

Model OMX-502 Ultra Efficient Ergonomically Designed Spray Gun (Spray Pistol)

IMPORTANT: Before using this equipment, read all safety precautions and instructions. Keep for future use.

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Products shown here are covered by one or more of the following U.S. Patent Nos. 5,236,129, 5,289,974, 5,330,108, 5,332,156, 5,332,159, D351,895, D349,559 & 5,395,094. Foreign patents are issued or pending.

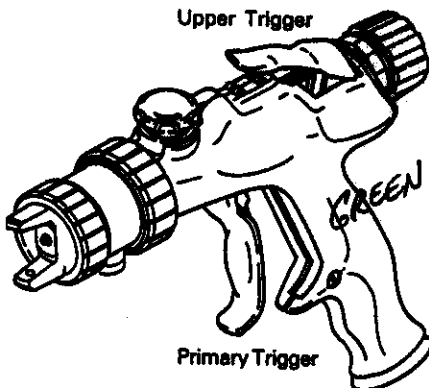
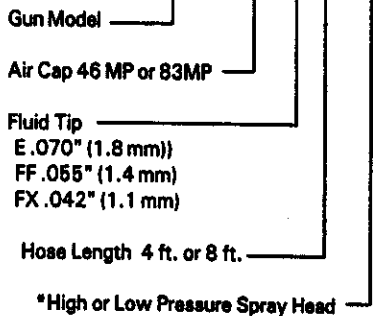


Figure 1

DESCRIPTION

Model:

Example: OMX-502 -46 FF -4 H or L



*High only available with 83MP.

SPECIFICATIONS

Air Inlet:	1/4"
Fluid Inlet:	3/8"
Body:	Engineered Resins*
Wetted Parts:	Engineered Resins* & S.S.
Weight:	12 ounces (340 g)
Fluid Delivery:	Pressure Feed
Max. Fluid Temp.	40°C
P-1 - Maximum Air Pressure:	100 PSI (7 bar)
P-2 - Maximum Fluid Pressure:	150 PSI (10 bar)
Air Consumption at 10 PSI Cap Press.	22.5 CFM (46MP) 26.0 CFM (83MP)
Trigger Force (primary):	< 2 lbs. (908 g)
(pneumatic):	< 1 lb. (454 g)

*A list of materials used in the construction of this equipment is available upon request.

The patented OMX spray gun is an ultra efficient, ergonomically designed, spray gun intended for professional use. It uses low atomization pressure to spray most general purpose coatings and is suited for high production applications. The gun is intended for use with a pressure feed paint supply.

The OMX weighs only 12 ounces (340 g). The handle grip is contoured to fit the palm. The primary trigger requires less than 2 pounds (908 g) of force to pull. These features, along with very flexible hoses, plus alternate trigger methods, make the OMX the ultimate ergonomically designed spray gun.

Triggering Modes

One of the many features of the OMX spray gun is that it offers three triggering modes; refer to Figure 1. A primary trigger, located in the normal spray gun position, provides a full feathering spray pattern similar to a standard spray gun.

An upper trigger, located on top of the gun body, provides a second full feathering trigger. When this trigger is in use, the primary trigger is moved forward out of the way. This upper trigger enables the operator to paint horizontal surfaces with the gun nozzle pointing downward, Figure 2. It also assures that the gun is perpendicular to the surface, for optimum efficiency and finish quality. The operator can also use the upper trigger to aim the gun upward and paint the bottom of surfaces without bending the wrist.

A unique feature of the OMX is the low force secondary (pneumatic) trigger. To use, disengage the primary trigger (see Figure 3) and move it back against the gun handle. The trigger is then used to engage an air valve, Figure 3, on the right side of the gun handle. Total trigger movement to engage the valve and activate the spray gun (spray pistol) is about 1/8 inch (3 mm). This application does not provide a full feathering trigger; spray is either on or off (continued on Page 4).

SAFETY PRECAUTIONS

This manual contains information that is important for you to know and understand. This information relates to **USER SAFETY** and **PREVENTING EQUIPMENT PROBLEMS**. To help you recognize this information, we use the following symbols. Please pay particular attention to these sections.



Important safety information - A hazard that may cause serious injury or loss of life.






Important information that tells how to prevent damage to equipment, or how to avoid a situation that may cause minor injury.

Note


You should pay special attention to this information.



The following hazards may occur during the normal use of this equipment. Please read the following chart before using this equipment.

Hazard	Cause	Safeguards
<p>Fire</p> 	<p>Solvents and coatings can be highly flammable or combustible especially when sprayed.</p>	<p>Adequate exhaust must be provided to keep air free of accumulations of flammable vapors.</p> <p>Smoking must never be allowed in the spray area.</p> <p>Fire extinguishing equipment must be present in the spray area.</p> <p>Static discharges must be prevented. Ground all conductive objects in the spray area, such as cleaning solvent bucket, fire extinguisher, etc.</p> <p>When using solvents for cleaning:</p> <ul style="list-style-type: none"> • Those used for equipment flushing must have a flash point equal to or higher than that of the coating. • Those used for general cleaning must have flash points above 100° F (37.8 C).
<p>Inhaling Toxic Substances</p> 	<p>Certain materials may be harmful if inhaled, or if there is contact with the skin.</p>	<p>Follow the requirements of the Material Safety Data Sheet supplied by your coating material manufacturer.</p> <p>Adequate exhaust must be provided to keep the air free of accumulations of toxic materials.</p> <p>Use a mask or respirator whenever there is a chance of inhaling sprayed materials. The mask must be compatible with the material being sprayed and its concentration. Equipment must be as prescribed by an industrial hygienist or safety expert, and be NIOSH approved.</p>
<p>Explosion Hazard - Incompatible Materials</p> 	<p>Halogenated hydrocarbon solvents - for example; methylene chloride and 1, 1, 1-h are not chemically compatible with the aluminum that might be used in many system components. The chemical reaction caused by these solvents reacting with aluminum can become violent and lead to an equipment explosion.</p>	<p>The OMX HVLP Paint Spray Gun can be used with these solvents. However, aluminum is widely used in other spray application equipment, such as material pumps, cups and regulators, valves, etc. Check all equipment items before use and make sure they can also be used safely with these solvents. Read the label or data sheet for the material you intend to spray. If in doubt as to whether or not a coating or cleaning material is compatible, contact your material supplier.</p>

SAFETY PRECAUTIONS (continued)

Hazard	Cause	Safeguards
<p>General Safety</p>	<p>Improper operation or maintenance of equipment.</p>	<p>Operators should be given adequate training in the safe use and maintenance of the equipment (in accordance with the requirements of NFPA-33, Chapter 15 in U.S.). User must comply with all local and national codes of practice and insurance company requirements governing ventilation, fire precautions, operation, maintenance and housekeeping. In the U.S., these are OSHA Sections 1910.94 and 1910.107 and NFPA-33).</p>
<p>Noise Levels - Ear Injury</p> 	<p>A continuous A-weighted sound pressure level of this spray gun may exceed 85 dB(A) depending on the air cap/spray head setup being used. Sound levels are measured using an impulse sound level meter and analyzer, when the gun is being used in a normal spraying application.</p>	<p>Always wear ear protection when using the gun.</p> <p>Details of actual noise levels produced by the various air cap/spray head setups are available upon request.</p>
<p>Misuse</p> <ul style="list-style-type: none"> • All spray guns project particles at high velocity and must never be aimed at any part of the body. • Never exceed the recommended safe working pressures for any of the equipment used. • The fitting of non-recommended or non-original accessories or spare parts may create hazardous conditions. • Before dismantling the equipment for cleaning or maintenance all pressure, air and materials, must be isolated and released. <p>The disposal of waste materials must be carried out in an approved manner. Burning may generate toxic fumes. The removal of waste solvents and coating materials should be carried out by an authorized local waste disposal service.</p>		
<p>Cumulative Trauma Disorders (CTD's)</p> <p>"CTD'S", or musculo-skeletal disorders, involve damage to the hands, wrist, elbows, shoulders, neck & back. Carpal tunnel syndrome and tendonitis (such as tennis elbow or rotator cuff syndrome) are examples of CTD's.</p>	<p>Use of hand tools may cause cumulative trauma disorders (CTD's).</p> <p>CTD's, when using hand tools, tend to affect the upper extremities. Factors which may increase the risk of developing a CTD include:</p> <ol style="list-style-type: none"> 1. High frequency of the activity. 2. Excessive force, such as gripping, pinching, or pressing with the hands and fingers. 3. Extreme or awkward finger, wrist or arm positions. 4. Excessive duration of the activity. 5. Tool vibration. 6. Repeated pressure on a body part. 7. Working in cold temperatures. <p>CTD's can also be caused by such activities as sewing, golf, tennis and bowling, to name a few.</p>	<p>Risk is reduced by avoiding or lessening factors 1-7.</p> <p>Pain, tingling, or numbness in the shoulder, forearm, wrist, hands or fingers, especially during the night, may be early symptoms of a CTD. Do not ignore them. Should you experience any such symptoms, see a physician immediately. Other early symptoms may include vague discomfort in the hand, loss of manual dexterity, and nonspecific pain in the arm. Ignoring early symptoms and continued repetitive use of the arm, wrist and hand can lead to serious disability.</p>

