

Trouble Shooting,

Target Flight Adjustment and

Maintenance Manual

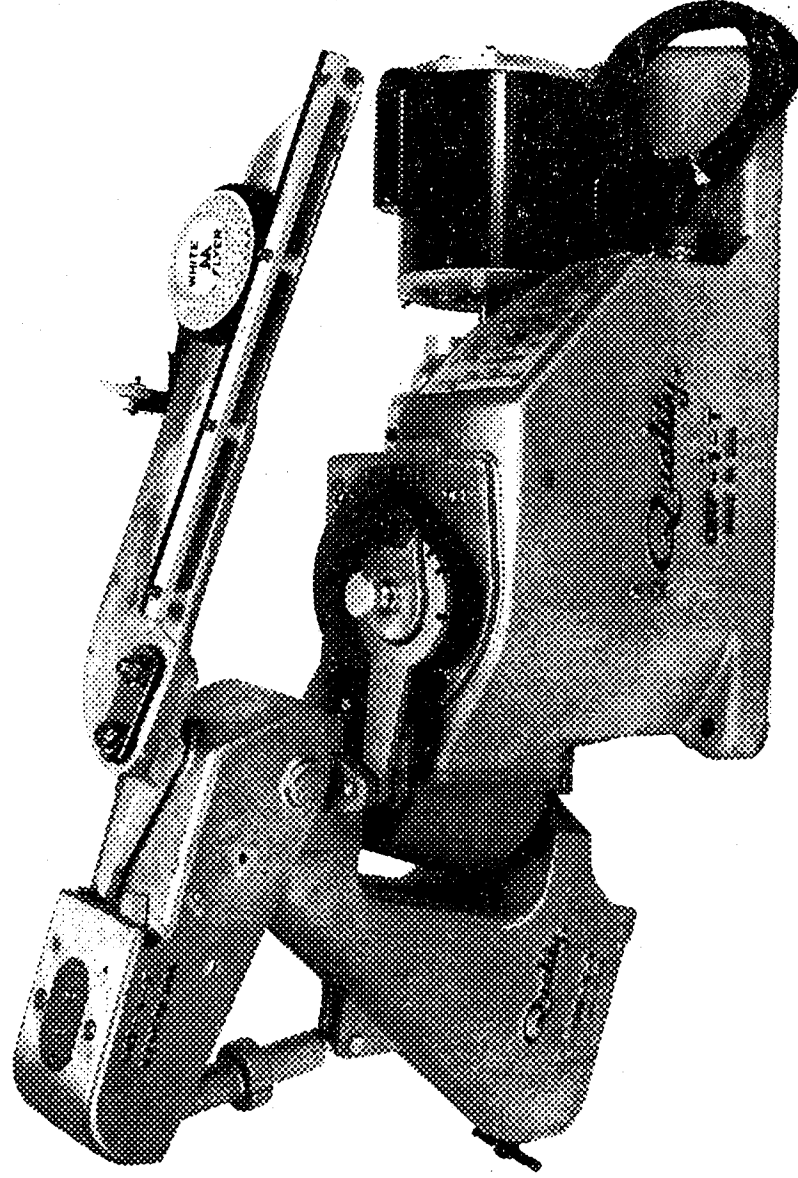


Alan Kuntz

Quality Replacement Parts, Inc.

"For the Clay Target Industry"

9099 Bank Street
Suite B
Valley View, OH 44125
800-742-0425 Fax 216-674-0202
www.qualityreplacementparts.com
sales@qualityreplacementparts.com



QUALITY MODEL 92 and V1524 electric traps

GENERAL

- CAUTION A: Always move to a safe loading position at rear of base on left side (the side nearest #: Station) before pushing master switch (X116W) to on position.
- CAUTION B: It should be made a strict rule that the master switch (X116W) shall never be operated when there is more than one person in trap house.
- CAUTION C: The operator should always pull master switch (X116W) to off position before moving from left rear of trap for any reason. In so doing, make sure to stand clear as this automatically throws carrier to uncocked position. Always leave trap in this position when leaving trap house.
- CAUTION D: In case of power failure while trap is in cocked position, release carrier manually by pulling toward you, or backward from regular cocking cycle. Turn master switch (X116W) to off position before leaving trap house.
- CAUTION E: POWER SUPPLY - Mount the V126W outlet box in trap house and run an approved underground cable from a 115 volt 60 cycle single phase A.C. power supply to this box. The cable must be no smaller than No. 12 wire, and No. 8 or larger will usually be required (depending upon distance from and voltage at power transformer) to supply at least 105 volts under a load of 15 amperes at the box to insure starting trap motor in cold weather. Ask your local power company to calculate the size needed.
- CAUTION F: CONNECTIONS - Be sure to connect the green wire from the power cord (X117A) to ground as shown on plate E. See that master switch (X116W) is pulled down to safe position. Plug the power cord (X117A) into the lower trap receptacle and lock in place with ring nut. Also plug in the release assembly (X125A) and lock in place. Turn on power at its source, preferably at a fused disconnect switch in clubhouse.

