Shocker Sport™ Manual

Includes: Shocker Sport 4X4™ and Shocker Sport Turbo™

SMART PARTS

EQUIPMENT | COUNTS

WARNING! The Shocker Sport™ Paintball Marker is not a toy. Misuse or careless use may cause serious injury or death. The user and any person within range must wear eye protection designed for paintball use. Recommended at least 18 years old to purchase, 14 years old to use with adult supervision, or 10 years old to use on paintball fields meeting ASTM standard F1777-97. Read operation manual before using. Always use barrel plugs when not involved in actual play. When gassing and de-gassing the marker's system, never aim the gun at another person. Always point the barrel towards the ground. Never use over-filled CO_2 bottles as this will "spike" the system causing the hoses to burst.

Shocker Sport™ Limited Warranty

Smart Parts warrants for 1 year to initial retail purchaser that the Shocker Sport™ paintball marker and regulator are free from defects in materials and workmanship. Disposable parts (batteries, o-rings, seals, etc) are not warranted. The fill poppet and firing piston are warranted for six months. The solenoids and electronics on your Shocker Sport™ are unconditionally warranted for six months, plus an additional warranty of six months for electronic parts only (installation and labor are not included.) This warranty does not cover surface damages (scratches and nicks,) misuse, or improper disassembly and re-assembly, or attempts made to drill holes or remove metal from the external surfaces, which could result in degrading the performance and reducing pressure safety factors. Do not use Teflon tape on any part of this marker--the tape can break off and plug the solenoids. Instead, use *Loctite 271*. Do not make changes to the basic marker parts without written approval. The only authorized lubricant for the gun is DOW 33 Lubricant. Use of any other lubricant could result in voiding your warranty. Use only those "on/off" switches purchased from Smart Parts. Unauthorized "on/off" switches will void this warranty. This warranty is limited to repair or replacement of defective parts with the customers to pay shipping costs. This warranty is effective only if the customer returns the warranty registration card enclosed with the marker.

Thank you for purchasing the Shocker Sport™. The Shocker Sport™ is the culmination of years of research and testing. Engineers at Smart Parts, building on their experience with the original Shocker, have given the Shocker Sport™ a complete overhaul to keep up with the demands of today's players and the quality you expect from Smart Parts, Inc. We've made the Shocker Sport™ smaller, lighter and faster than the original Shocker while keeping the low pressure, accuracy and extremely low ball breakage! In addition, we've upgraded the electronics, wiring and grounding to make the marker more reliable. The Shocker Sport™ now incorporates a digital circuit board, redesigned bolt assembly, new solenoid valves and an optional integrated air assist port.

THE BASICS

The Shocker Sport™ 4x4 and Turbo™ consist of three main assemblies: the **Body**, the **Solenoid Housing,** and the **Grip Frame**.

Body

The Body is two interlinked systems, the Bolt and the Firing System. It also includes an air transfer port and air assist fitting port.

The Bolt is contained in the upper chamber and should only be removed when the gun is degassed. The Bolt is operated by the rearmost solenoid controlling the air going to the front and rear of the bolt piston in order to make it travel back and forth. The bolt's function is to load the paintballs into the breach of the gun and to transfer the air from the firing system to the ball in order to propel it.

The firing system contains three main moving parts: the firing piston, the fire rod and the fill poppet. The firing system is controlled by the foremost solenoid valve which when activated starts the firing cycle. The firing piston and fill poppet are contained in their respective housings. *NOTE: The firing piston also contains a glide ring that is split to facilitate assembly*.

The air transfer port distributes air to the entire gun and has 1/8" N.P.T. ports at the front and rear of the gun. This also contains a gun filter. Clean the filter every six (6) months with alcohol.

The air assist fitting port is where the 10-32 air fitting is screwed into for the optional air assist elbow. It is located on the right-hand side of the gun.

Solenoid Housing

The solenoid housing serves three functions. First it encloses and protects the solenoids, secondly it holds the circuit board and third it connects the body and the grip frame. The solenoid housing is held to the body using four 10-32 Phillips head cap screws. It is important not to over tighten these screws as thread damage may occur. The circuit board is mounted to the solenoid housing using screws and should not be removed or adjusted. The circuit board is coated with a water-repellent coating to prevent problems in wet playing conditions. The timing of the gun is preset at the factory.

A small green LED is located on the side of the solenoid housing. This is the battery life indicator. It will light up continuously when the battery needs replaced. In front of the LED light is the on/off battery switch. This switch acts as the gun's safety.

If you have purchased a Shocker Sport™ Turbo, your solenoid housing will have a 3-way switch protruding from the front of it. This is the Selective Mode switch. It allows you to select between Semi-Automatic and Turbo. With the switch in the center position the gun is in Semi-Automatic mode, the gun shoots once per trigger pull. Moving the switch to the left or right position when you are facing the back of the gun sets Turbo mode.

Two switch covers are provided with the Shocker Sport™, the tournament cover does not allow the modes to be changed during play. The recreational cap is exposes the switch to allow changing modes during play.

Grip Frame

The Grip Frame contains the trigger and battery. It is held to the solenoid housing with two 1/4"-20 screws. The front screw can be replaced with a 1/4"-20 stud and a handle. The batteries are replaceable and can be purchased through Smart Parts or any Smart Parts Authorized dealers. *NOTE: It is highly recommended that you turn off your on/off switch after each day of play. This will greatly extend the life of the battery—if you do not turn off your battery the power will slowly drain.* With normal care and usage the batteries should last at least 100,000 shots. There are holes on the bottom of the grip frame for a standard bottomline fitting.

