary.	Every time a canister is removed from the trap	



BCS DELUXE 20 (20-GALLON DRUMS)

	HIGH	STANDARD
Shine a flashlight into the sight window to check drum lead levels. Drums may not fill at the same rate. Only replace drums that are 80% full (filled to 16" depth). See the operation and maintenance manual for drum replacement instructions.	Daily	Every other day
Check the lid clamp of each drum to make sure it is firmly sealed and cannot leak lead dust. Make note of the lead level in the drums. Compare this level with the level from the previous week. If there is little-to-no lead accumulating in the drums, the chamber may be clogged and should be inspected immediately before the problem escalates. This is necessary even if you have a Dust Collection Unit.	Weekly	Weekly
Inspect evacuation ports for blockages. Clear debris as necessary.	Every time a drum is removed from the trap	



BCS AUTO 55 (SCREW CONVEYOR SYSTEM)

	HIGH	STANDARD
Check 55-gallon lead collection drum and empty when it is 2/3 full.	Daily	Daily
Add 1/2 cup mineral oil to lower section of uptake screw conveyor (detailed instructions and mineral oil specs in operation and maintenance manual).	Every 2 days	Weekly
Inspect the uptake screw conveyor trough and transition section (where the horizontal and uptake screw conveyor meet). If there is a blockage, shut down power and follow instructions from an Action Target customer service representative* (detailed instructions and mineral oil specs are found in the operation and maintenance manual).	Weekly	Every 2 weeks
Shut down and lockout power. Vacuum** any loose lead dust in uptake trough, focusing primarily on the "T" section where fine lead particulates accumulate. Note: Rotate the auger manually for easier access to this area. Contact an Action Target customer service representative for directions or if there is any hard lead buildup in the uptake trough.*	Weekly	Monthly
Check oil level in gearbox and for leaks. Replace oil as necessary.	Monthly	Monthly

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Check timer program is working properly according to range length and maintenance schedule (see table below). Note: If timer differs from timer displayed in the O&M manual, contact Action Target Customer Service.					Every 6 months	Every 6 months
	HIGH VOLUME RANGE		STANDARD VOLUME RANGE			
RANGE LENGTH	> 80 ft.	≤ 80 ft.	> 80 ft.	≤ 80 ft.		
RUN DURATION	10 min.	5 min.	10 min.	5 min.		
RUN FREQUENCY	7x/day	7x/day	4x/day	4x/day		
Verify proper overload settings (see operation and maintenance manual for settings).					Annually	Annually
Grease bearing zerks at base of the uptake auger.					Annually	Annually
Tighten the adjusting bolts of the gland seal assembly.					Annually	Annually

! Note the specific safety procedures in the screw conveyor operations and maintenance manual. Make sure the trough cover is securely reattached before restoring power.

 DUST COLLECTION UNIT (DCU)					HIGH	STANDARD
Check canister lead levels (shine a flashlight on the canister to improve visibility). Canisters will not fill at the same rate. Only empty canisters once they reach 50% full.					Daily	Daily
When DCU is operating, check photohelic run needle is within range (low point: 0.5; high point: 3.5).					Weekly	Weekly
Check air pressure in compressor is 90 - 125 psi. Drain compressor tank condensation.					Weekly	Weekly
Check oil level in the air compressor. Replace oil as necessary and check for/repair leaks.					Weekly	Monthly
Check purge cyclor is functioning (see operation and maintenance manual for procedure).					Monthly	Monthly
Test automatic breach detection circuitry if applicable (ear protection is essential).					Every 6 months	Every 6 months

 RUBBER BERM TRAP					HIGH	STANDARD
Remove lead ingots/accumulation as well as foreign media and materials (shotgun wads, wood splinters, cardboard, etc.) from rubber.					Daily	Daily
Use a yard stick/ruler to check that depth of rubber across the berm is a uniform thickness of two feet minimum.* Use a metal rake to draw rubber over thinner areas.					Daily	Daily
Ensure trap fins have not become damaged to the point they are unable to prevent the rubber from sliding off the berm.*					Daily	Daily
Check overhead hopper and refill if needed. Small bags or buckets and a shovel works well for this purpose. A ladder will be necessary.					Daily	Daily
Ensure 50% of fire retardant coating is visible on the surface of the rubber. If less than 50% is visible, contact an Action Target customer service representative to reapply fire retardant or follow re-application instructions in the operation and maintenance manual.					Quarterly	Quarterly
Contact an Action Target customer service representative to remove bullets from trap.					Approximately every 60k - 80k rounds per lane	

PNEUMATIC TARGET SYSTEMS					HIGH	STANDARD
Check target lines for air leaks. Repair as necessary.					Daily	Daily
Check compressor oil level and refill if necessary.					Daily	Daily
Drain compressor tank condensation.					Daily	Daily
Actuate targets.					Weekly	Weekly
Check compressor drive belts and replace after noticeable cracks or fraying.					Monthly	Monthly
Check target control module (TCM) cooling fans are operating correctly. Vacuum TCM filters.					Monthly	Monthly
Change synthetic oil in the compressor and replace air filter using OEM parts to protect warranty per manual instructions.					Annually	Annually
Service air dryers per operation and maintenance manual instructions.					Annually	Annually

! Never use lubricants or penetrants (WD-40) on target valves or actuators.

! If desiccant or refrigerated air dryers are used, consult the individual product's operation and maintenance manual.

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RUNNING TARGET SYSTEMS

	HIGH	STANDARD
Inspect track for damage and remove any debris.	Daily	Daily
Check cable tension and check cable for fraying.	Daily for the first month. Weekly thereafter.	Daily for the first month. Weekly thereafter.



GENERAL RANGE MAINTENANCE

	HIGH	STANDARD
Visually inspect wall baffles and ceiling tiles for damage (damaged cables, bolts, deflectors, etc.)*	Daily	Daily
Clean stall walls and tables with a lead-removing, residue-free cleaner (must be safe for ABS plastics, polycarbonate and glass. D-Lead cleaners are recommended).	Weekly	Monthly
Vacuum powder and debris from shooting stall walls and/or tables.**	Weekly	Monthly
Vacuum lead dust behind the trap: below bullet trap bottom ramp; above bullet trap upper ramp plates; out of, around, and behind the deceleration chamber.** Begin vacuuming as you enter the area. If you enter through a door, vacuum the door off first. Vacuum the floor and any flat areas where dust may accumulate. Do not move through an area you have not yet cleaned.  Never use a broom, a shovel, compressed air or any other means to move dry lead dust. This will disturb the lead into the air, which is hazardous to health.  Do not use a vacuum cleaner with a beater brush. The vacuum should rely solely on suction to extract dust.  If your system has no container system, you may be able to vacuum all lead fragments right up off the floor. However, if the volume of lead is greater than the capacity of your HEPA vacuum, you should consider the containment canister option or a bigger HEPA vacuum. If you need assistance with obtaining equipment such as a HEPA vacuum cleaner, contact Action Target.	Every 2 months	Every 4 months

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