

OWNER'S MANUAL

MIRAGE

SEMI-AUTOMATIC

CO₂ POWERED PAINTBALL GUN

Manufactured by
MOKAL INC.

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Mississauga, Ontario, Canada
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The MIRAGE is a gas operated semi-automatic paintball gun designed to shoot 0.68 caliber paintballs. Its simple and robust design will give you years of enjoyable use.

CAUTION!

**READ THIS OWNER'S MANUAL, THE WARNINGS
AND THE INSTRUCTIONS COMPLETELY
BEFORE OPERATING PAINTGUN!**

**CARELESS USE OR MISUSE OF PAINTGUN
CAN RESULT IN SERIOUS INJURY.**

MIRAGE

SEMI-AUTOMATIC

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STATEMENT OF LIABILITY

This airgun is surrendered by MOKAL INC. with the express understanding that we assume no liability for its resale or safe handling. It can be considered as a dangerous weapon if mishandled, abused or tampered with. MOKAL INC. shall not be responsible for personal injury or loss of property or life resulting from the use of this airgun under any circumstances, including, but not limited to, the intentional, reckless, negligent or accidental discharges.

WARNING!

THIS PAINTBALL GUN IS NOT A TOY.

Misuse or careless use of this gun can cause serious bodily injury, blindness or death.

READ the owner's manual, warnings and instructions **COMPLETELY** before using gun. This gun is intended for use by people age 18 and older only.

- Observe all laws affecting airguns and paintguns.
- Always wear proper eye and face protection when shooting.
- Never point gun at anyone not wearing proper eye and face protection.
- Remove power source and paintballs before disassembly, transport and storage of gun.
- Never look directly into barrel of gun when gun has power source attached and / or paintballs in gun.
- Use CO₂ as a power source. This gun is not designed or intended for use with any other type of compressed gas.
- Keep body away from escaping CO₂ gas when installing or removing power source to avoid possible frostbite.
- For use only with .68 caliber gelatin-capsule paintballs. Never load or shoot any other object into this gun.
- Insert barrel plug securely in barrel when not shooting.
- When playing paintball, avoid point-blank (within 3 feet) shooting of another player. Avoid shooting at the unprotected head, neck, groin and skin.
- Never play without proper eye and face protection or when all others in shooting area do not have proper eye and face protection. Always play in a safe and sportsmanlike manner.

IF GUN IS SOLD, PROVIDE THIS OWNER'S MANUAL TO THE NEW OWNER.

SPECIFICATIONS

Caliber	0.68
Action	CO ₂ Gas operated blowback
Power	CO ₂ Constant air tank
Weight.....	3.5 lbs.
Overall Length (with standard 9" Barrel)	18 inches
(with optional 14" Barrel)	23 inches
Material.....	Hard anodized aluminum, hardened steel internal parts with black oxide coating

GENERAL COMPONENTS

Diagram 1



DISASSEMBLY

This section describes how to completely disassemble your MIRAGE paintball gun. Remember to remove any gas power sources to the gun before disassembling. You will need the following tools:

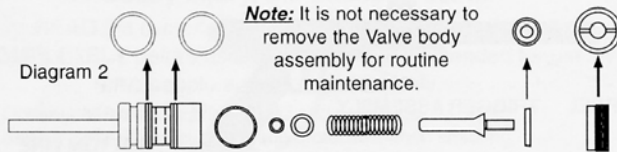
- 3/32, 1/8, 5/32, 3/16 hex keys
- valve disassembly tool or suitable flat screwdriver
- nose pliers

Method:

- 1.) Remove MIRAGE cover by unscrewing the two flat head screws. Use the 1/8 hex key.

- 2.) Tilt the gun over and the connecting rod will fall out.
- 3.) Remove the barrel by loosening the barrel screw. Removal of this screw is not necessary.
- 4.) Using the end of the connecting rod, push the bolt out from the front of the gun.
- 5.) Loosen the two set screws holding the main valve approximately two turns.
- 6.) Using the nose pliers, hold the front of the main valve and pull it out from the front of the gun.
- 7.) Unscrew hammer spring endcap at the rear of the gun. This is the nut with the larger diameter. Remove hammer spring.
- 8.) Unscrew hammer cocking lever, pull trigger and pull out hammer from the rear of the gun.

Disassembly of main valve



- Holding the main valve in a vise or firmly in hand, unscrew brass screw using the special tool or suitable flat screwdriver.
- Pull out valve assembly.
- After replacing the cup seal, a few drops of WD-40 oil or a light gun oil into the bottom-line adapter will help to seal.