General Cleaning and Lubrication

The body of the gun should be cleaned off with a damp cloth. In the unlikely event of a ball break, the bolt can be removed when the gun is degassed and a squeegee can be run through the entire upper chamber to clean out the paint residue. *DO NOT run the gun under water to clean out broken paint.*

If you should ever lose or damage an o-ring or seal in your Shocker or your Shocker regulator you may purchase o-ring kits from Smart Parts. They are available in partial and complete kits for both the Shocker regulator and the Shocker.

Your Shocker will need to be disassembled and re-lubricated with a LIGHT coat of Dow Corning 33 silicon grease after each day of play! The main parts that need greased are the bolt, the firing piston and the fill poppet. **Proper lubrication is vital to the performance of your Shocker. If it is not lubricated thoroughly it will not perform at its optimum level! This may also result in premature failure of the o-rings.**

To lubricate the bolt you must unscrew it from the gun. Then using your finger work a small amount of grease into the holes in the body of the bolt, onto the bolt shaft and on the O-rings around the outside of the bolt cylinder body. After this is done work the bolt head back and forth to distribute the grease throughout the assembly.

To lubricate the firing piston (10), first remove the firing cylinder (9) from the gun using a large flat headed screwdriver. (Note: The firing cylinder is located underneath the barrel on the front of the gun.) Next using a small pair of needle nosed pliers remove the firing piston from the firing cylinder. After it is removed spread a light coating of grease on all the o-rings and on the firing piston guide (11). After this is done replace the firing piston and the firing cylinder.

To lubricate the fill poppet (13) first remove the fill poppet seat (12) from the rear of the gun using an adjustable wrench. The fill poppet seat is located below the bolt. Once the seat is removed you must remove the fill poppet guide (14) using a flat bladed screwdriver while holding the housing with an adjustable wrench. Once the cap is removed you should see the end of the fill poppet and the fill poppet bearing (19). Remove these items with a pair of needle nosed pliers. Once you have removed the poppet, spread a light coating of grease on the poppet and the poppet bearing and reassemble the poppet housing. Finally reinstall the poppet housing into the gun.

Anti-siphon Information

An anti-siphon tube is a tube that is installed in a CO_2 tank's valve in order to help prevent liquid CO_2 from entering the system. The tube is screwed into the back of the valve and bent so that the end of the tube will be pointing up when the tank is screwed into the gun. When the valve is completely screwed into the gun mark an "**X**" on the outside of the valve (or on the outside of the tank) near the neck to indicate the ***up position*** of the tube inside the tank and to also show that the tank is an **Anti-Siphon Tank**. NOTE: Tanks with anti-siphon tubes should only be used on the cradle or fitting that it was set-up for. If you use an anti-siphon tank on a different bottle adapter, there is a good possibility that the tube will be oriented incorrectly and draw liquid CO_2. Anti-siphon equipped tanks should never be used on remote systems.

Anti-siphon tubes should only be installed by QUALIFIED AIRSMITHS. Please do not attempt to install an anti-siphon tube on your tank, have a professional install it for you. If you need more information regarding this matter please feel free to contact your local paintball field or Smart Parts at (724) 539-2660.

Battery Pack Removal and Replacement

The battery pack is located in the grip frame and can be replaced easily. In order to change the battery pack one side of the grip must be removed. To do this you must use a Phillips head screwdriver and remove the two screws in the side of the grip frame holding the grip on. Once this is done you can pull the grip back and see the battery pack. Disconnect the battery pack by simply unplugging the connector-plug. *Note: It is important that the on/off switch be turned off after each day of play.* Replacement battery packs are available through Smart Parts and their distributors.

Disassembly of the Shocker SportÔ

Before attempting any disassembling of the Shocker Sport™: remove all sources of paint and air, remove the barrel, and disconnect the battery pack. Failure to follow these precautions may result in damage to the gun and/or ☠ grievous injury ☠ to operator or bystanders.

The disassembly of the Shocker Sport™ into its three main parts is easy. Usually it is not necessary to remove the grip frame and the solenoid housing from the body to do normal maintenance of the components in the body. If you need to access the body or firing chamber skip down to the second paragraph in this section.

The first step is to remove the grip frame from the solenoid housing. This is done using a 5/32" Allen wrench to loosen and remove the two screws holding the two parts together. If you have a front handle it takes the place of the front frame screw. *Note: Use caution when separating the grip frame from the solenoid housing. The spring détente in the safety may come out.* The battery pack must also be disconnected from the circuit board. The next step is to separate the solenoid housing from the main body. The four body screws must be loosened and removed using a Phillips screwdriver. Once this is done the solenoids must be disconnected from the circuit board. Disconnecting the solenoids is accomplished by unplugging the connector from the board itself. Now you have separated the gun into its three main parts.

The body of the gun is the only part that can really be disassembled any further. The first and easiest part to remove is the bolt. To remove the bolt, simply grasp the knurled end and unscrew. A schematic of the bolt and its replacement seals is shown on **page 13, figure 1**.