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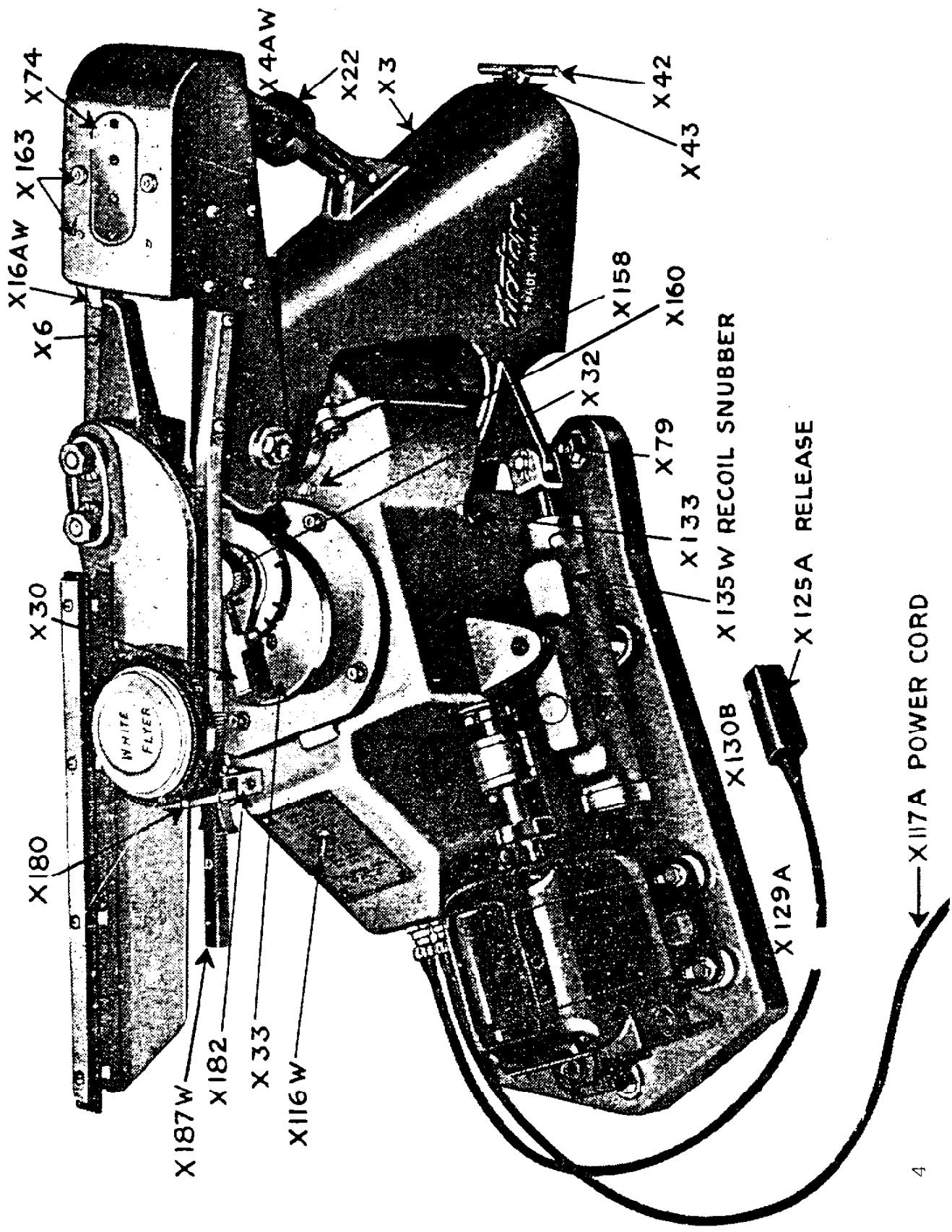
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SECTION I - TROUBLE SHOOTING

PROBLEM

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| 2. | Motor runs but trap will not cock. | 7 |
| 3. | Trap will not release or delay in release of target. | 8 |
| 4. | Target flips high into air (wild target). | 9 |
| 5. | Motor runs, trap cocks, but will not change angles. | 10 |
| 6. | Trap will not stay cocked. | 10 |