Reassembly

When reassembling the **MIRAGE** reverse the above steps. When tightening the valve set screws, thread one screw until it is snug against the valve and then tighten the other. If you tighten one screw too much it may cause the valve body to tilt one way inside the bore of the receiver; if this happens the bolt may get stuck as it enters the barrel. To check to see if the valve is assembled properly, insert the bolt and the barrel. Using one end of the connecting link, move the bolt back and forth. It should move freely. If not, the valve is tilted one way.

LUBRICATE THE GUN

Before pressurizing the gun, it needs to be lubricated. Put a small amount of light gun oil on the hammer part #13, and put the bolt into the forward position. Repeat this lubrication after every 1,000 paintballs shot. Also put two drops of light gun oil into the bottom-line adapter each time you change CO₂ tanks.

CONSTANT AIR INSTALLATION & REMOVAL

Installation:

WARNING! Before pressurizing the gun make sure that it is uncocked so as to prevent accidental discharge. Screw the CO₂ tank into the bottom-line adapter below the grip. On the last turn the pin valve on the tank valve will open and pressurize the gun.

Removal:

Unscrew the tank while pointing the tank away from yourself. After loosening about two turns the o-ring seal on the pin valve will open. Allow the gas accumulated inside the gun to vent before removing the tank. **WARNING!** Failure to do so may cause tank to fly back. **WARNING!** Do not remove tank if valve loosens and sticks in bottom-line adapter. Valve may unscrew with tank or tank may fly back.

LOADING

Install a loader on the feed port of the **MIRAGE**. Follow the manufacturer's directions relating to the loader. Fill with 0.68 caliber paintballs only.

COCKING & UNCOCKING

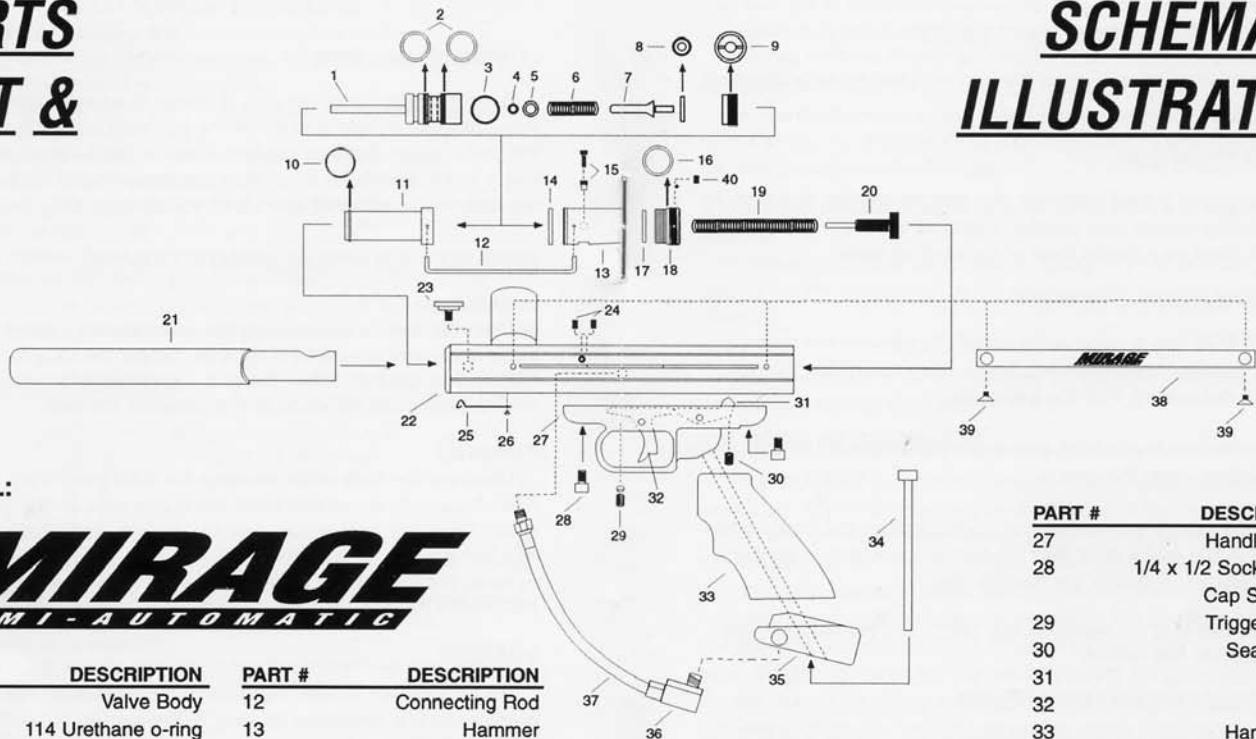
To cock the gun, hold cocking lever firmly and pull it back until you hear a click. Release the lever. When you do this a paintball will have entered the barrel.