The next step is to remove all the parts to the firing chamber. The first part of this is the firing piston housing. This is located beneath the barrel in the front of the gun. The firing piston housing is removed using a flat head screwdriver, once the threads are out the part can be removed by simply pulling on it. *Note: Once this part is remove the firing rod may fall out of the gun.* Inside the housing is the firing piston. To remove the piston grasp the end of it using a pair of needle nosed pliers. The firing piston housing is shown on **page 13, figure 2**.

The poppet housing is the next part that can be remove from the marker body. To remove this use a 7/8" open-ended wrench and turn counter clockwise. Again once the threads are out the part can be removed by simply pulling on it. To access the poppet, the poppet guide cap must be

removed. This is done using a flat head screwdriver. Once this is unscrewed the poppet, poppet guide and spring can be removed with a pair of needle nosed pliers. The poppet housing is shown on **page 13, figure 3**.
The two solenoids can be removed from the body by unscrewing the two mounting screws. *Note: We highly recommend you DO NOT attempt to remove the solenoids because the mounting threads are easily stripped. If the threads become stripped you must purchase a new body.*

Velocity Adjustment

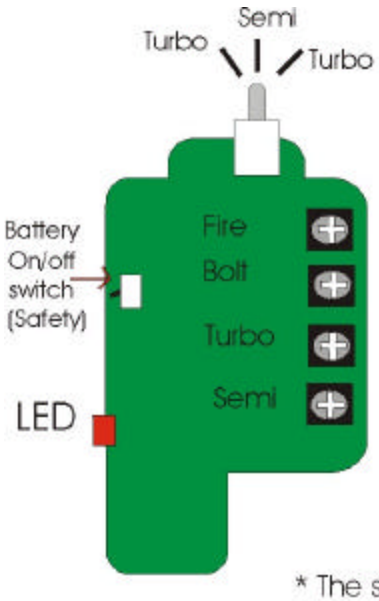
The velocity of the Shocker Sport™ in controlled by the pressure going into the gun. This pressure, and in turn the velocity, is adjusted at the regulator. To adjust the velocity you must turn the spring housing on the regulator. The spring housing is the long black cylinder on the regulator with a hex nut at the top and a hole drilled in the bottom. To increase the velocity you must turn the spring housing in or clockwise. *Caution: Do not increase the pressure over 200 psi. This will cause the solenoids to leak and the hose may burst.* To decrease the velocity you must turn the spring housing out or counter clockwise. Once you have the velocity adjusted to where you want it, you should lock down the lock nut and re-chronograph your marker. *Note: In order to get the proper velocity reading from your Shocker Sport Ô you must point the barrel up when shooting across the chronograph.*

The Circuit Board

The circuit board for the Shocker Sport™ controls the timing of the bolt and firing systems. The circuit board also features a built in safety switch (battery on/off switch). Two different circuit boards are available for the Shocker, the 4x4™ and the Turbo™ board. The Turbo™ board allows for an impressive fire rate.

Another option available through Smart Parts is the VL Revolution loader kit. This loader kit allows you to upgrade your Revolution loader. Instead of being controlled by the seeing eye, the loader is controlled by the trigger pull of the Shocker Sport™. The new loader also has a speed adjustment feature, which allows you to adjust the speed of the motor in your loader. This loader also has a battery saving feature that can extend the life of your loader batteries.

A picture of the circuit board is shown at the end of this section. Your Shocker Sport™ has two independent actions with each shot. A FIRE pulse and a BOLT pulse. The fire pulse sends the paintball down the barrel. The bolt pulse feeds a new ball into the fire chamber. Your marker has been factory set for optimum performance of both fire and bolt action. In the unlikely event that your Shocker Sport™ needs fine-tuning, adjustment pot switches have been provided for the fire and bolt pulses. Each pot switch has the ability to increase or decrease these pulses (see instructions on next page).



2000 Turbo board L/S

Fire: controls the cycle speed of the friing piston

Bolt: controls the cycle speed of the bolt

Turbo: controls the shooting speed in turbo mode

Semi: controls the shooting speed in semiautomatic mode

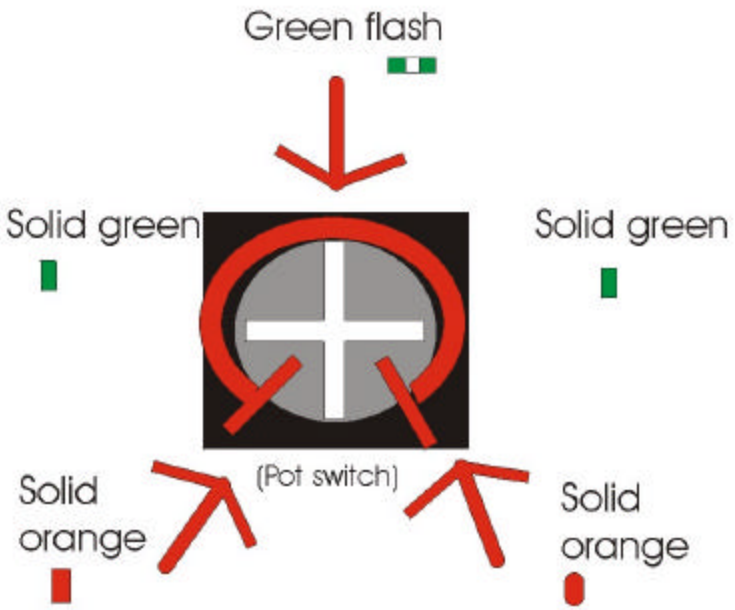
NOTE: A solid green LED light indicates a low battery.