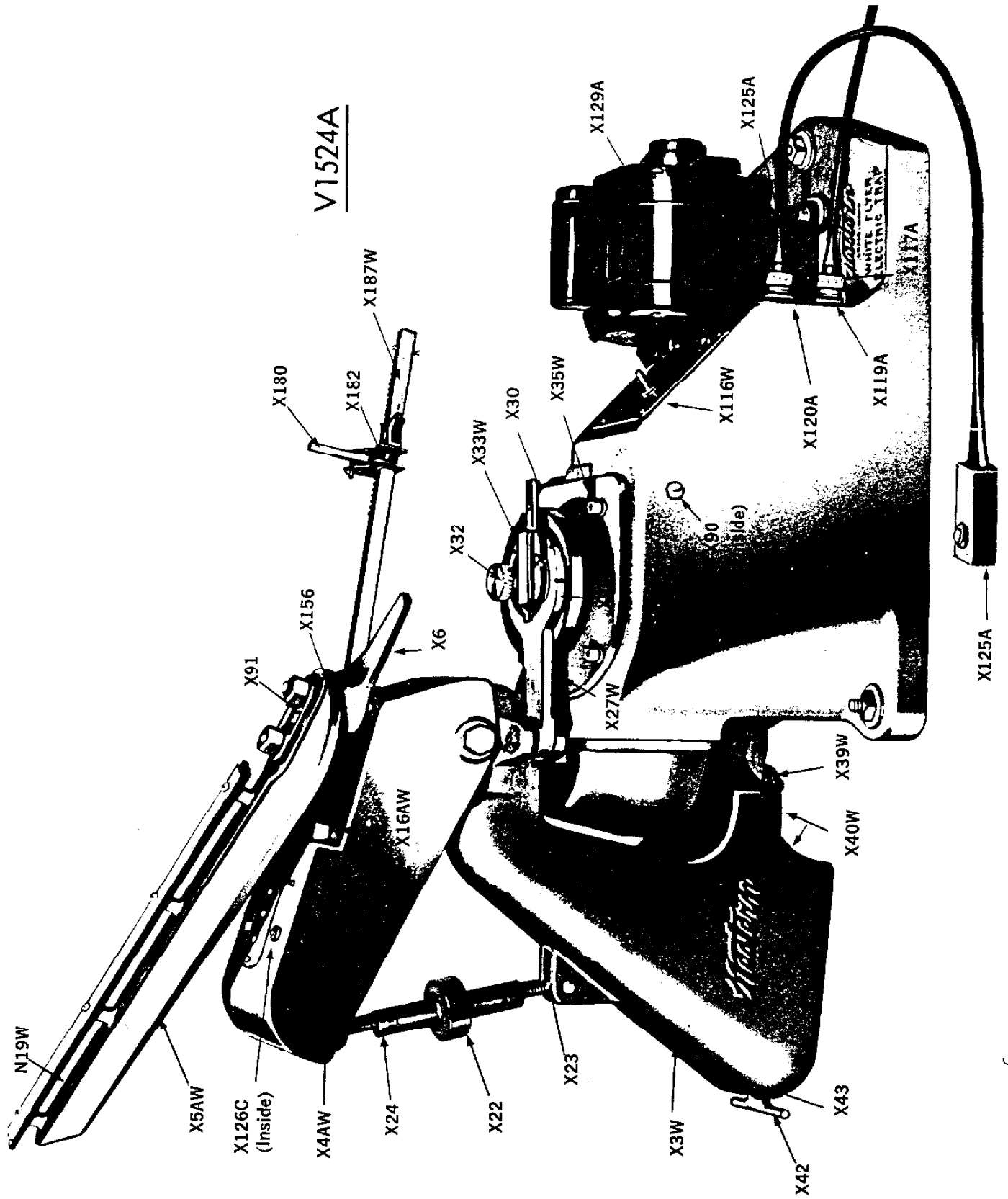
SECTION I - TROUBLE SHOOTING

PROBLEM 1. Motor will not run.

CORRECTION:

- A. Check power supply to trap.
- B. Check master switch (X116W). (Tap lightly on, off and on toggle -- points may be stuck.) If bad switch, replace.
- C. Press in red overload button on motor, overload may have shut motor off due to low voltage or trap being jammed.
- D. Revolve motor coupling one or two turns to be sure motor revolves freely.
- E. Check capacitor on motor. (The capacitor is contained in dome shaped cover on top of motor.)
- F. Check motor, may be burned out.

V1524A



SECTION I - TROUBLE SHOOTING

PROBLEM 2. Motor runs but trap will not cock.

CORRECTION: Disconnect power.

- A. Check (X126C) control switch, with carrier in fired position by moving sear (X16AW) by hand. Switch is okay if it clicks when edge of sear bar passes a point between the two marks on frame.
- B. Check for failure or slippage of motor coupling (X130B). Tighten or replace as indicated.
- C. Check for loose screw in X73 control pawl operating finger.
- D. Check for broken X90 roll pin in X64W control pawl. Do this by removing X35W cover with X33 W angle changing disc and remove gears from inside trap. Turn trap on side, take X64W control pawl in right hand and shaft in left hand. Check for play of X64W pawl on shaft.

SECTION I - TROUBLE SHOOTING

PROBLEM 3. Trap will not release or delay in release of target.

CORRECTION:

- A. Check for low voltage, this must be checked when everything else is running, including other traps, also electrical equipment in clubhouse if off same box. Needs 115 Volts A. C. Drop in voltage must not be below 105 Volts.
- B. Carrier Arm X6 completely dry where it locks on X15AW Sear. These should be lubricated before each day's shooting.
- C. Check for worn groove in X11A Trigger and replace if worn.
- D. Check for frozen roller in X16AW Sear Assy. Lubricate to get through shoot, then replace.
- E. Check for tight plunger in X127 solenoid. This can be checked with fingers, plunger must move freely.
- F. Check for electrical short in release button or cord. This can be checked by using another release from a field that has been working properly.
- G. Check for broken mainspring (X40W) by reaching under housing at front of trap or by turning mainspring adjusting screw (X42). (If screw turns loosely, spring is broken.) If spring is broken turn master switch off and release carrier manually by pulling toward you, or backward from regular cocking cycle. Install new spring.