Triggering Modes (Continued)

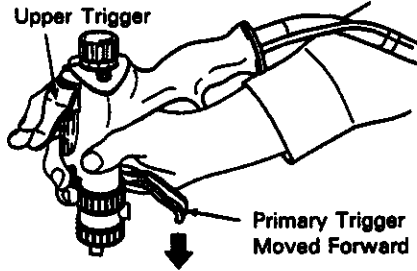
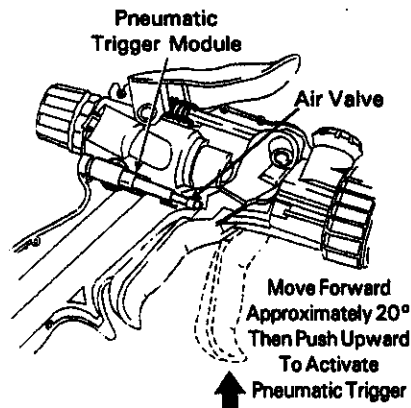


Figure 2

It should be noted that there are always two triggers active on the OMX spray gun; either the primary trigger and the upper trigger, or the upper trigger and the pneumatic trigger. Therefore, it is recommended that when using the upper trigger, the primary trigger be moved forward out of the way to keep it from being accidentally engaged. When using the pneumatic trigger, the top trigger can be used to blow off the arts with air prior to painting.

Figure 3



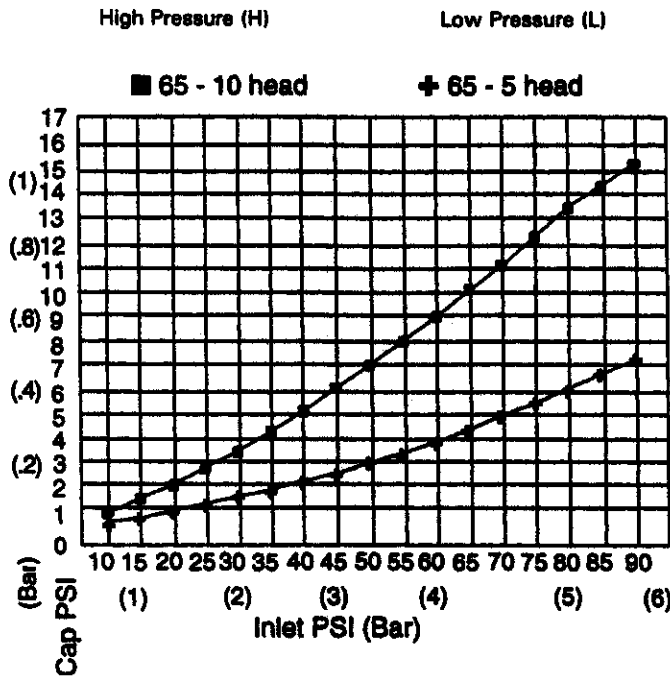
Low and High Pressure Spray Heads

There are two types of spray heads offered; low pressure and high pressure. They allow for operation of the pneumatic trigger at either low pressure or high pressure depending on atomization pressure requirements. The inlet pressure required to achieve the desired air cap pressure differs between the two heads. Refer to the following information and chart for operating parameters.

Approximate Air Cap Pressure Required to Actuate Pneumatic Trigger:

- Low pressure spray head (65 - 5) (L) 3 + PSI (.2 bar)
- High pressure spray head (65 - 10) (H) 6 + PSI (.4 bar)

Chart 1 - OMX Cap Pressure - Low vs. High Pressure Spray Head (Approximate)



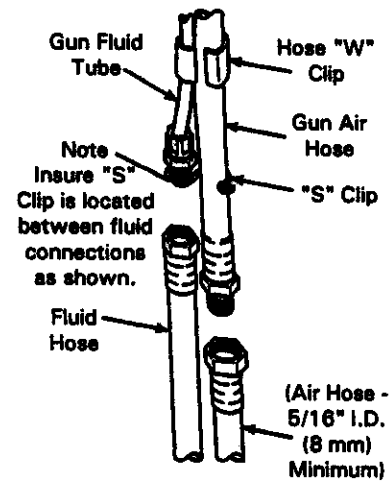
INSTALLATION

The OMX included very flexible air and fluid hoses attached to the gun body. The ends are staggered so that both the fluid and air hose connections are not at the same location. An "S" clip is provided for strain relief of the fluid hose, refer to Figure 4.

Attach the fluid supply hose to the 3/8" gun fluid tube connection. Attach the air supply hose to the 1/4" air hose connection. We recommend 5/16" (8 mm) or 3/8" (9.5 mm) I.D. air hose for HVLP use to minimize pressure drop. Do not use 1/4" (6.4 mm) I.D. air hose.

A means of regulating both fluid and air pressures must be provided so that operation of the spray gun can be properly controlled. Inlet air pressure (measured at the gun) of approximately 65 PSI (4.4 bar) will result in approximately 5 (.3 bar) or 10 (.6 bar) PSI at the air cap (see Chart 1). Actual air cap pressure should be measured with an air cap test kit (see Accessories) to confirm 10 PSI (.6 bar) or less to meet air quality regulations.

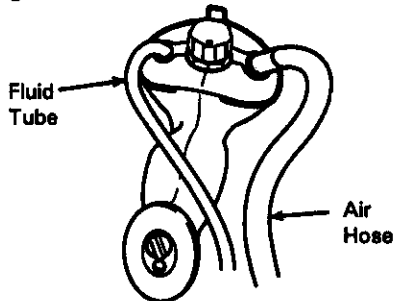
Figure 4



Alternate Air Hose and Fluid Tube Routing

The air hose and fluid tube can be routed through the rear of the spray gun if desired. See Figure 5. Refer to Page 13 for additional information.

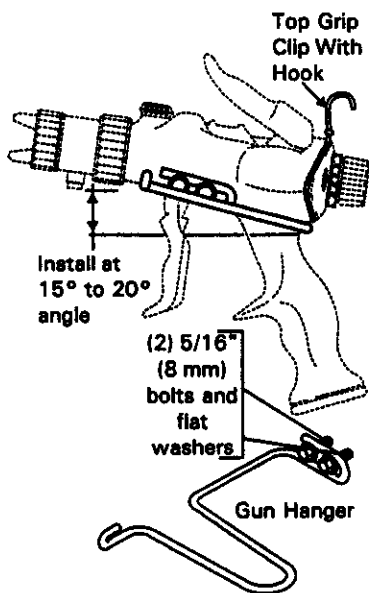
Figure 5



GUN HANGING METHODS (SEE FIG. 6)

The OMX can be mounted to the spray booth wall with the optional OMX-61 gun hanger (purchase separately, see Accessories) or using the upper grip clip with hook. Mount the gun hanger using two (2) 5/16" (8 mm) bolts (or similar size hardware depending upon wall material) and two (2) flat washers as shown in Figure 6. Gun hanger should be positioned so that the hanger is at 15° to 20° angle. This will keep the gun tilted slightly upward and help prevent it from falling out.

Figure 6 (Methods of Hanging OMX Gun)



OPERATION

The fluid control knob and orifice size of the spray tip control the volume of fluid flow. The horn air control knob (fan) provides full pattern control, from a round pattern to a full fan pattern.

Fluid Control Knob



Do not turn the fluid control knob out (counterclockwise) more than 1-1/2 to 2 full turns, enough to achieve full fluid flow. If the fluid control is turned out too far, the pneumatic trigger will actuate and trigger the spray gun. This can cause injury to the operator or other personnel within range of the gun outlet if the gun is accidentally triggered.