A cycle of either the bolt or firing piston refers to the time taken for the part to move from the *stationary position- to open - and return back to the stationary position

* The stationary position of the bolt is in the closed (forward) position.
* The stationary position of the firing piston is also in the closed (forward) position.

With all pot adjustments, clockwise rotation will increase the cycle speed.

Counter clockwise rotation will decrease the cycle speed.



LED will designate timing position

Note: LED will only indicate timing position during adjustment of the pot switch

The LED on the side of the gun must be used in conjunction with pot adjustment to determine and adjust the timing positions.

A green flash indicates that you are in the center of the pot's adjustment range
note: turbo and semi pots do not have a green flash to indicate center position.

A solid green light indicates that you are either to the right or left of the center pot position.

A solid orange indicates that the pot is in either the extreme high or low end of adjustment.

NOTE: the adjustment range of the pots is not a full 360 degrees !
Therefore any increase past the orange stage of adjustment will enter you into a "dead" area that will not control pot functions.

2000 L/S Board Timing Procedure

Important: Timing is pre-set for each gun before it leaves the factory. Be sure that there are no mechanical problems with the gun such as: worn bolt (or bolt o-rings), un-greased parts, misplaced o-rings, or dirty or clogged pilots and solenoids. All of these circumstances could produce symptoms of a gun out of time. It is highly suggested to first clean all parts including solenoids before altering the timing settings on a circuit board. Also, please call 800-992-2147 and speak to a Shocker technician before timing the gun.

Before starting timing of a gun, it is best to separate the solenoid housing from the upper body of the gun (while leaving the solenoid wires and air fittings connected). This allows a small Phillips head screwdriver to be used to access the board pot switches.

Start with the battery connected; power to the board, and a pressurized gas system.

Be sure that you have a good battery and a completely full tank.
You must also be using a full 12-volt revolution loader with good batteries!!

Note: Paintballs must be properly sized for your barrel when timing the gun!

- **Start** by rotating the "fire" and "bolt" pot switches to the center positions (green flash of the LED).
- You will need to then adjust the inlet pressure of the gun to achieve a shooting velocity of approximately 285 fps.
- With the proper velocity setting, rapid fire some shots through the gun and observe for skipped shots or double feeding.

Symptoms:

Double feeding - this indicates that the bolt is remaining open too long, allowing more than one ball to feed into the chamber. This can be eliminated by increasing the speed of the bolt by using a clockwise rotation on the "bolt" pot switch. (**NOTE: With all pot switch adjustments, use small incremental adjustments.)**

A board that is over timed will cause the gun to "drop off" or "beat down" during rapid fire!

Chopping or catching balls in feed tube - this indicates that the bolt cycle is too fast, not allowing the ball to completely drop into the chamber. This can be eliminated by using a counter-clockwise rotation on the "bolt" switch to slow the bolt cycle that will keep the bolt open longer, allowing the ball more time to fall into the chamber.

Velocity drops off - This indicates that the firing piston is not giving a large enough burst of air to expel the ball from the barrel. This can be eliminated by using a counter-clock wise rotation on the "fire" switch to slow the cycle of the firing piston to keep it open longer thus providing a larger burst of air to expel the ball from the barrel. (Over-timing of the bolt can also cause drop off.)

Blowback in feed tube – This indicates that the firing piston is staying open too long and thus delivering more than enough air needed to expel the ball from the barrel. This is eliminated by using a clockwise rotation of the "fire" pot switch to increase the cycle speed and therefore reduce the time the firing piston is open.

Trouble Shooting

PROBLEM	SOLUTION
1. Gun skips shots	• Check LED light (on side of gun) to see if it is green, indicating that your battery will need to be replaced. • Check the gun and the regulator for air leaks. • Remove main bolt by unscrewing it out of the back of the gun and check o-rings on the bolt tip (the silver part with two seals) to make sure they are not twisted, cracked, or in any way damaged. If the o-rings are damaged, replace them. • Make sure your loader is feeding paintballs as fast or faster than the gun is shooting. (Smart Parts recommends using a 12-volt Revolution loader.) • Remove your fire piston and check the front and back o-rings for damage. Replace any damaged o-rings and re-lubricate firing piston before reinstalling. • Remove and disassemble fill poppet housing. Stretch the spring inside, re-lubricate, and reassemble. • Check to see if your barrel is the appropriate bore size for the paint you are using[1].
2. Air leaks down the barrel	• Remove Fire piston housing and check the o-rings on the front and back of the fire piston for twisting or damage. Re-lubricate and re-install. • Shoot the gun 4 or 5 times to make sure the o-rings have seated correctly. • Solenoid SH3000 is contaminated, you will need to take it apart and clean it. Call Smart Parts for assistance[2] or view instructions at http://www.smartparts.com.
3. Bolt cycles but gun doesn't fire.	• Check the LED light on the side of the gun. If green, you will need to replace the battery. • Check all components in the fire chamber to make sure they are well greased. This includes taking the firing cylinder out of the front of the gun and removing and re-greasing the firing piston. • Check the pressure coming into the gun to ensure it is above 150psi. Also check your tank is not empty. • Make sure there are no air leaks in the gun or