SECTION I - TROUBLE SHOOTING

PROBLEM 4. Target flips high into air (wild target).

CORRECTION:

- A. Check recoil snubber (X135W) by removing target spread adjusting screw (X32), then take hold of lower frame assy. (X3W) front of trap and move back and forth. Should have pressure both ways. If not, replace and send damaged recoil snubber in for repair.
- B. Check for worn or damaged carrier rail (N19W). A worn carrier rail (N19W) may be reversed for further use. If both ends worn, replace with new carrier rail.
- C. Check target stop finger (X180). If finger has groove worn in it, replace.
- D. Check for bent X5AW Carrier either by eye or with straight edge. Carrier must be straight. If not, remove from trap, place on flat surface, and using a wood block and hammer, straighten.
- E. Check for excessive movement between X5AW Carrier and X6 Carrier arm. Replace X91 Carrier Grommets, if necessary.

SECTION I - TROUBLE SHOOTING

PROBLEM 5. Motor runs, trap cocks, but will not change angles.

CORRECTION:

- A. Check for broken (X90) roll pin. (Refer to Page 7 Item "D")
- B. Check for frozen angle changing disc (X33W).
- C. Check for frozen control solenoid plunger (X128B).
- D. Check control switch (X126C). (Refer to Page 7 Item "A")

PROBLEM 6. Trap will not stay cocked.

CORRECTION:

- A. Disconnect release cord to check for short. Cord may be checked by trying on another field.
- B. Check release solenoid (X127). Plunger should move freely. This can be checked with fingers.
- C. Check X11A Trigger. Make certain end is not worn and is free in casting.
- D. Check X21 Trigger Spring. If broken, replace.

SECTION II - OILING

Always see that master switch X116W is pushed down to the safe position before oiling trap. (See cut on Page 4)

1. The trap is shipped with a supply of oil in the gear case. However, oil filler and level gage plug X133 on right side of base should be removed for inspection at beginning of each season. Add No. 20 SAE Motor Oil as necessary, to bring level back up to this opening. (Capacity is one pint)
2. To avoid spillage in shipment, the universal joint housing is not filled to its capacity of 3-1/2 ounces. Before operating, squirt No. 20 SAE oil into housing through oil cup X158 in trunnion or right side of trap frame. Add oil occasionally as needed to maintain this level.
3. At start of each shoot, put a few drops of oil on top of mainspring swivel X43, where it bears against the front end of frame X3.
4. At start of each shoot put a few drops of oil on contacting surfaces of carrier arm X6 and sear X16A.
5. At start of each shoot put a few drops of oil in each of the four ball oilers X163 in top of frame X4AW. Also squirt about a teaspoon of oil into the X160 oil cup when carrier is in fired position.
6. At the beginning of the second season, and each season thereafter, add 30 to 70 drops of No. 20 SAE motor oil to oil cups on motor. This is sufficient for 2000-3000 hours of operation.

SECTION III - TARGET FLIGHT AND ADJUSTMENT OF TRAP FOR SINGLE TARGETS

1. Target flight and angles (singles).
 - A. Targets should be thrown not less than 48 yards nor more than 52 yards (measured on level ground and in still air).
 - B. Targets should be thrown between 8 and 12 feet high (recommended height 9 feet) at a point 30 feet in front of trap. The height at a point 30 feet from trap is height above an imaginary horizontal line drawn through the #3 firing point and the trap.
 - C. In singles shooting, the trap should be adjusted so that the right angle will not be less than a straight way from station #1 and the left angle will not be less than a straight way from station #5.
2. Target flight adjustment for singles.
 - A. Before making any adjustments be sure master switch (X116W) is pushed down to safe position.
 - B. Place spread adjusting screw (X32) in the central hole "D" of angle changing disc (X33) to lock frame in straight-away position.
 - C. Place windage adjustment latch (X30) in notch so it is pointed directly to rear of trap.
 - D. See that target stop carrier (X182) is located straddling the "5" mark on the target stop guide bar (X187W).
 - E. Have suitable height marker (a 9' piece of lumber 2 x 3" or similar) held in upright position at a point 30 feet in front of trap and in line with center of trap house and station #3.
 - F. When in safe position at left rear of trap, turn on master switch (X116W) to cock trap.