To uncock the gun, hold the cocking lever firmly and pull the trigger. This will release the hammer. Allow the hammer to move forward slowly.

PARTS LIST &

SCHEMATIC ILLUSTRATION

Diagram 3



MODEL:

MIRAGE

SEMI-AUTOMATIC

PART #	DESCRIPTION	PART #	DESCRIPTION
1	Valve Body	12	Connecting Rod
2	114 Urethane o-ring	13	Hammer
3	15mm x 1.5 mm Buna o-ring	14	9/16 x 5/8 U-Cup Seal
4	009 Urethane o-ring	15	Cocking Knob & Screw
5	Valve Washer	16	016 Buna o-ring
6	Valve Spring	17	Rear Bumper Washer
7	Valve Stem	18	Endcap
8	Valve Cup Seal	19	Hammer Spring
9	Valve Brass Screw	20	Velocity Adjusting Screw
10	015 Buna o-ring	21	Barrel
11	Bolt	22	Receiver

PART #	DESCRIPTION
27	Handle Frame
28	1/4 x 1/2 Socket Head Cap Screw (2)
29	Trigger Spring
30	Sear Spring
31	Sear
32	Trigger
33	Handle Grip
34	1/4 x 4 Socket Head Cap Screw
35	Bottom-Line Adapter
36	Elbow
37	Teflon Hose
38	Mirage Cover Plate
39	10-24 x 5/16 Flat Head Socket Screws (2)
40	Velocity Adjuster Set Screw

Note: Before uncocking the gun remove any paintballs in the feed port and the barrel by tilting the gun over. If you uncock the gun with a paintball inside the barrel later when you recock another paintball will enter the barrel. If you shoot the gun with two paintballs in the barrel they may break.

SHOOTING YOUR GUN

Point the gun in a safe direction and pull the trigger. The gun will immediately recock and another paintball will enter the barrel.

WARNING! Keep your hands clear of the cocking lever.

BARREL INSERTION & REMOVAL

Your *MIRAGE* has a removable barrel. To remove the barrel, loosen the thumbscrew about two turns. Removal of the thumbscrew is not necessary. Pull the barrel out.

The thumbscrew is made of aluminum with a plastic tip to prevent loosening when using the gun.

When you insert the barrel match up the line on the barrel and receiver. This will make sure that the barrel is positioned properly inside the receiver. Tighten the thumbscrew.

Note: When inserting the barrel do not “jab” it into the receiver; this might damage the ball detent.

ANTI-DOUBLE FEEDING MECHANISM

Your *MIRAGE* has a flat spring detent to prevent double feeding of paintballs. It is located in the front under the receiver secured by a pan head screw. The hooked shape protrudes into the barrel. The tension of the flat spring can be adjusted by first removing the screw and bending the spring as shown. The spring is made from spring steel so it will be difficult to bend, however some adjustment is possible. An adjustment maybe needed to prevent double-feeding paintballs.



Diagram 4

MAINTENANCE

BARREL CLEANING

If a Paintball should break in the barrel, first squeeze out the barrel to get rid of most of the paint, then spray with Isopropyl alcohol and clean with a swab.

BEFORE & AFTER USING OR AFTER EVERY 2,500 SHOTS

Before:

Remove CO2 tank, clean barrel, spray a small amount of light gun oil on the hammer pt. # 13, and put bolt into the forward position.

After:

Place 3-4 drops of oil in constant air adapter. Remove *MIRAGE* name plate and oil front bolt pt. # 11.

VELOCITY ADJUSTMENTS

Your *MIRAGE* is equipped with a velocity adjusting device. It works by varying the spring pressure against the hammer. Tightening the velocity adjusting screw clockwise will increase the velocity, while loosening the screw counterclockwise will decrease the velocity. **Note:** Before you can loosen or tighten the velocity adjusting screw, you must loosen the set screw that is in the hammer spring endcap. Loosen it by turning it counterclockwise. When you have set the velocity using the chronograph, tighten the set screw by turning it clockwise. When tightened, the set screw keeps the velocity adjusting screw from moving.

LOW VELOCITY

Under some conditions, velocity may remain lower than desired even with the velocity adjusting screw turned clockwise to its maximum limit. Higher velocity can be achieved by removing the hammer spring endcap, removing the spring, and then placing a small washer into the spring cavity of the hammer. Reassemble by inserting spring and replacing endcap. Adjust velocity using velocity adjusting screw.