	attachments. If there are, locate and repair them. • Increase the fire pod on the circuit board. Refer to page 7 for instructions. • Check solenoid valve for contamination (SH3000). Call Smart Parts for assistance[2].
4. Air leak on the inside of the gun	• Remove the four corner screws from the solenoid housing and split the gun in half. Check the solenoid screws to ensure they are snug, but use caution not to over-tighten and strip threads. • With the body separated from the grip assembly, gas up the gun and try to locate the exact location of the leak. Call Smart Parts if assistance is needed[2].
5. Inconsistent velocity	• Clean your barrel. • Point barrel upward to keep the ball from rolling out of the breach of the gun. • Check your paint to see if it fits your barrel properly[1]. • Check regulator and gun for leaks. • Check fire piston o-rings and glide rings for cuts and nicks. • Check your bottle valve to ensure it is open completely. • If velocity will only reach 250fps at a high pressure (about 220psi), the middle section of the SH3000 solenoid is clogged with dirt and will need to be replaced.

1. The proper way to check to see if you barrel's bore is the right size for the paint you are using is to insert a paintball into the barrel you are using. Try to blow the ball out of the barrel. If the ball is extremely hard to blow out or if it won't move at all, your bore size may be too small or your paint may be too large. If your ball rolls out the barrel easily, your paint may be too small or your barrel may be too big. If you can blow the ball out of the barrel with minimal force then your bore size is just right. *Note: It is best to try this with a number of paintballs as they may vary from ball to ball.*

2. Please call Smart Parts at 1-800-992-2147. How-to guides are also available at http://www.smartparts.com. When calling Smart Parts, make sure you have your gun and tools in front of you in order to remedy problem.

Parts List for the Shocker SportÔ

Shocker Parts (Page 12)

1. Gun Body
2. Solenoid Housing
3. Grip Frame
15. Trigger Pin
16. Safety Pin
17. Trigger
18. Push Rod
20. Ball Tube
21. Switch Cover (Tournament)
22. Switch Cover (Recreational)
23. 4X4 Circuit Board
25. Battery
27. 3-Way Solenoid
28. 4-Way Solenoid
28A. Solenoid Gaskets and Screws
30. Trigger Spring
31. Safety Spring
32. Circlip
33. Grip Frame Screw
34A. Solenoid Housing Screw
35. Trigger Screw
38. Grip Screw
39. Safety Ball
40. Grip
55. Circuit Board Screw
58. Turbo Circuit Board
200. Filter
325. 3 Way Spool (part of 27)
326. 4 Way Spool (part of 28)
337. Pilot (part of 27 & 28)
455. Coil Complete (part of 27 & 28)

Bolt Assembly (Page 13)

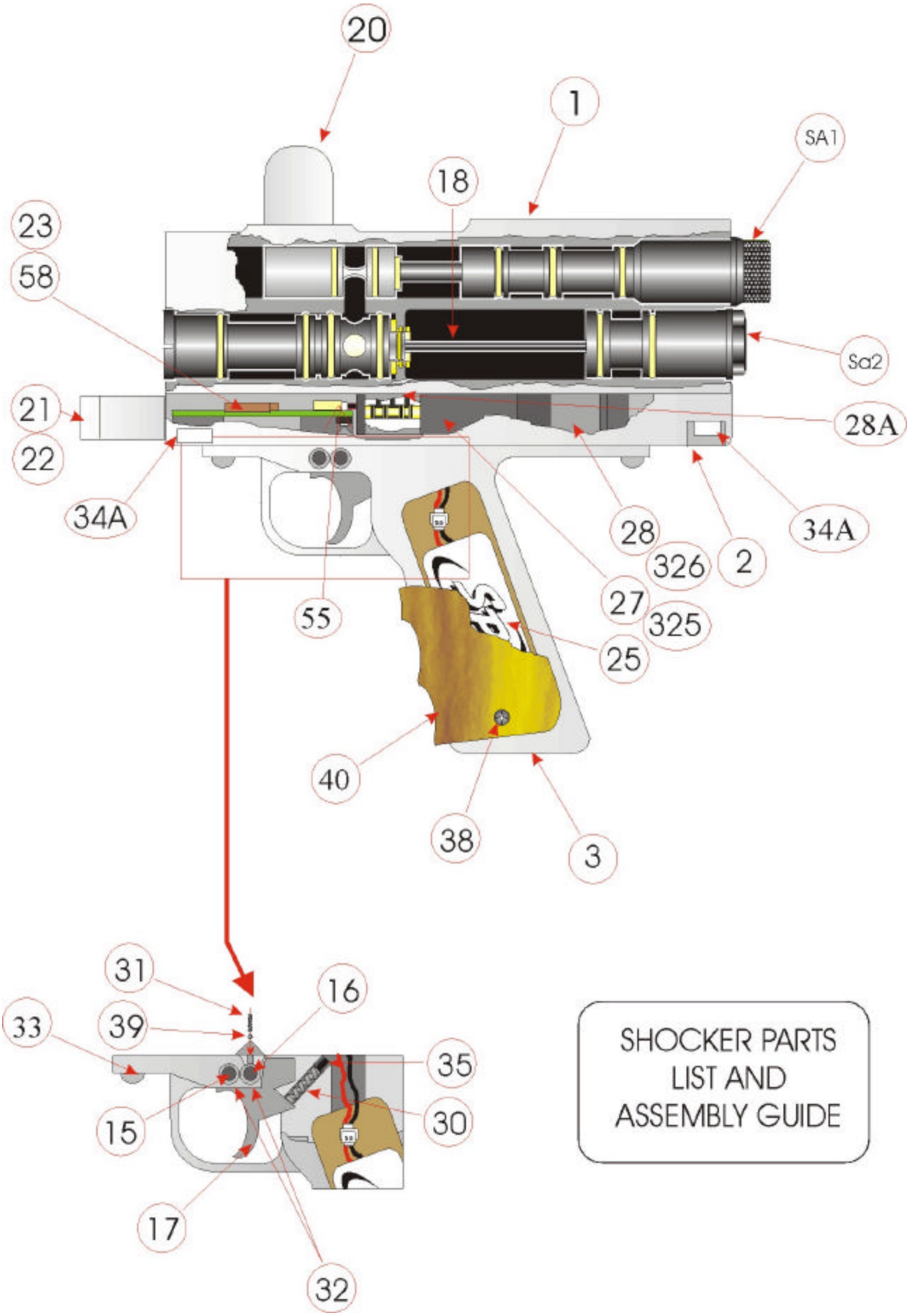
4. Bolt Tip
5. Bolt Tip Seals
6. Bolt Cylinder
7. Bolt Piston
8. Bolt Piston Guide
18. Bolt Piston
42. Bolt Bumper
43. Piston Bumper
44. Bolt Cylinder Seal (outer)
45. Bolt Cylinder Seal (inner)
46. Piston Cylinder Seal
47. Bolt Piston Seal/Firing Piston Seal
48. Piston Guide Seal
51. Bolt Cylinder End Seal