SECTION III - TARGET FLIGHT AND ADJUSTMENT OF TRAP FOR SINGLE TARGETS (cont'd)

- G. Place target on the carrier in contact with rubber rail (N19W) and with the target stop finger (X180).
- H. Release trap by quickly pushing and releasing the button on pendant release switch (X125A) or by pushing down on master switch (X116W), and note flight of target. Adjust direction of target flight (so it will fly over the height marker) by lifting windage adjustment latch (X30), move it right or left as indicated and relatch.
- I. Obtain correct elevation of target (recommended height 9 feet) by first pushing master switch (X116W) down to safe position while keeping clear of carrier. Turn elevation adjusting screw (X22) in direction marked to raise or lower height of target.
- J. To obtain correct flight distance (recommended distance 50 yards) turn mainspring adjusting screw (X42) a half turn at a time clockwise to increase distance, or counter clockwise to decrease distance. Be sure master switch (X116W) is down to safe position before making adjustment.
- K. Note levelness of target flight. If targets lean or curve to the left, correct by moving target stop carrier (X182) toward outer end of guide bar (X187W). If target leans or curves to the right, move the stop carrier slightly toward inner end of guide bar. Recheck direction of flight and correct if necessary as described under "H".
- L. Now that target path is adjusted for direction, height, distance and levelness, push master switch (X116W) down to the safe position. Remove spread adjusting screw (X32) from central hole "D" in angle changing disc (X33) and relocate in the No. "3" hole which will cause extreme right and left targets to be thrown in line with shooting stations 1 and 5 under normal light wind conditions. Be sure to tighten spread adjusting screw (X32) securely. If there is a heavy head wind tending to widen the field, place screw (X32) in the No. "2" or No. "1" hole. A strong tail wind may require locating screw (X32) in the No. "4" or No. "5" hole.

SECTION III - TARGET FLIGHT AND ADJUSTMENT OF TRAP FOR SINGLE TARGETS (cont'd)

- M. Do not attempt to adjust right and left extreme angles by moving target stop carrier (X182) as such action may upset the distribution of targets. Make adjustments only in sequence described above with spread adjusting screw (X32) in central hole "D" to hold trap frame in straight away position.

SECTION IV - TARGET FLIGHT AND ADJUSTMENT OF TRAP FOR DOUBLE TARGETS

1. Target flights and angles (doubles).
 - A. Targets should be thrown not less than 48 yards, nor more than 52 yards, on level ground in still air.
 - B. Targets shall be thrown between 8 and 12 feet high (recommended height 9 feet) at a point 30 feet from trap. The height at a point 30 feet from trap is height above an imaginary horizontal line drawn through the firing points and the trap.
 - C. In doubles shooting, the recommended method of throwing targets shall be such that the right hand target will be an approximate straightway from firing point #1 and the left hand target shall be an approximate straightway from firing point #5.
2. Target flight adjustment for doubles.
 - A. Before making any adjustments be sure master switch (X116W) is pushed down to safe position.
 - B. Place spread adjusting screw (X32) in central hole "D" of angle changing disc (X33) to lock frame for doubles.
 - C. Turn elevation adjusting screw (X22), 6 half turns as marked to raise elevation.
 - D. Tighten mainspring by turning mainspring adjusting screw (X42) clockwise about 20 half turns or "clicks" from the setting normally used for "singles."
 - E. Move target stop carrier (X182) to straddle "D" mark on guide bar (X187W).
 - F. When in safe position at left rear of trap, turn on master switch (X116W) to cock trap.

WINCHESTER-WESTERN DIVISION

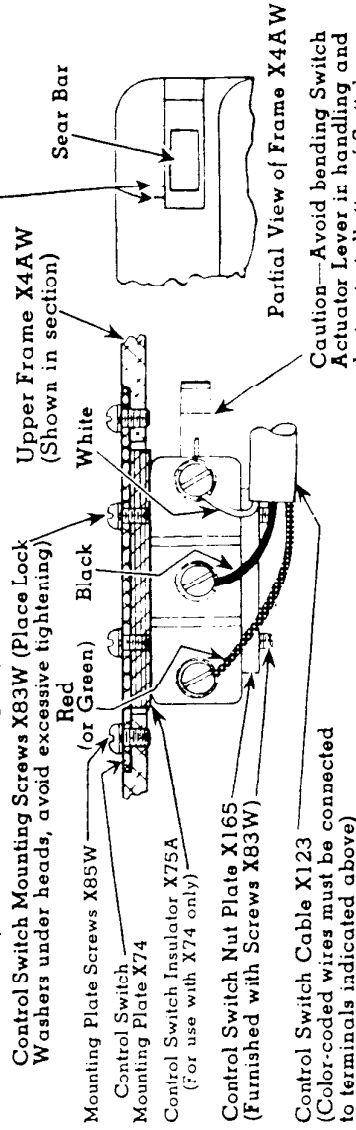
VI524A WESTERN WHITE FLYER ELECTRIC TRAP

SECTION IV - TARGET FLIGHT AND ADJUSTMENT OF TRAP FOR DOUBLE TARGETS (cont'd)