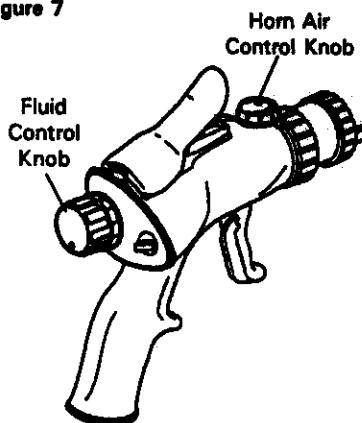
The fluid control knob, Figure 7, is located on the back of the gun handle. Turn it counterclockwise (outward) to increase fluid flow, and clockwise (inward) to decrease or shut off fluid flow. Full fluid flow is achieved at about 1-1/2 to 2 turns out. If you continue to turn the fluid control knob past the full flow point, you will hear and feel air bleed off from the hole in the fluid control knob. This warning feature, an air leak or hissing sound, indicates the knob is turned outwards too far. Turn the knob inward (clockwise) until the air leak stops. If the fluid control knob is turned outward too far, the pneumatic trigger will engage and trigger the spray gun.

Typical Coating Material Flow Rates*

Fluid Tip Size	Fluid Viscosity #4 Ford Cup	Flow Grams/Min.
.042 FX 1.1 mm	24 sec.	280
.055 FF 1.4 mm	24 sec.	400
.070 E 1.8 mm	24 sec.	600

*At inlet pressure of 65 PSI (4.4 bar) air and 20 PSI (1.4 bar) fluid dynamic pressure (flowing).

Figure 7



Horn Air Control Knob

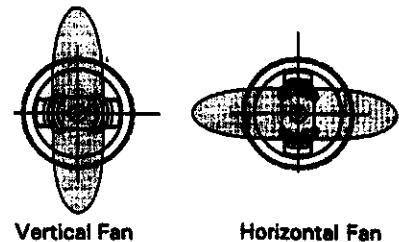
The horn air control knob is located on top of the gun body, Figure 7. It rotates 90° from full on to full off. Within the 90° rotation, the fan pattern will change from a round pattern to a full fan pattern. To increase horn air flow and widen the spray pattern, rotate the knob counterclockwise. To reduce the fan width or for round spray, rotate clockwise.

Limit fan spray pattern to only as wide as necessary. A wider spray pattern than necessary can result in wasted paint.

Spray Pattern

The spray pattern can be changed from a vertical fan to a horizontal fan by loosening the air cap retaining ring and rotating the air cap 90°, Figure 8.

Figure 8



Trigger Operation

The primary and upper triggers operate in two stages. Initial trigger movement opens the air valve, allowing air to flow through the gun. Further movement of the trigger opens the needle, allowing fluid to flow. As the trigger is released, this two stage operation shuts off the flow of fluid before shutting off the flow of air. This lead and lag time assures the materials is properly atomized and prevents "spitting".

Adjustments



Risk of eye injury. Always wear eye protection and point the spray gun in a safe direction when adjusting the fluid control.

With the gun triggered on adjust the regulated air supply to the gun to provide the desired air pressure at the air cap. Confirm air cap pressure with an air cap test kit (see Accessories). Do not use more pressure than is necessary to atomize the material being applied. Adjust regulated fluid pressure to deliver the desired paint volume (refer to following note). Adjust air pressure to provide a uniform dispersion of atomized paint throughout the pattern.

Excessive flow rates will result in heavy center spray patterns. Inadequate flows may cause the pattern to split. HVLP requires that a gun distance of 6-8 inches (150-200 mm) be used. Excess distance will produce inferior results.

Note

With the "Maximum Performer" spray head and air cap configuration, back pressure is created against the fluid column. For example, at 10 PSI (.7 bar) cap pressure, there is approximately 2.5 PSI (.2 bar) back pressure with the 46MP air cap. This will reduce fluid output, and the fluid regulator will require a slight increase to offset the back pressure.

Note

If local or national legislation exists prohibiting the use of air cap pressures greater than 10 PSI (0.7 bar), the air cap test kit (see Accessories) must be used to set the air cap pressure.

Note

The spray gun should be cleaned in accordance with local or national legislation applicable to the industry sector in which the equipment is being used.

CLEANING

Note

Use normal cleaning procedures to clean the OMX spray gun. It should not be necessary to remove the spray head or fluid tube to clean the gun internally. As with all spray guns, soaking the OMX is not recommended, as this removes lubrication and can affect performance.

Disconnect the fluid supply hose at the fluid source and attach cleaning solvent hose. A SolventSaver® Hose and Gun Cleaner is ideally suited to most effectively clean all fluid passages (see Accessories on Page 16).

To clean air cap, brush exterior with a stiff bristle brush. If necessary to clean air cap holes, use a broom straw or toothpick. Never use a wire or hard implement; this may scratch or burr holes, causing a distorted pattern. If necessary, the air cap assembly may be removed and soaked in solvent. The fluid head can also be removed and soaked in solvent if necessary. See "Fluid Head (6) and Needle (12)" under REPLACEMENT OF PARTS section.

Wipe the exterior of the gun with a damp solvent rag to remove overspray (spraymist). The grips can be removed and soaked in solvent if necessary. See "Gun Grips (42 and 43)" in REPLACEMENT OF PARTS section.

PERIODIC MAINTENANCE

At least once a day check and make sure head retaining ring (15, Figure 10) is tight. A loose ring will cause an air leak and pattern distortion.

LUBRICATION POINTS

The following parts should be lubricated when assembling the spray gun:

Ref. #	Description	Instructions
6	Fluid Head	SSL-10 gun lube (2 drops on fluid head threads).
13	Needle Spring	Coat ends lightly with pure petroleum jelly (petroleum based grease)
10/54	O-Ring	SSL-10 gun lube
20	O-Ring	SSL-10 gun lube
27	O-Ring	SSL-10 gun lube
35	Piston Assy.	Light coating of pure petroleum jelly (petroleum based grease) on shaft of piston
48	O-Ring	SSL-10 gun lube
59	Skeleton	Light coating of pure petroleum jelly (petroleum based grease) on inside diameter where piston (35) travels.

REPLACEMENT OF PARTS

All repairs should be made on a clean flat surface. Do not clamp parts in a vise. All part need only be hand tight except where specified in the repair procedures. If using pliers or similar tool to free parts, make sure the jaws are padded.

Replacement Procedures

Note

Always remove the gun from the work site for service or repair. Flush gun thoroughly, relieve pressure, and disconnect fluid and air hoses.

Air Cap (1)

1. When installing the air cap assembly, (1, Figure 10), tighten hand tight, do not overtighten. Apply two drops of SSL-10 gun lube onto the fluid head (6) threads before installing the air cap. (Lubrication facilitates removal of air cap after use.)

Fluid Head (6) and Needle (12)

1. Remove fluid control knob (40, Figure 10) by turning counterclockwise. Remove needle spring (13).
2. Pull trigger to expose needle (12). Remove needle with needle nose pliers.
3. Remove air cap assembly (1) from fluid head (6).
4. Loosen head retaining ring (15) by turning clockwise (when facing front of spray gun). Note the ring remains attached to the skeleton.



If the air cap or head retaining ring become "locked" on due to dried paint, soak the affected area in solvent long enough to soften the paint. Do not use any tools to remove, damage may occur.

5. Grasp fluid head (6) firmly and pull straight off from gun body. If there is any difficulty removing, apply a slight wiggling motion to free the fluid end from the fluid tube O-ring (10).

Note

The fluid head (6) and needle (12) should be replaced as a set. If replacing the fluid head and needle, be sure to also replace the packing (8) to prevent fluid leakage.

6. Remove packing spring (7).
7. Remove fluid tube O-ring (10) from fluid tube assembly and install a new O-ring. See following note.

Note

The O-ring (10) is made of BUNA-N and will naturally swell from solvent and paint. This provides a tight seal in the fluid head. When removing the fluid head, always replace the O-Ring. Trying to reuse a swollen O-Ring will make reassembly difficult, and could damage the O-Ring, causing a fluid leak. Swollen O-Rings can be removed, allowed to dry and "shrink" to their normal size, and then reused. DO NOT reuse if there are any signs of damage.