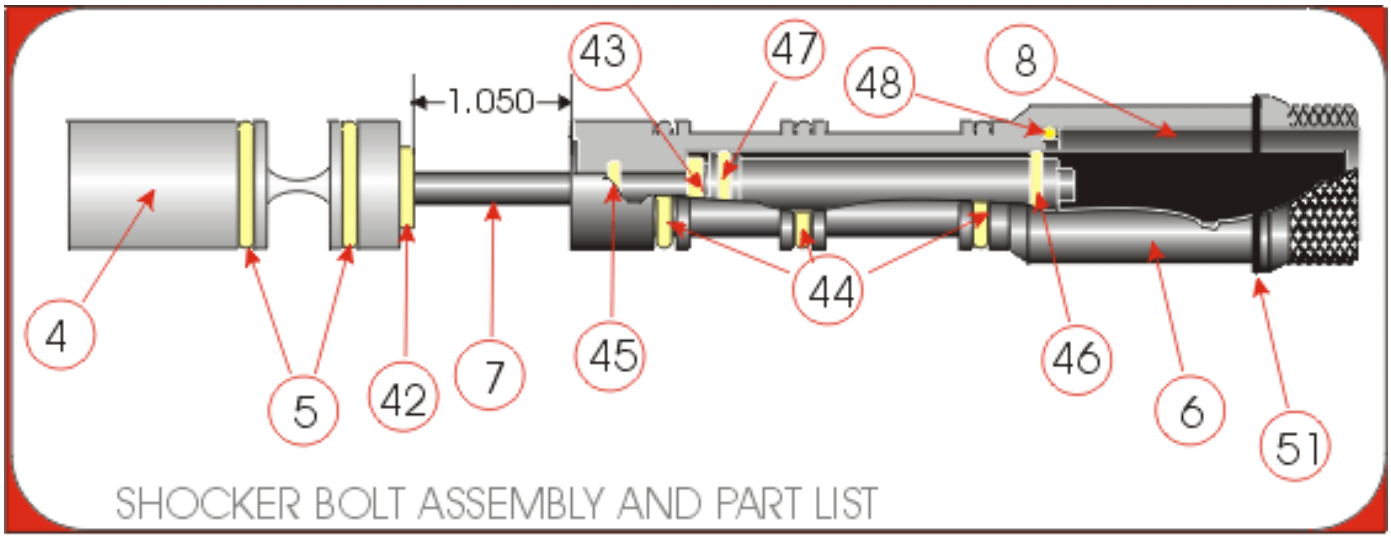
Fire Piston Assembly (Page 13)

9. Firing Cylinder
10. Firing Piston
11. Firing Piston Guide/Glide Ring
47. Firing Piston Seal/Bolt Piston Seal
49. Firing Cylinder Seal/Poppet Seat Seal
56. Firing Piston Seal Front