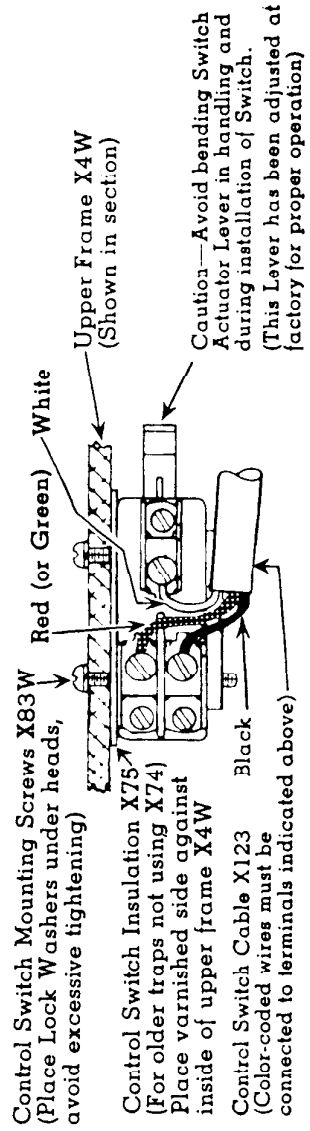
- G. Place one target against carrier rail (N19W) and against target stop finger (X180). Place second target in contact with the first target and against the carrier rail.
 - H. Release trap by pushing the button on release switch (X125A) or pushing down on master switch (X116W), and note relative heights of targets. If the right target is lower, move target stop carrier (X182) slightly toward "S" mark on guide bar (X187W). If the left target is lower, move the stop slightly in opposite direction.
 - I. With both targets at same height, move windage adjusting latch (X30) a notch or two, right or left, as necessary to center the field.
 - J. Make final adjustments for distance that may be necessary by tightening or loosening mainspring adjusting screw (X42) after first pushing master switch (X116W) to safe position.
 - K. Check height of targets and make adjustments that may be necessary with elevation adjusting screw (X22).
3. How to return trap setting from doubles to singles.
- A. Before making any adjustments be sure master switch (X116W) is pushed down to safe position.
 - B. Leave spread adjusting screw (X32) in central hole "D" until all adjustments are made.
 - C. Slack off mainspring by turning mainspring adjusting screw (X42) 20 half turns counter clockwise.
 - D. Turn elevation adjusting screw (X22), 6 half turns, as marked to lower elevation.
 - E. Place adjusting latch (X30) in center notch and move target stop carrier (X182) to straddle the "S" mark on the target stop guide bar (X187W).
 - F. Proceed as indicated under target flight adjustment for singles, page 12.

Testing, Wiring and Installing Control Switches

Note: Check Control Switch, with Carrier in fired position, by moving Sear Bar by hand. Switch is O.K. if it clicks when edge of Sear Bar passes a point between these two marks.

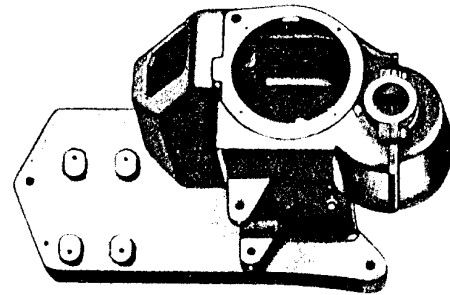


Method of Wiring and Installing New Control Switch X126C (Unimax Red Top) (For Old Style X126A Black Micro Switch, reverse Red and White wires)

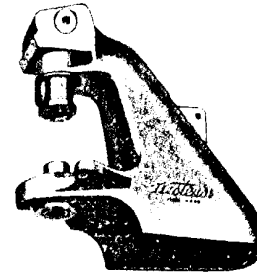


Old Style X126B Unimax Switch With Side Terminals

Trap Parts



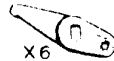
X1W



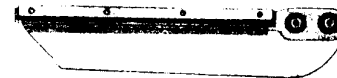
X3W



X4AW



X6



X5AW



N19W



X11A



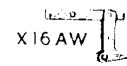
X12W



X13W



X21



X16AW



X24



X22



X23



X25



X26



X27W



X28W



X29W



X30



X31



X32



X39W



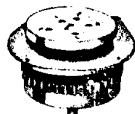
X40W



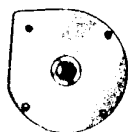
X42



X43



X33W



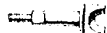
X35W



X36W



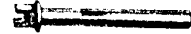
X37



X45



X50



X52



X53L



X53RW



X54W



X55



X56W

SECTION V - PARTS

<u>Cat. No.</u>	<u>Cat. No.</u>	<u>Cat. No.</u>
* X1W	Base Assembly	X25
* X3W	Lower Frame Assembly	X26
* X4AW	Upper Frame Assembly	X27W
X5AW	Carrier Assembly	X28W
X6	Carrier Arm	X29W
X11A	Trigger	X30
X12W	Trigger Pivot Pin Assembly	X31
X13W	Sear Bar Pin Assembly	X32
X16AW	Sear Assembly	X33W
N19W	Carrier Rail Assembly	X35W
X21	Trigger Spring	X36W
X22	Elevation Adjusting Nut	V36W
X23	Elevation Adjusting Screw, Lower (R.H. thread)	
X24	Elevation Adjusting Screw, Upper (L.H. thread)	
X37	Washer for Crank Stud	
X39W	Mainspring Crank Assembly	
**X40W	Mainspring Assembly	
X42	Mainspring Adjusting Screw	
X43	Mainspring Swivel	
X45	Upper Main Shaft	
X50	Universal Joint Ball	
X52	Lower Main Shaft	
X53L	Elevation Pivot Stud, L. H. (without oil hole)	
X53RW	Elevation Pivot Stud, R. H. (with oil hole cover)	
X54W	Cocking Ratchet Arm Assembly	
X55	Ratchet Arm Key	
X56W	Ratchet Arm Pin Assembly	

* The replacement of these parts in the field is not recommended because of complicated fitting and rewiring involved. Write the factory for prices and instructions.