8. Remove baffle seal (11) and replace with a new seal.
9. Install the new or cleaned fluid head and needle as follows:

(Continued on Page 10)

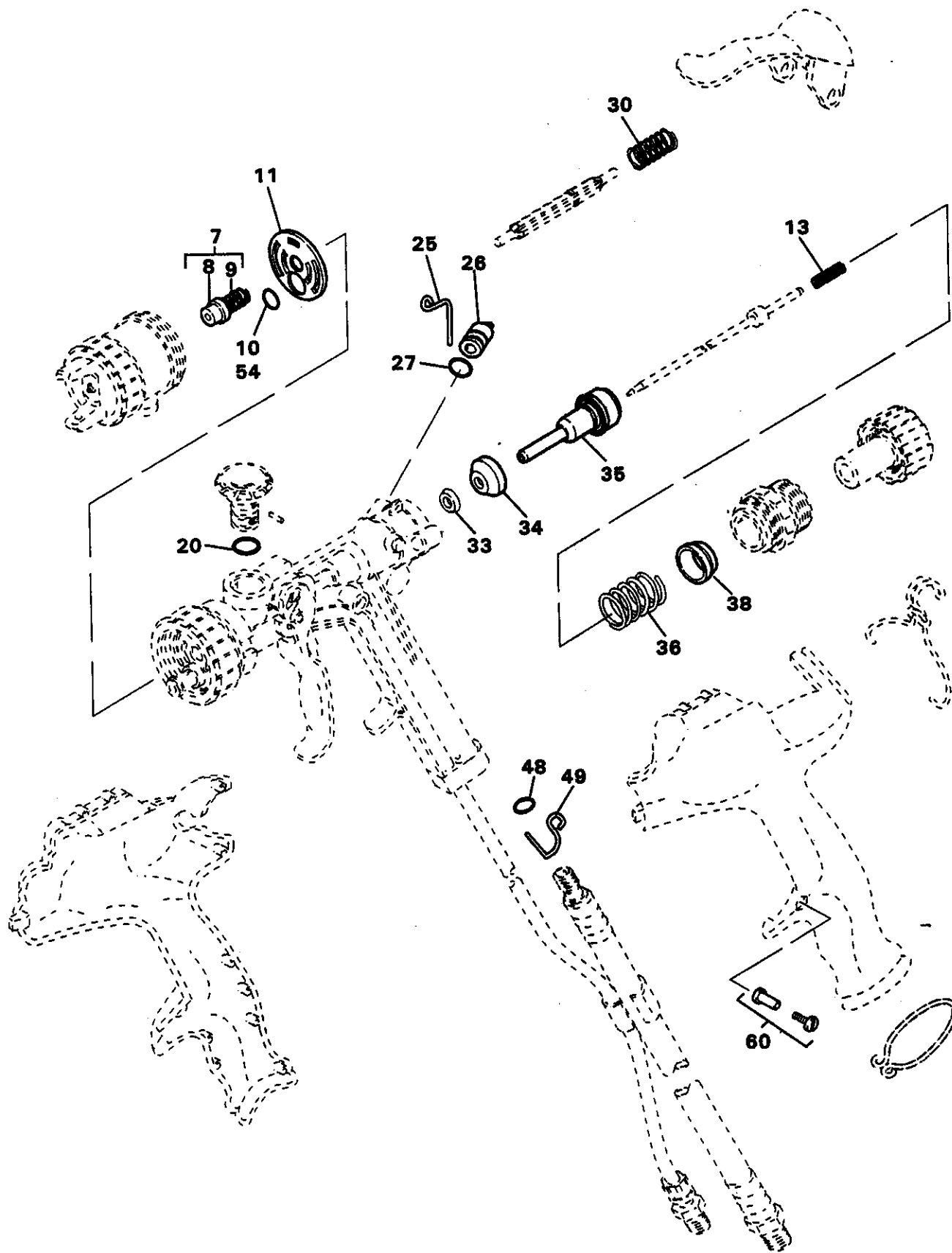


Figure 9 - KK-5030 Repair Kit

** "Left side" must face in this direction when assembling push rod.

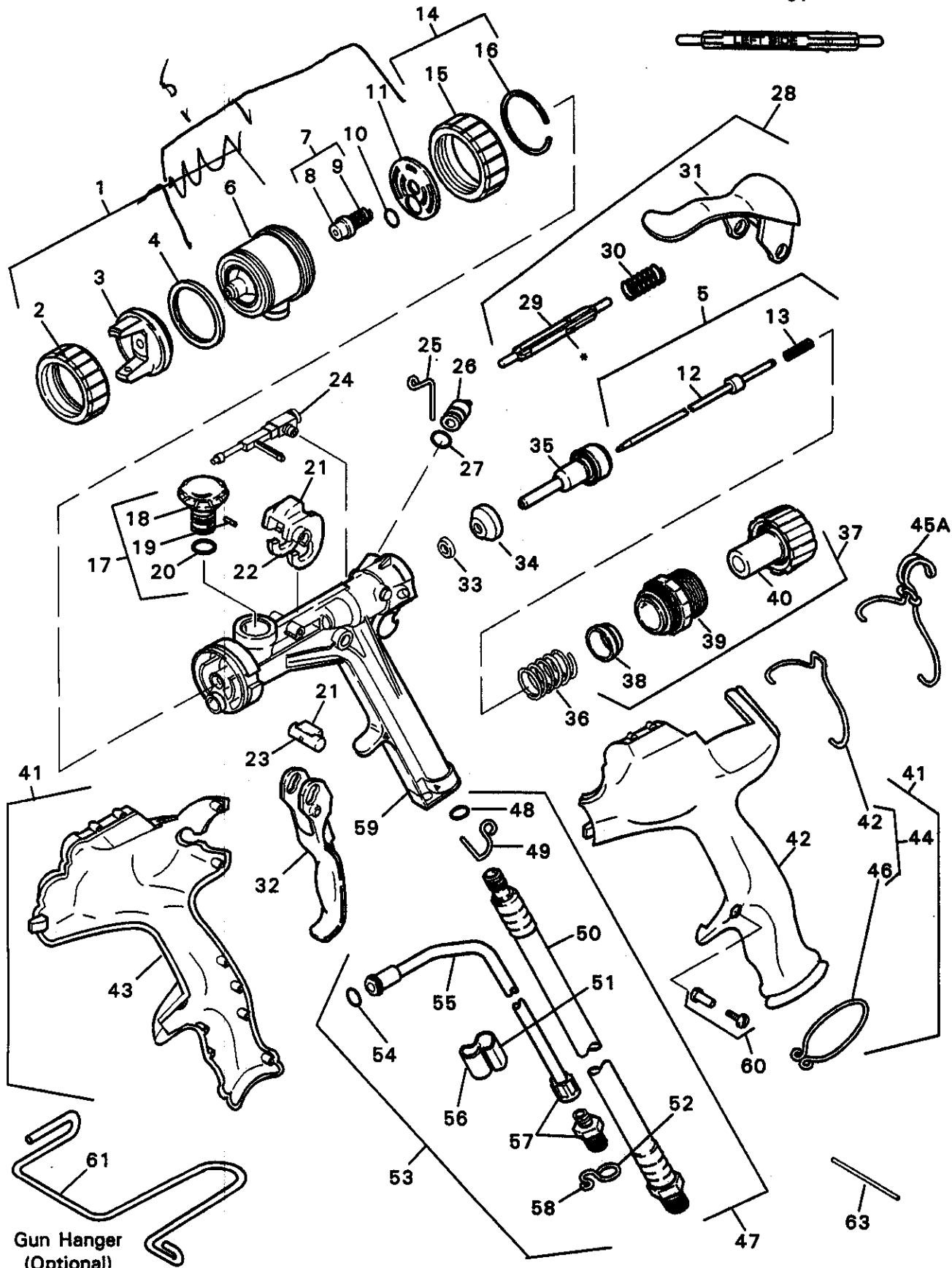


Figure 10 - Spray Gun (Spray Pistol) Exploded View

Ref. No.	Replacement Part Number	Description
1	OMX-411-46MP	Air Cap Kit
	OMX-411-83MP	Air Cap Kit
2	OMX-11	• Air Cap retaining ring (air cap retaining nut)
3	---	• Air Cap "MP"
4	OMX-45-K2	• Seal Kit (Kit of 2)
5	OMX-4011-FF-H	Fluid Head and Needle Kit .055" (1.4 mm) H.P. S.S.
	OMX-4011-FF-L	Fluid Head and Needle Kit .055" (1.4 mm) L.P. S.S.
	OMX-4011-FX-H	Fluid Head and Needle Kit .042" (1.1 mm) H.P. S.S.
	OMX-4011-FX-L	Fluid Head and Needle Kit .042" (1.1 mm) L.P. S.S.
	OMX-4019-E-H	Fluid Head and Needle Kit .070" (1.8 mm) H.P. S.S.
6	---	• Fluid Head Assembly
7	OMX-451	• Needle Packing Kit (includes 5 packings and springs)
8*	---	•• Packing
9*	---	•• Packing Spring
10*	SSG-8189-K10	Fluid Tube O-ring Kit (Kit of 10)
11*	OMX-48-K5	Baffle Seal (Kit of 5)
12	---	• Needle Assembly
13*	---	• Needle Spring, Gold
14	OMX-453	Head Retaining Ring Kit
15	---	• Head Retaining Ring
16	---	• Retaining Clip
17*	OMX-460	Horn Air Valve Kit
18	---	• Horn Air Valve
19	---	• Spring Pin
20*	---	• O-Ring
21	OMX-478	Actuator and T-Block Kit
22	---	• Actuator
23	---	• T-Block
24	OMX-428-K2	Pneumatic Trigger Module (Kit of 2)
25*	---	Air Inlet Retainer (included with Item 47)
26*	---	Air Inlet Plug
27*	---	Air Inlet O-Ring
28	OMX-455	Top Trigger Kit
29	---	• Push Rod
30*	---	• Trigger Spring
31	---	• Upper Trigger
32	OMX-479	Primary Trigger
33*	---	Seal
34*	---	Air Valve Bushing
35*	---	Piston Assembly
36*	---	Piston Return Spring
37	OMX-481	Rear Plug, Seal & Fluid Knob Kit
38*	---	• Air Seal
39	---	• Rear Plug