VELOCITY IS TOO LOW

Possible causes:

- 1.) Check velocity adjuster (turn clockwise to increase velocity).
- 2.) Hammer-Bolt is sticky inside the receiver. (Hammer is sticky section in Troubleshooting.)
- 3.) Hammer spring is defective. (Replace.)
- 4.) Check your CO₂ tank, is it empty?
- 5.) If you have followed the instructions in this manual and still have low velocity, take the gun to your dealer or contact Direct Connect for service.

Remember to check your gun with a chronograph after you adjust the velocity. The recommended velocity is about 280-290 fps.

WARNING! Never exceed velocity limit of 300 fps maximum.

TROUBLESHOOTING

Leaking down the barrel.

Cause: Failure of small o-ring seal on valve stem.

Remedy: Remove rear **MIRAGE** Cover screw with hex key. Slide back end of cover up. Tilt gun to left and connecting rod will fall out. Unscrew hammer spring nut, this is the nut with the larger diameter, and remove spring. Unscrew hammer cocking lever, pull trigger and slide out hammer. Looking down the back of the receiver you will see the brass nut. Using a special tool or large flat head screwdriver unscrew nut. Remove valve assembly. Inspect the small o-ring in front of the valve stem. If there is no visible damage apply a suitable o-ring lubricant and reassemble. If problem persists replace o-ring or look for damage on the front of the valve stem which may cause the o-ring not to seal properly.

Leaking through the brass screw.

Cause: Failure of cup seal.

Remedy: Remove the main valve as described above in the Leaking down the barrel section, and disassemble main valve. Inspect the cup seal for debris or foreign matter stuck into the seal; clean and replace. Look for any damage to the seat on the valve stem where it seals against the cup seal. If there is visible damage it will have to be replaced.

Cause: Failure of the 1.5mm x 15mm buna o-ring.

Remedy: Remove the main valve as described above and disassemble. Check the buna o-ring for defects and replace if necessary. Tighten the brass nut firmly.

DOUBLE FEEDING PAINTBALLS

Cause: Insufficient tension on ball detent spring.

Remedy: Remove ball detent spring by unscrewing the 4-40 pan head screw. Bend the ball indexer as shown in Operating instructions #6.

Cause: Failure to turn paintgun over when uncocking paintgun.

Remedy: Turn paintgun over when uncocking paintgun, to remove any paintballs from the feed port and the barrel.

HAMMER IS STICKY WHEN COCKING THE GUN

Possible causes:

- 1.) Bolt is tight in barrel.
- 2.) Debris inside receiver.
- 3.) Poor lubrication.
- 4.) Hammer spring is defective.

Cause: Bolt is tight in barrel.

Remedy: Remove cover and connecting rod and check to see if bolt moves freely into barrel. If not, there could be two problems, A.) the seal is tight in the barrel, B.) the valve body is slightly tilted. Remove barrel and bolt. Insert bolt into barrel to see if the seal is tight. If so, replace the seal. Adjust the set screws holding the valve as discussed in the reassembly section.

Cause: Debris inside receiver.

Remedy: Remove hammer and clean inside of receiver with a tube brush or similar device.

Cause: Poor lubrication.

Remedy: When lubricating hammer, use a LIGHT gun oil specifically designed for paintball guns. WD-40 works well but may require more frequent application.

Cause: Hammer spring is defective.

Remedy: Remove hammer spring and inspect for damage. Replace if necessary.

VELOCITY IS TOO HIGH.

Possible causes:

- 1.) Check velocity adjuster (loosen to decrease velocity).
- 2.) Liquid entering gun. This may be caused by an overfilled tank or by tilting the gun forward causing the liquid to run into the gun.
- 3.) Brass screw and valve may need replacing to give you a lower velocity range. Contact your dealer for details.

GUN IS DOUBLE FIRING.

Possible causes:

- 1.) Low pressure CO₂ in the tank.
- 2.) Trigger mechanism is defective.
Contact your dealer for assistance.

LIMITED WARRANTY

Mokal Warrants this new Mirage paintball gun against defects in materials and workmanship for a period of one year from the date of purchase.

Mokal Inc. agrees to repair or replace any paintgun that Mokal Inc. or its agent determines to be defective. This warranty is conditional: Mokal Inc. or its agent must receive a copy of the original sales receipt to verify purchase date and dealer in order to validate warranty repairs. Any parts claimed defective must be provided to Mokal Inc. or its agent for repair or replacement.

This warranty does not cover damage or defects caused by misuse or abuse, modifications made to the paintball gun, and/or damage caused by lack of care and maintenance. Modification of the paintball gun by anyone other than Mokal Inc. or its authorized service agent will void the warranty.

This warranty is only valid for the original retail purchaser whose name is shown on the original sales receipt. This warranty is void if the paintgun is resold by the original purchaser or if the paintgun is rented or used for any commercial purpose.