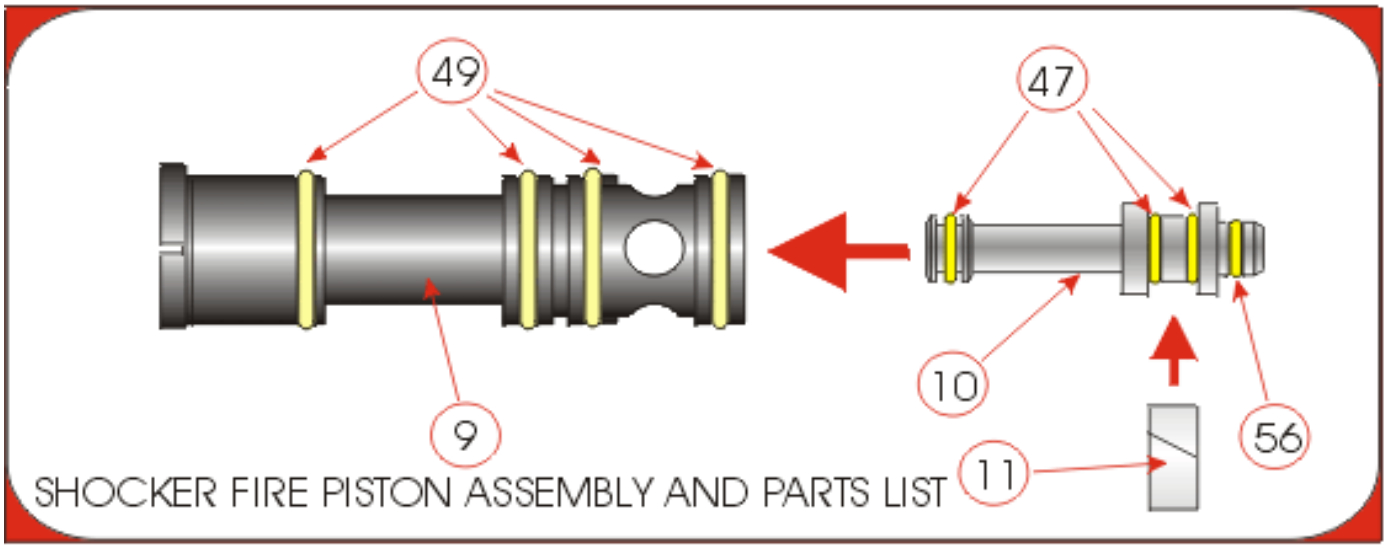
Poppet Assembly (Page 13)

12. Poppet Seat
13. Poppet
14. Poppet Guide
19. Poppet Bearing
41. Poppet Spring
49. Poppet Seat Seal/Firing Cylinder Seal
50. Poppet Guide Seal

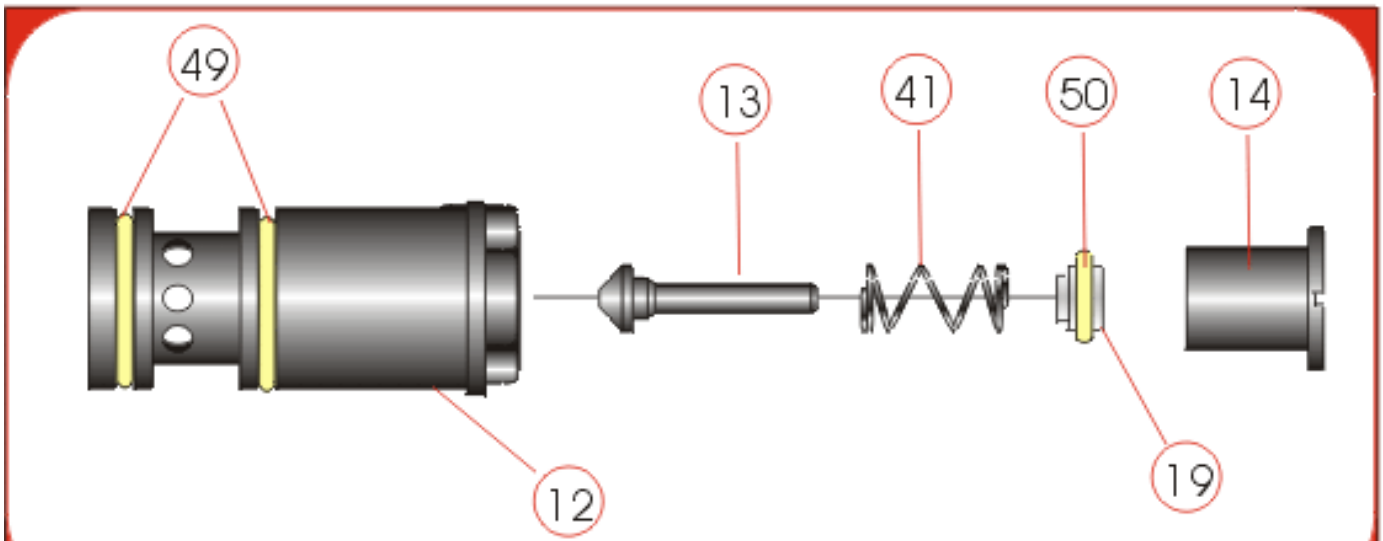

20
1
SA1
18
23
58
Sa2
21
28A
22
34A
34A
28
326
2
27
325
55
25
40
38
3
31
16
33
39
35
30
15
17
32
SHOCKER PARTS
LIST AND
ASSEMBLY GUIDE