** A used X40W mainspring assembly may be returned to the factory for reconditioning with new spring and bushing.

Trap Parts



SECTION V - PARTS

<u>Cat. No.</u>		<u>Cat. No.</u>		<u>Cat. No.</u>	
X57	Cocking Ratchet Pawl	X79W	Base Bolts (set of 3)	X108W	Worm Gear Assembly
N57W	Carrier Rail Screw Assembly (set of 4)	X82W	Solenoid Mounting Screws (set of 4)	X110W	Planet Gear Assembly
X58	Cocking Ratchet Spring	X83W	Control Switch Mounting Screws (set of 2 with nut plate)	X113	Cocking Gear
X59	Cocking Ratchet	X85W	Switch Mounting Plate Screws (set of 2)	X114W	Compound Bushing Assembly
N59W	Motor Mounting Screws (set of 4)	X86W	Assorted Cotter Pins (Not illustrated) (Complete Set)	X115W	Switch Indicator Plate (Complefe with screws)
N62W	Main Shaft Washers	X87W	Screws for Gear Housing Cover or Worm Shaft Gland (set of 4)	X116W	Master Switch
X64W	Control Pawl Assembly	X88W	Clamp Screw with Lock Washer (for item X39W or X54W)	* X117A	Power Cord Assembly
X65	Control Pawl Spring	X89	Carrier Plate Screw	* X119A	Power Receptacle
X68W	Driving Gear Assembly	X90	Roll Pin for X64W (not shown)	* X120A	Release Outlet Receptacle
X73	Control Pawl Operating Finger	X91	Carrier Grommet (Synthetic Rubber)	* X125A	Release Switch Assembly
X74	Control Switch Mounting Plate (for top opening in X44W)	X92	Carrier Grommet Bushing	X125AX	Release Switch only (not shown)
X75A	Control Switch Insulator (for use with X74 only)	X94	Key for Mainspring Crank	X126C	Control Switch
X75	Control Switch Insulation (for older traps not using X74)	X107	D-iving Worm	V126W	Outlet Box Assembly
X76W	Cable Anchor Clip Assembly	X94	Key for Mainspring Crank	X127	Release Solenoid (Upper)
X77W	Control Pawl Finger Retaining Screw Assembly	X107	D-iving Worm	* X128B	Control Solenoid (Lower)
				V128	Cable Connector
				X129A	Motor

SECTION V - PARTS

<u>Cat. No.</u>		<u>Cat. No.</u>	
X130B	Motor Coupling	X182	Target Stop Carrier
X132	Worm Thrust Bearing	X187W	Target Stop Guide Bar Assembly
X133	Oil Filler and Level Gage Plug	X190W	Guide Bar Mounting Screws (set of 2)
X134W	Access Screw for Control Pawl Pin (With Washer)	X192W	Stop Finger Pivot Assembly
X135W	Recoil Snubber Assembly	X193	Target Stop Sliding Finger
X144W	Recoil Snubber Clevis Pin Assembly	X194	Target Stop Locking Finger
X145	Snubber Trunnion Pin	X195	Target Stop Locking Spring
X146W	Snubber Trunnion Pin Set Screw (set of 2)	X197W	Target Stop Complete (Assembly of all Stop Components on X187W Bar) (Not Shown)
X156	Carrier Nut Lock Washer		
X157W	Carrier Retaining Nut (set of 2)		
X175	Ground Rod (not shown)	NOTE:	Parts indicated thus (*) are used only on traps, starting with Serial No. X1694, which are provided with plug-in type electrical grounding and waterproof release units. For similar parts used on traps with lower serial numbers, see page 23. These earlier traps cannot use above parts (*) unless sent in to factory for conversion.
X176	Ground Rod Clamp (not shown)		
X180	Target Stop Finger		
X181	Target Stop Finger Spring		