Ref. No.	Replacement Part Number	Description
40	---	• Fluid Control Knob
41	OMX-480	Gun Grip Kit (includes 1 ea. of items 42, 43, 45, 46, 60)
42	---	• Overgrip, Left
43	---	• Overgrip, Right
44	OMX-457	• Grip Clip Kit (includes 2 upper clips, 2 lower clips)
	OMX-464	• Grip Clip Kit (with hook) (includes 2 upper clips with hook, 2 lower clips)
45	---	•• Upper Clip
45A	---	•• Upper Clip (with hook)
46	---	•• Lower Clip
47+	OMX-4003	4' Air Hose Assembly, 1/4"
	OMX-4006	8' Air Hose Assembly, 1/4"
48*	---	• Air Hose O-Ring
49*	---	• Lower Spring Clip
50	---	• Air Hose
51	---	• Hose Clip (3 or 6)
52	---	• Hose Clip
53	OMX-4015	4' (1.4 m) Fluid Tube Assy. Kit
	OMX-4016	8' (2.8 m) Fluid Tube Assy. Kit
54*	---	• Fluid Tube O-Ring
55	---	• Fluid Tube Assembly
56	---	• "W" Hose Clip (3 or 6)
57	OMX-482	• 3/8" Tube Connector Kit (5 in Kit) (1 in Ref. 53 Kit)
58	---	• "S" Hose Clip
59	OMX-430	Skeleton Assembly
60*	SSF-1000-K5	Stud and Screw Kit (5 each)
61	OMX-61	Gun Hanger (optional)
62	---	Not Used
63	---	Pin Removal Tool (included with Ref. No. 17)

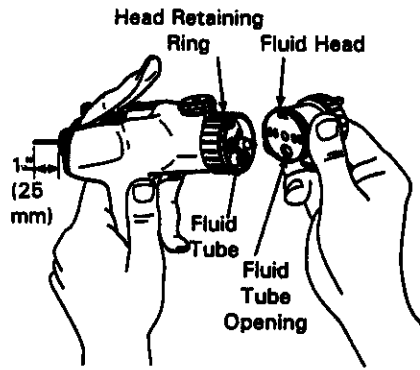
+ Ref. No. 47 also includes Ref. No. 25.

* Parts included in Repair Kit KK-5030. Refer to Figure 9.

L.P. = Lower Pressure H.P. = High Pressure

Notes: Items 10 and 54 are the same part. This part has been shown in 2 locations to show the relationship to parts kits.

Figure 11



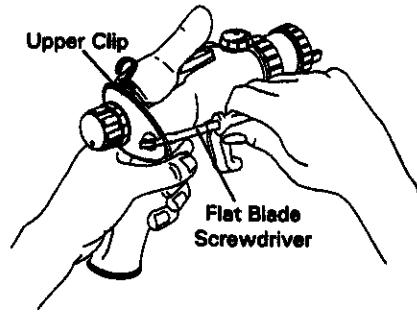
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- a. Apply a small amount of SSL-10 gun lube to the front tip of the needle (12). Install needle (12) partially into gun body through rear opening. Leave about 1" (25 mm) of needle exposed out the rear of the gun.
 - b. Apply a small amount of gun lube to O-ring (10).
 - c. Apply two drops of gun lube to fluid head threads. (Lubrication facilitates removal of part after use.)
 - d. Slide new packing/spring (7) over end of needle.
 - e. Place the fluid head against the gun body, ensuring that the fluid head lines up with the fluid tube opening, Figure 11. Firmly push the fluid head over the fluid tube O-ring and against the head retaining ring.
10. Turn the head retaining ring (15) counterclockwise to draw the fluid head onto the body. Hand tighten the retaining ring until the fluid head is drawn firmly against the gun body.
 11. Push the needle in completely. Install the needle spring (13) and screw in the fluid control knob (40). Turn knob completely in clockwise, then back out 1-1/2 to 2 turns for full fluid flow.
 12. Apply SSL-10 gun lube to the air cap threads. Screw the air cap assembly (1) onto the fluid head (6). Tighten hand tight, do not overtighten.

Gun Grips (42 and 43)

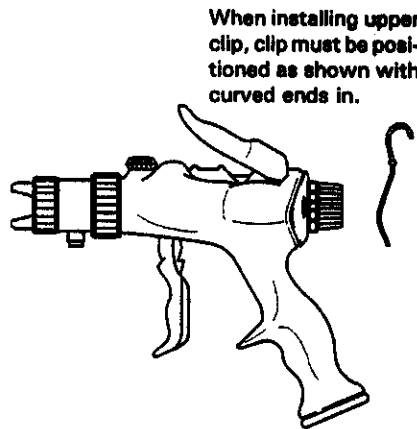
1. Place 1/4" (6 mm) flat blade screwdriver, Figure 12, and pry upper clip out of groove. Expand the bottom of the clip to remove from the mounting slots.
2. To remove the lower clip (46) from the gun grips, use a pair of external retaining pliers or push down on the clip tabs with your thumbs.

Figure 12



3. Remove stud and screw (60) from grips with a 1/4" (6 mm) flat blade screwdriver.
4. Pull outward on the back of each grip to disengage the grips from the notch at the front of the body under the fluid head retaining ring (15).
5. To reassembly grips, install right gun grip. Push grip down into position.
6. Install tab on left gun grip (42) into slot under retaining ring and push grip down into position.
7. Install stud and screw (60).
8. Install lower clip (46) and upper clip (45A or 45). See Figure 13.

Figure 13



Air Valve Bushing (34), Seal (33), Piston (35), and Air Seal (38) (Parts Included in Gun Repair Kit KK-5030)

Note

It is recommended that you use the gun repair kit KK-5030, Figure 9, when undertaking this procedure. Use all parts provided in the kit. Refer to the various procedures in this manual to access all kit parts.

1. Refer to gun grips procedure and remove gun grips (42 and 43, Figure 10).

2. Refer to fluid head and needle assembly procedure and remove head and needle assembly.
3. Remove packing/spring (7), fluid tube O-ring (10), and baffle seal (11).
4. Using a 1-1/16 inch (27 mm) socket or adjustable wrench, unscrew rear plug (39) from gun body.
5. Remove piston return spring (36). Using your finger, push air seal (38) out of rear plug (39).
6. Remove piston assembly (35). You can either remove the piston by striking the back of the gun body against the palm of your hand or by pulling it out with a pair of needle nose pliers.
7. Remove air valve bushing (34) and seal (33). To remove, use a dental pick to catch the center hole, and pull out.
8. (OPTIONAL) Pull out air inlet retainer (25) and remove air inlet plug (26) with O-ring (27).
9. Pull out lower spring clip (49) and remove air hose (50). Remove O-ring (48) from air hose.

Note

When assembling spray gun, lube all sliding parts with pure petroleum jelly (petroleum based grease).

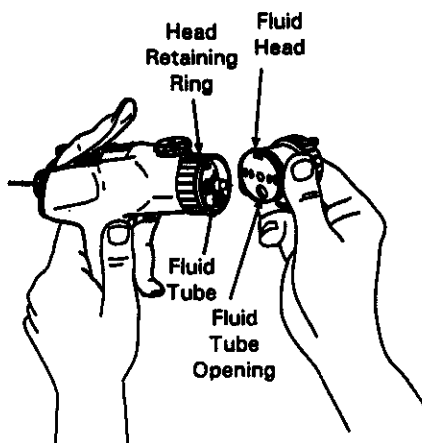
10. Install O-ring (48) onto top groove of air hose (50), the lower groove is for lower spring clip. Lubricate O-ring (48) and slide air hose end into gun body.
11. Push on air hose until you can see light through the lower spring clip hole and install lower spring clip (49) into gun body. Install spring clip into gun body from the left hand side.
12. (OPTIONAL) Install O-ring (27) into top groove of air inlet plug (26), the lower groove is for air inlet retainer. Install air inlet plug into gun body. Push on air inlet plug (26) until you can see light through air inlet retainer hole and install air inlet retainer (25) into gun body. Install retainer from the top of the gun body. Push the bent end of the retainer back against the gun body.
13. Apply a thin film of pure petroleum jelly (petroleum based grease) to inside diameter of the skeleton (59) and outer surface of piston shaft (35). Install piston assembly (35) into air valve bushing (34). Slide U-cup seal (33), grooved end towards bushing, onto piston shaft.
14. Install assembled air valve bushing and piston into gun body. Push in completely.
15. Install air seal (38, Figure 10), tapered end first, into rear plug (39). Install spring (36) into plug.