SHOCKER BOLT ASSEMBLY AND PART LIST



SHOCKER FIRE PISTON ASSEMBLY AND PARTS LIST



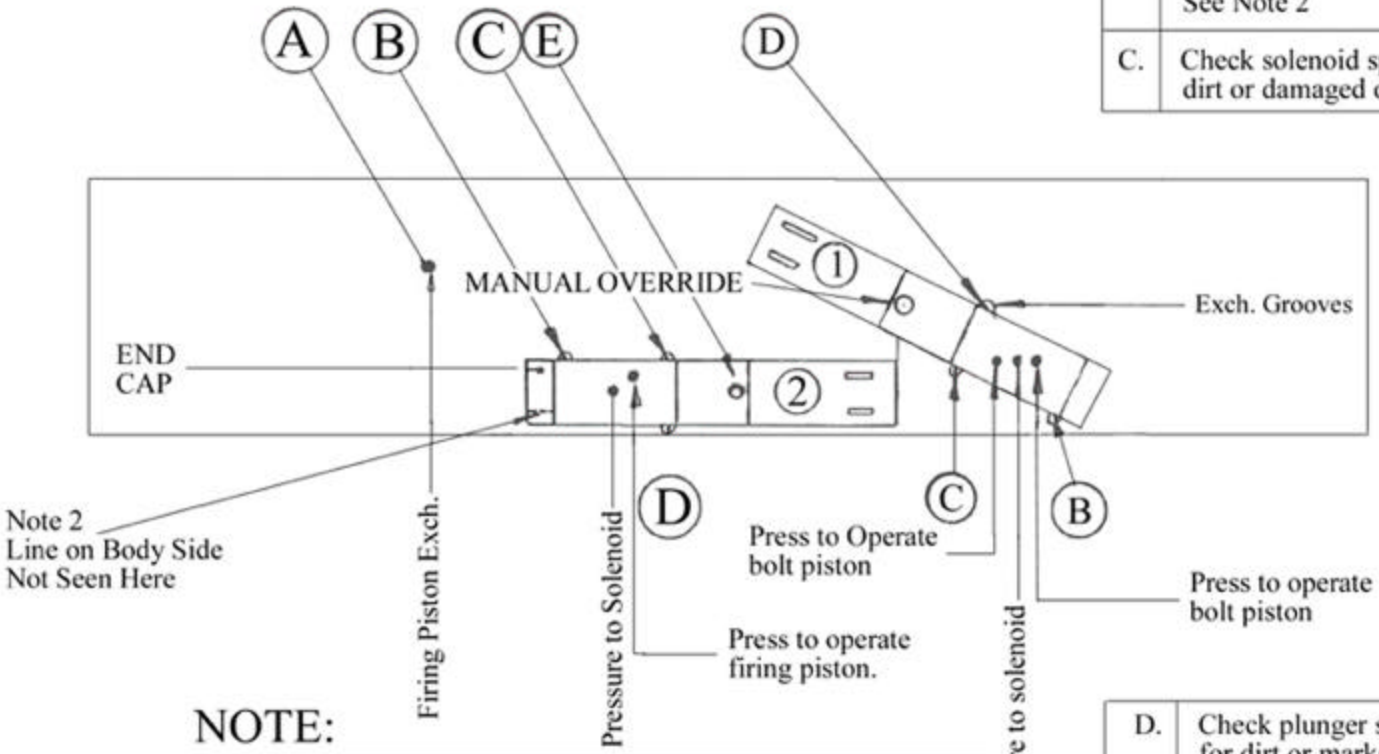
SHOCKER POPPET ASSEMBLY AND PARTS LIST

TROUBLESHOOTING FOR LEAKS ON SHOCKER SOLENOIDS

PLAN OF SHOCKER BODY

① Bolt Solenoid

② Firing Piston Solenoid



A.	Check seals on firing piston housing.
B.	Ensure end cap is fitted correctly. See Note 2
C.	Check solenoid spool for dirt or damaged o-rings.

D.	Check plunger seat for dirt or marks.
E.	Fire gun several times to seat firing piston.

NOTE:

A.	Always check solenoid screws and gaskets first before proceeding.
B.	A,B,C, and D are for constant leaks only. Small puffs of air will be released when firing.

Smart Parts, Inc.
PO Box 3200
Latrobe, PA 15650-5000

Disassembly/Reassembly Instructions

Disassembly of Bolt

1. Remove back end cap from bolt and o-rings from bolt tip,
2. Heat the lower end of the bolt head to loosen the Loctite connecting the bolt head, bolt piston,
3. After the Loctite has been loosened use a flathead screw driver and unscrew the bolt piston from the bolt head through the rear of the bolt (the back of the bolt piston has a groove in it to fit a flathead screw driver),
4. When the bolt head is unscrewed, the bolt piston can be removed from the bolt housing and checked for damage or needed maintenance.

Reassembly of Bolt

1. Apply a heavy coating of grease to the bolt piston o-rings,
2. Slide the smaller bolt bumper over the front of the bolt piston, insert bolt piston into bolt housing,
3. Place larger bolt bumper in between bolt head and bolt housing on bolt piston,
4. Clean bolt head and bolt piston threads with alcohol,
5. After threads are clean and dry apply 680 Green Loctite and reassemble,
6. Screw bolt piston into bolt head until snug.
7. Allow to dry for 30 minutes, minimum,
8. Replace bolt tip o-rings.

Disassembly and Cleaning of Both Solenoids

1. Using a small phillips head screw driver, remove the black cap at end of solenoid (positioned at the silver end of solenoid),
2. When removing cap notice the line on the bottom of the cap (the cap MUST be reassembled with the line *facing down* or solenoid will leak!!),
3. When the cap is taken off remove the cone shaped spring,
4. Using a pair of needle nose pliers pull the shaft out of the solenoid and inspect shaft o-rings for damage or debris.

Reassembly of Solenoids:

1. Grease solenoid shaft and o-rings,
2. Reinsert solenoid shaft with pointed end facing out.
3. Place cone shaped spring over shaft with small end facing shaft,
4. Place cap over spring and shaft (with line on cap facing down) and reinsert phillips head screws.
5. Snug down screws – DO NOT OVER TIGHTEN!!!

Gun Will Not Fire