V1524A



X115W



X116W



X117



X118



X119



X120



X125



X126C



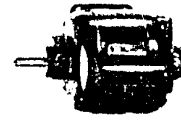
X127



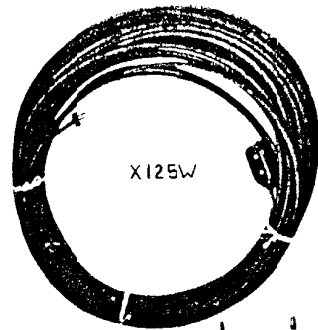
X128A



X130A



X129W



X125W

X132

X133

X134W



X135W



X144W

X145

X146W



X156

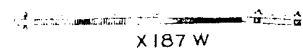


X157W

X180

X181

X182



X187W

SECTION V - PARTS

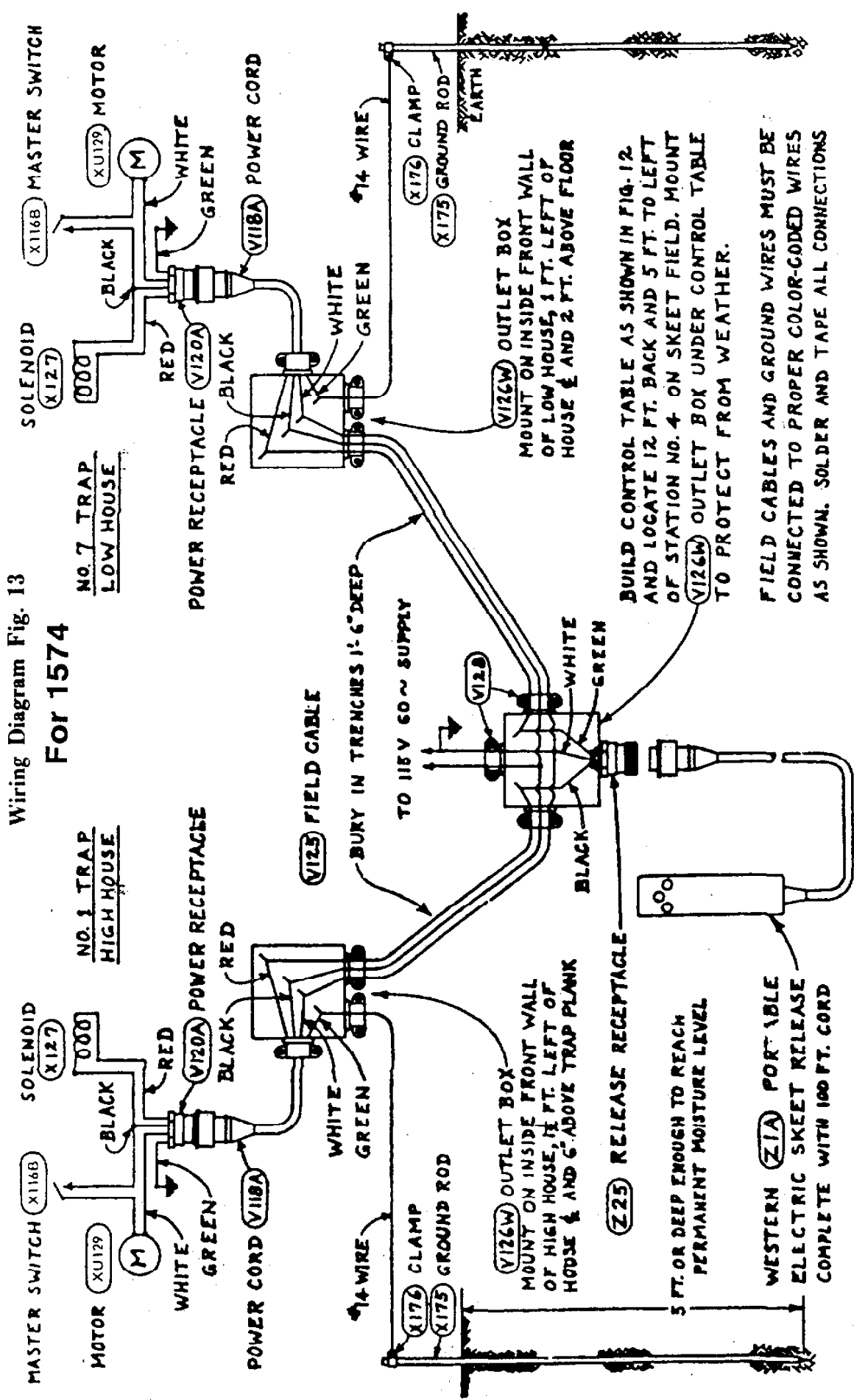
The following parts are used on traps preceding Serial No. Xi694, in place of parts on page 21, marked thus (*).

<u>Cat. No.</u>	
X117	Plug for Power Connection
X118	Plug for Release Extension Cord
X119	Power Receptacle
X120	Release Outlet Receptacle
X125	Release Switch Only
X125W	Release Switch Assembly

All other items illustrated are interchangeable.

Wiring Diagram Fig. 13

FOR 1574



BUILD CONTROL TABLE AS SHOWN IN FIG. 12 AND LOCATE 12 FT. BACK AND 5 FT. TO LEFT OF STATION NO. 4 ON SKEET FIELD. MOUNT (VI26W) OUTLET BOX UNDER CONTROL TABLE TO PROTECT FROM WEATHER.

FIELD CABLES AND GROUND WIRES MUST BE CONNECTED TO PROPER COLOR-CODED WIRES AS SHOWN. SOLDER AND TAPE ALL CONNECTIONS

- WARNING - Electrical installations must be made in accordance with National Electrical Code and applicable local codes!