CAUTION

Overtightening can damage the plug or gun skeleton. When tightening rear plug into gun body do not overtighten. Snug only.

16. Push assembled rear lug into back of gun body and thread into gun. Use a 1-1/6 inch (27 mm) socket or crescent wrench to snug rear plug into gun body, do not overtighten.
17. Install baffle seal (11) into face of spray gun body.
18. Install O-ring (10) onto fluid tube (55). Lubricate O-ring with SSL-10 gun lube.
19. Install needle (12) partially into gun body through rear opening, Figure 14. Leave about 1" of needle exposed out rear of gun.
20. Apply a small amount of gun lube onto O-ring (10).
21. Apply two drops of gun lube to fluid head threads. (Lubrication facilitates removal of parts after use.)
22. Place packing/spring (7) on the end of the needle.
23. Place fluid head against gun body, ensuring fluid head lines up with fluid tube opening, Figure 14. Firmly push fluid head over fluid tube O-ring and against head retaining ring.
24. Turn head retaining ring (15) counterclockwise to draw fluid head onto body. Hand tighten head retaining ring until fluid head is drawn firmly against the gun body.
25. Push needle in completely. Install needle spring (13) and screw in fluid control knob (40). Turn knob completely in clockwise, then back out 1-1/2 to 2 turns for full fluid flow.

Figure 14

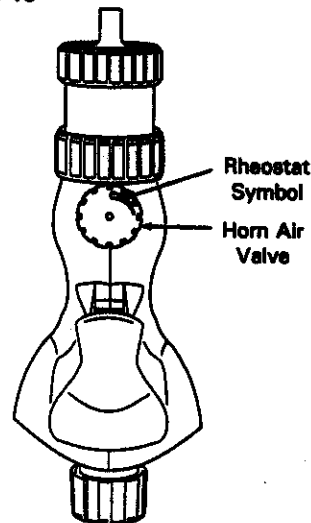


26. Apply SSL-10 gun lube to the air cap threads. Screw the air cap assembly (1) onto the fluid head (6). Tighten hand tight, do not overtighten.
27. Refer to gun grip procedure and install gun grips (42 and 43).

Horn Air Control Knob (18)

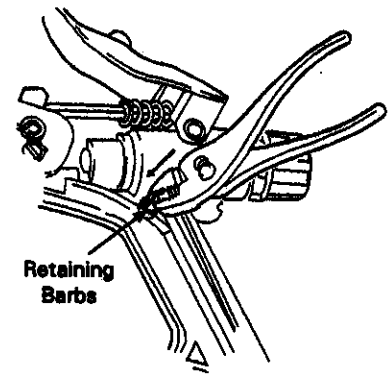
1. Refer to gun grips procedure and remove gun grips (42 and 43).
2. Position gun body so that it is supported near the horn air spring pin (19). Use the pin removal tool (supplied with OMX-460 kit), and a small hammer to drive out spring pin (19).
3. Pull horn air valve (18) from gun body. If cleaning horn air valve, remove O-ring (20). After cleaning, install new O-ring in top groove.
4. Install horn air valve (18) so that the rheostat symbol is in the forward right quadrant, Figure 15, when looking down in the gun body with the handle toward you.
5. Push horn air valve down until you can see light through the pin hole, install pin. Position gun body over block to provide support, and carefully drive pin in using a small hammer.
6. Refer to gun grips procedure and install gun grips (42 and 43).

Figure 15

**Pneumatic Trigger Module (24)**

1. Refer to gun grips procedure and remove gun grips (42 and 43).
2. To remove pneumatic trigger module (24), squeeze the retaining barbs with a pair of pliers and push towards the skeleton (Figure 16). Pull valve out of skeleton from the opposite side.
3. Install new pneumatic valve (24) by locating valve body into skeleton, then pushing until retaining barbs engage on opposite side of skeleton. Lube O-ring with SSL-10 gun lube prior to assembly.
4. Refer to gun grip procedure and install gun grips (42 and 43).

Figure 16

**Primary Trigger (32)****CAUTION**

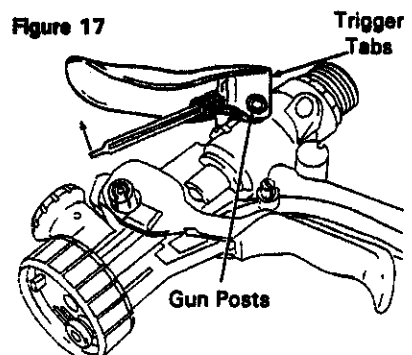
Primary trigger must be positioned in the full forward position to remove or install. If not positioned full forward the trigger pins will not clear the actuator. The trigger may break if spread too far.

1. Refer to gun grips procedure and remove gun grips (42 and 43).
2. Refer to fluid head and needle assembly procedure and remove needle assembly (12) (needle only) from gun body.
3. Position primary trigger fully forward. Using your fingers or a screwdriver, pry the legs of the trigger far enough to clear the actuator and remove.
4. Assemble new trigger in reverse order.
5. Refer to gun grips procedure and install gun grips (42 and 43).

Upper Trigger (31)

1. Refer to gun grips procedure and remove gun grips (42 and 43).
2. With upper trigger (31) lifted fully upward, pull primary trigger, then pull push bar and spring out from notch in actuator, Figure 17. Pry one trigger tab off of mounting post, then the other tab to remove upper trigger.
3. Install trigger spring (30) onto push rod (29).
4. Install upper trigger (31) as follows:
 - a. Spread trigger tabs apart to pass over mounting posts, Figure 17. Engage trigger slots with gun posts.

Figure 17

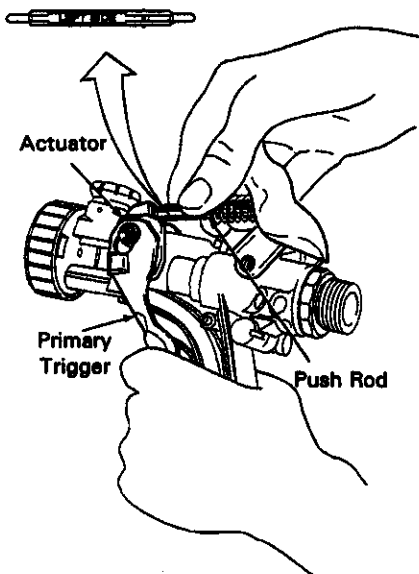


b. Squeeze primary trigger (32) and position push rod and spring into slot of top trigger, with marked left side of push rod facing left, Figure 18.

c. Engage push rod into actuator through notch in top of actuator. Make sure that all components are aligned and in position.

5. Refer to gun grips procedure and install gun grips (42 and 43).

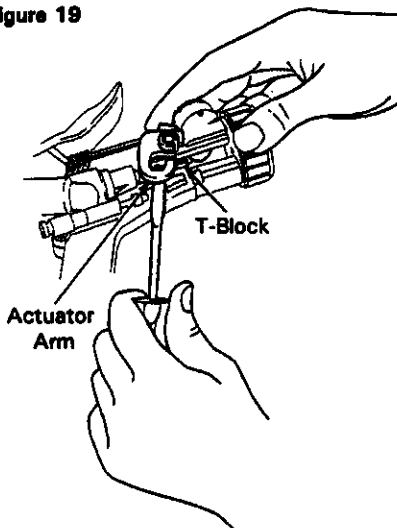
Figure 18



"T-Block" (23) and Actuator (22)

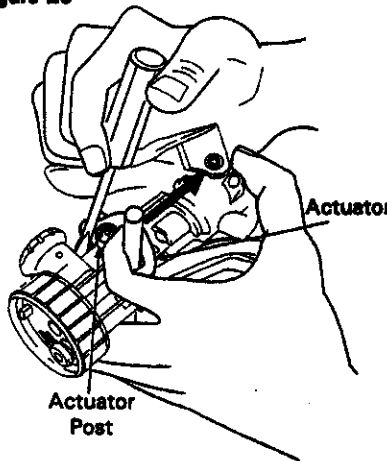
1. Refer to gun grips procedure and remove gun grips (42 and 43).
2. Remove upper trigger push rod (29) and spring (30) (refer to "Upper Trigger" section).
3. Remove primary trigger (32) (refer to "Upper Trigger" section).
4. To remove T-block (23), carefully lift up on actuator tab and use a small screwdriver to push back on T-block, Figure 19, snapping T-block out of actuator.

Figure 19



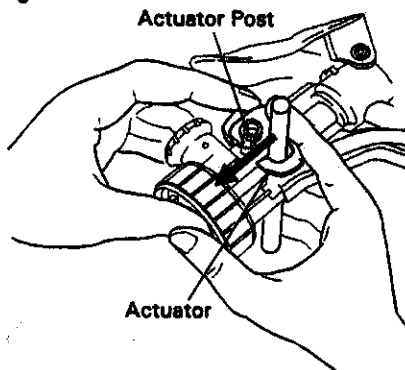
5. To remove actuator (22), wedge a screwdriver between the actuator and horn air valve (see Figure 20). Then, using a pencil or similar tool, pry the actuator back off the skeleton mounting posts as shown.

Figure 20



6. Install the new actuator (22) onto the skeleton as shown in Figure 21.

Figure 21



7. To assemble T-block (23) into actuator, the rounded end must be facing forward, Figure 22, toward the spray head. Install T-block into gun body slot in front of actuator with flat edge into the actuator. Use a small screwdriver to push T-block through into actuator arm on opposite side, Figure 23. At that point, flex actuator arm ear out past T-block and push T-block fully into actuator arm, Figure 24.

Figure 22

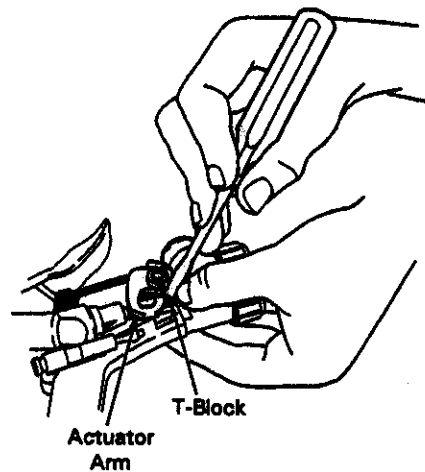
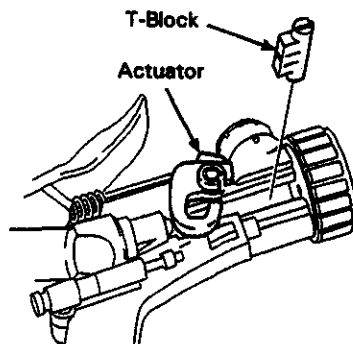
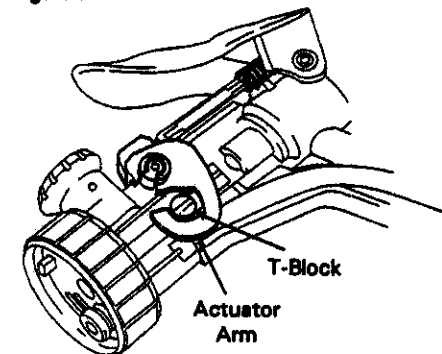


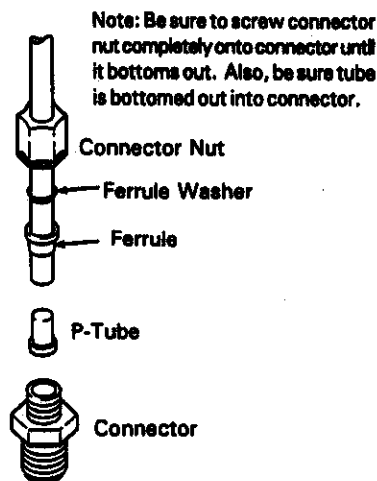
Figure 24



Fluid Tube Assembly

1. Refer to gun grips procedure and remove gun grips (42 and 43).
2. Refer to fluid head and needle assembly procedure and remove head and needle.
3. Remove packing/spring (7).
4. Remove tube connector (57) from fluid tube. Remove connector nut, ferrule, ferrule washer, and P-tube, Figure 25, from fluid tube.
5. Pull fluid tube through loops of hose clips (56).

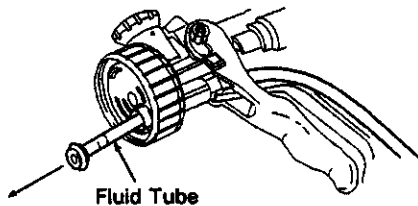
Figure 25



6. Pull fluid tube out from front of gun body, Figure 26.
7. Install fluid tube assembly (55) into round hole at bottom of gun skeleton.
8. Pull fluid tube through skeleton and around slot in gun body and through hole at base of gun body handle. Be careful not to kink nylon tube. Once tube is through gun handle, pull balance of tube through gun body until end of tube just protrudes from spray head. Slide tube through hose clips (56).
9. Install O-ring (54) onto fluid tube.
10. Install packing/spring (7) into spray head of gun body.

Figure 26

11. Refer to fluid head and needle procedure and install fluid head (6) and needle (12).



dure and install fluid head (6) and needle (12).

12. Refer to gun grips procedure and install gun grips (42 and 43).
13. Refer to Figure 25 and install connector nut, followed by the concave side of the ferrule washer and the ferrule. Push P-tube into end of tubing until it bottoms out. Install the connector on the end of the fluid tube and tighten the connector nut.

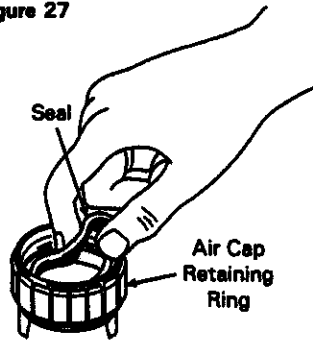
Air Hose

1. Refer to gun grips procedure and install gun grips (42 and 43).
2. Remove hose clips (51) from air hose by using a twisting motion.
3. Pull lower spring clip (49) from gun body handle, and pull end of air hose (50) from gun handle. If necessary, remove O-ring (48) from air hose. Install new O-ring onto top groove of air hose. Lower groove is for lower spring clip.
4. Install end of air hose (50) into gun body handle.
5. Push on air hose until you can see daylight through lower spring clip hole and install lower spring clip (49) into gun body, as shown in Figure 10.
6. Refer to gun grips procedure and install gun grips (42 and 43).

Air Cap Seal

To replace air cap seal, pry out old seal with a small thin bladed screwdriver. With air cap in retaining ring place the seal on outer edge of ring. Use your finger and thumb to push the seal into retaining ring and slip it in place by sliding your finger around the ring, Figure 27.

Figure 27



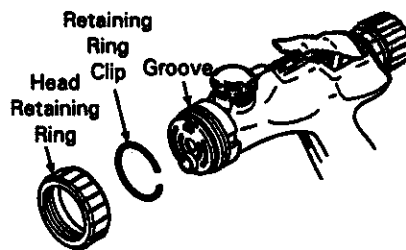
Fluid Head Retaining Ring



Overtightening can damage the plug or gun skeleton. When tightening rear plug into gun body do not overtighten. Snug only.

1. Cut the old head retaining ring (15) using wire cutter, and remove from the gun body.
2. Remove and discard the retaining ring clip (16).
3. Position the new retaining ring clip over the retaining ring groove in the head end of the skeleton, Figure 28.
4. Close the clip with one hand, then push the retaining ring back until it slides over the clip and snaps in place. When properly secured, the head retaining ring is captive and cannot be pulled off the skeleton.

Figure 28

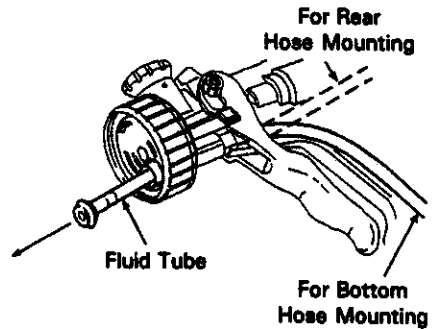


REROUTING AIR AND FLUID HOSES
(See exploded view, Page 8, for reference during procedure)

1. Remove fluid control knob (40) and needle spring (13)
2. Pull trigger to expose needle (12). Remove needle with needle-nose pliers.
3. Loosen head retaining ring (15) clockwise.
4. Grasp fluid head (6) and pull straight off from skeleton (59). Remove packing (8) and packing spring (9).
5. Remove gun grips (42 and 43). Refer to instructions on Page 10 if unfamiliar with removal procedure.

6. Remove tube connector (57) from tube. Carefully disassemble connector; or, if a new connector (57) is available, cut tube just above connector. Refer to Figure 25,
7. Pull fluid tube out from front of gun See Figure 29.

Figure 29








8. Pull retainer clips out (25 and 49), and remove air hose (50) and plug (26).
9. Reverse air hose and plug locations (lubricate the O-rings 27 and 48 with SSL-10 gun lube or pure petroleum jelly (petroleum-based grease) prior to reassembly). Install air hose and plug, retaining in place with the clips (25 and 49).
10. Reroute fluid tube through rear of gun or bottom (whichever applies), being careful not to kink tube. Route the tube through the clips (56).
11. Assemble tube connector (57) onto tube (see Figure 25).
12. Place "S" clip (58) over 3/8" thread of tube connector (57).
13. Partially install the needle (12) into gun body, leaving approximately 1" exposed from the rear of the gun.
14. Lubricate fluid tube O-ring (10) with SSL-10 gun lube or pure petroleum jelly (petroleum based grease).
15. Place packing/spring (7) over head of needle (12).
16. Position the fluid head (6) against body (59), locating fluid tube into the bottom opening. Hand tighten head retaining ring (15) counterclockwise.
17. Push needle (12) in completely, then install needle spring (13), and fluid control knob (40). Screw fluid control knob in completely, then back out 1-1/2 to 2 turns.
18. Reinstall grips.

TROUBLESHOOTING AND SERVICE CHECKS

Normal Spray Pattern:
 Proper gun adjustment will result in a normal spray pattern of this shape.




Condition	Cause	Correction
A. Heavy top or bottom pattern 	Material build up on air cap, partially plugged horn holes, center hole or jets. Material buildup on orifice of spray head or partially plugged orifice.	1. Soak cap or spray head in suitable solvent and wipe clean. To clean orifices use a broom straw or toothpick. Never use a wire or hard instrument. This damages holes and distorts spray pattern.
B. Heavy right or left side pattern 	Note: To determine where material buildup is, invert cap and test spray. If pattern shape stays in the same position, the condition is caused by material buildup in spray head. If pattern changes with cap movement, the condition is in the air cap.	
C. Heavy center pattern 	Too much material. Material too thick. Insufficient horn (fan) air.	Reduce fluid flow by turning fluid control knob clockwise. Reduce fluid pressure or increase atomization pressure. Thin. Increase horn air if not fully open.
D. Split spray pattern or reduced fluid flow 	Not enough material or too high atomization pressure. Excessive horn (fan) air.	Reduce air pressure or increased fluid flow by turning fluid control knob counterclockwise or increase fluid pressure on pressure feed container. Reduce horn air.
E. Jerky or fluttering spray 	Loose air cap. Obstructed fluid passage or tube. Loose or cracked fluid tube in cup or tank. Insufficient fluid in cup or pressure tank.	Tighten retaining ring. Clean. Tighten or replace. Fill cup or tank.
F. Improper spray pattern.	Gun improperly adjusted. Dirty air cap or fluid tip (nozzle) exterior. Spray head orifice obstructed. Baffle seal (11) mis-shaped, out of position, or damaged.	Readjust gun. Follow instructions carefully. Clean air cap or fluid tip. Clean. Replace or reposition.
G. Unable to get round spray.	Spray head loose. Fan adjustment screw not seating properly.	Tighten spray head retaining ring. Clean or replace.
H. Will not spray.	No air pressure at gun. Fluid pressure too low. Fluid control knob not open enough. Actuator pickup tabs on primary trigger broken or trigger set for pneumatic mode (trigger will swing freely in either case). If using pneumatic trigger, large air leak ahead of piston.	Check air supply and air lines. Increase fluid pressure at tank. Open by turning counterclockwise. See Warnings on Page 5 of this manual. Replace bottom trigger or set in primary trigger position. Identify air leak source and correct.

TROUBLESHOOTING (continued)

Condition	Cause	Correction
I. Fluid leakage from spray head.	Fluid packing worn. Spray head and needle worn or damaged. Spray head loose. Fluid packing installed backwards.	Replace Replace. Tighten spray head retaining ring. Install properly. See Figure 14.
J. Dripping from spray head orifice.	Obstruction in orifice. Spray head and needle worn or damaged. Needle return spring missing or damaged.	Clean. Replace. Replace.
K. Reduced fluid flow.	Rear knob mis-adjusted. Push rod (top-trigger) worn at tip. Actuator and top trigger "pocket" wear or trigger pivot worn. If using pneumatic trigger, inlet pressure too low. Back pressure on fluid column from "MP" nozzle.	Turn fluid control knob counterclockwise to increase flow. See Warning on Page 5 of this manual. Replace. Replace top trigger assembly. Increase air pressure. Increase fluid pressure.
L. Cannot stop air or fluid flow.	Fluid control knob turned out too far (note air leaks through opening in knob). Excessive air leak in rear of gun behind piston. Orifice in piston U-Cup obstructed. Seal face of bushing and/or piston U-Cup.	Turn knob in clockwise. Identify cause and correct. Clean orifice in U-Cup. Replace.
M. Slow (sluggish) needle return when trigger released (pneumatic trigger).	Partial obstruction in orifice of piston U-Cup. Excessive air leak in rear of gun. Pneumatic trigger module leaks after servicing. Paint accumulation between primary trigger (32) and skeleton (59) not allowing trigger to "relax" when released.	Clean Orifice. Identify cause and correct. Replace pneumatic trigger module (24). Clean off overspray.
N. Pneumatic trigger will not function or is sluggish when activated.	Insufficient air pressure (approximately 6 PSI (.4 bar) air cap pressure required for 65-10 spray head; 3 psi (.2 bar) required for 65-5 spray head). Pneumatic trigger module dirty, caused by soaking the gun (not recommended). Pneumatic trigger module parts worn.	Increase air pressure. Replace pneumatic trigger module (24). Replace pneumatic trigger module (24).

ACCESSORIES

OMGZ SolventSaver™ Hose/Gun Cleaner



2 Gal. (8.5 liters) galvanized tank used to clean the inside of hose and material passages of the gun. Available in U.S. only.

HD-503 SolventSaver™ Hose/Gun Cleaner



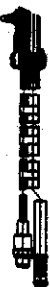
2 Qt. (2.1 liters) Hose/Gun Cleaner used to clean the inside of hose, fluid passageways of gun & other paint equipment. Available in U.S. only.

Spray Gun Lube SSL-10 (2 oz. bottle)



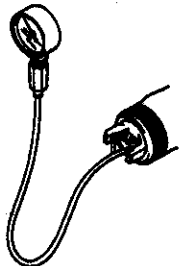
Compatible with all paint materials: contains no silicone or petroleum distillates to contaminate paint.

**OMX-4023 4' (1.4 m)
OMX-4024 8' (2.8 m)
OMX-4025 1' (.3 m)
Spring Guard Kits**



Spring guard encompasses the fluid tube providing kink resistance.

**OMX-5033-46MP Or
OMX-5033-63MP
Air Cap Test Kit**




Measures atomizing pressure at the air cap. Used to confirm pressure in states where legislation prohibits pressures over 10 psi (.7 bar).

GC-100-K5 (5 each) or GC-100-K50 (50 each) Disposable Spray Gun Covers - Save money by reducing cleaning time and maintenance with these covers that also limit operator exposure to overspray.

OMX-483 Upper Trigger Cover Kit - Replaces upper trigger when not used. For applications where the upper trigger is not used or desired.

OMX-61 (Ref. No. 61) Gun Hanger



WARRANTY - Two Year Limited Warranty
Your DeVilbiss spray gun is warranted to be free of defects in materials and workmanship for a period of two years from date of original purchase. This warranty does not cover failures resulting from abuse, improper maintenance, misuse, or normal wear. If found to be defective during the warranty period, DeVilbiss will, at its option, either repair or replace the product. THERE IS NO OTHER EXPRESS WARRANTY, IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO 24 MONTHS FROM PURCHASE AND TO THE EXTENT PERMITTED BY LAW. ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED. THIS IS THE EXCLUSIVE REMEDY, AND LIABILITY FOR CONSEQUENTIAL AND INCIDENTAL DAMAGES UNDER ANY AND ALL WARRANTIES IS EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, OR THE LIMITATION OR EXCLUSION OR CONSEQUENTIAL OR INCIDENTAL DAMAGE, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

WARRANTY - EUROPEAN NOTE
This warranty will not affect the purchaser's statutory rights, for example, under the U.K. Consumer Protection Act.

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