

BINKS MACH 1AR AND MACH 1ARV HVLP AUTOMATIC AIR SPRAY GUNS

(WITH RATCHET NEEDLE ADJUSTMENT) 6913-XXXX-X



MACH 1AR HVLP AUTOMATIC AIR SPRAY GUN

Ideal for industrial coatings, the MACH 1AR HVLP "High Volume, Low Pressure" Automatic Spray Gun incorporates a stainless steel fluid inlet, fluid nozzle, and fluid needle for spraying a wide variety of conventional and waterborne coatings. It is also pneumatically activated for application with reciprocating, rotary, spindle machines, and in stationary gun set-ups. The MACH 1AR Auto Gun features a ratchet fluid needle valve adjustment where repeatable fluid flows are required. Exceptionally rugged in construction, this gun is built to stand up under hard continuous use. However, like any other

NOTE

IMPORTANT REGULATORY NOTE regarding the use of this product appears on page 11. fine precision instrument, it's most efficient operation depends on a knowledge of its construction, operation, and maintenance.

Properly handled and cared for, it will produce beautiful, uniform finishing results long after other spray guns have worn out.

Servicing the spray gun while pressurized could result in components or material exiting the spray gun at high velocity, possibly resulting in bodily injury or damage to the spray gun. Before removing any components from the spray gun, shut off the air and material pressure.

In this part sheet, the words **WARNING**, **CAUTION** and **NOTE** are used to emphasize important safety information as follows:

WARNING

Hazards or unsafe practices which could result in severe personal injury, death or substantial property damage.

Hazards or unsafe practices which could result in minor personal injury, product or property damage.

NOTE

Important installation, operation or maintenance information

🛕 WARNING

Read the following warnings before using this equipment.



EN

READ THE MANUAL

Before operating finishing equipment, read and understand all safety, operation and maintenance information provided in the operation manual.



OPERATOR TRAINING

All personnel must be trained before operating finishing equipment.



EQUIPMENT MISUSE HAZARD

Equipment misuse can cause the equipment to rupture, malfunction, or start unexpectedly and result in serious injury.



LOCK OUT / TAG-OUT

Failure to de-energize, disconnect, lock out and tag-out all power sources before performing equipment maintenance could cause serious injury or death.



AUTOMATIC EQUIPMENT

Automatic equipment may start suddenly without warning.



PRESSURE RELIEF PROCEDURE

Always follow the pressure relief procedure in the equipment instruction manual.



KEEP EQUIPMENT GUARDS IN PLACE Do not operate the equipment if the safety devices have been

removed.



KNOW WHERE AND HOW TO SHUT OFF THE EQUIPMENT **IN CASE OF AN EMERGENCY**



WEAR SAFETY GLASSES

Failure to wear safety glasses with side shields could result in serious eye injury or blindness.



INSPECT THE EQUIPMENT DAILY

Inspect the equipment for worn or broken parts on a daily basis. Do not operate the equipment if you are uncertain about its condition.



NEVER MODIFY THE EQUIPMENT Do not modify the equipment unless the manufacturer provides written approval.

NOISE HAZARD



You may be injured by loud noise. Hearing protection may be required when using this equipment.



PROJECTILE HAZARD

You may be injured by venting liquids or gases that are released under pressure, or flying debris.



PINCH POINT HAZARD

Moving parts can crush and cut. Pinch points are basically any areas where there are moving parts.



STATIC CHARGE

Fluid may develop a static charge that must be dissipated through proper grounding of the equipment, objects to be sprayed and all other electrically conductive objects in the dispensing area. Improper grounding or sparks can cause a hazardous condition and result in fire, explosion or electric shock and other serious injury.



WEAR RESPIRATOR

Toxic fumes can cause serious injury or death if inhaled. Wear a respirator as recommended by the fluid and solvent manufacturer's Safety Data Sheet.



Hazardous fluid or toxic fumes can cause serious injury or death if splashed in the eyes or on the skin, inhaled, injected or swallowed. LEARN and KNOW the specific hazards or the fluids you are using.



FIRE AND EXPLOSION HAZARD

Improper equipment grounding, poor ventilation, open flame or sparks can cause a hazardous condition and result in fire or explosion and serious injury.



MEDICAL ALERT

Any injury caused by high pressure liquid can be serious. If you are injured or even suspect an injury:

- · Go to an emergency room immediately.
- Tell the doctor you suspect an injection injury.
- . Show the doctor this medical information or the medical alert card provided with your airless spray equipment.
- . Tell the doctor what kind of fluid you were spraying or dispensing.

GET IMMEDIATE MEDICAL ATTENTION

To prevent contact with the fluid, please note the following:

- Never point the gun/valve at anyone or any part of the body.
- Never put hand or fingers over the spray tip.
 - · Never attempt to stop or deflect fluid leaks with your hand, body, glove or rag.
 - Always have the tip guard on the spray gun before spraying.
- Always ensure that the gun trigger safety operates before spraving.

IT IS THE RESPONSIBILITY OF THE EMPLOYER TO PROVIDE THIS INFORMATION TO THE OPERATOR OF THE EQUIPMENT. FOR FURTHER SAFETY INFORMATION REGARDING THIS EQUIPMENT, SEE THE GENERAL EQUIPMENT SAFETY BOOKLET (77-5300).



BINKS MACH 1AR HVLP AUTOMATIC SPRAY GUN Typical Arrangement Diagram and Hook-Up for Combined Fan and Atomizing Air



For some applications, each gun may require individually regulated fluid and air inlet lines.



BINKS MACH 1AR HVLP AUTOMATIC SPRAY GUN

Typical Arrangement Diagram and Hook-Up for Separate Fan and Atomizing Air (See Page 5 for Internal Modifications to Gun)

GENERAL NOTES:

- 1. Have at least 55-60 psi air pressure for cylinder's operating air.
- 2. To reduce overspray and obtain maximum efficiency, always spray with lowest possible air pressure that produces an acceptable spray pattern. Fluid pressure should be less than air pressure in most applications.
- 3. The air line from gun to 3-way valve should be as short as possible for rapid operation.
- 4. All air used in the gun should be dirt and moisture free. (This is accomplished by using an oil and water extractor).
- 5. Shut off all fluid and air lines to gun if gun is to stand idle for any length of time. (This is to prevent "build-up" or accumulation of minute leaks in the system from turning on the gun.)

TO CHANGE FROM COMBINED FAN AND ATOMIZING AIR TO SEPARATE FAN AND ATOMIZING AIR

1. Unscrew ratchet housing assembly (28) and remove material needle and attached parts (22, 23, 24, 25) (See assembly drawing, page 6).

A WARNING Use of excessive pressure will cause the piston to exit the gun body at high velocity, possibly resulting in personal injury or damage to gun. When removing the piston, point gun in a safe direction and do not use excessive pressure.

2. Remove piston assembly (18) by injecting low pressure air cylinder air port (A).

- 3. With 5/32" hex key, remove plug (16) from hole (B) on inside of cylinder.
- 4. Insert set screw (20-2141) into position as shown in side cut-away. (Set screw is packaged loose.)
- 5. Re-install plug (16).
- Re-install piston (18), 2 springs (26, 27), material needle (22), and ratchet housing assembly (28). (See assembly drawing, page 6).
- 7. Remove plug (47) from the fan air port (C).
- 8. Install fitting (36) into port (C). (Fitting is packaged loose.)











PARTS LIST

(When ordering, please specify Part No.)

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	54-3531	RETAINING RING	1
2	*	AIR NOZZLE	1
3	*	FLUID NOZZLE	1
4	54-3543	HEAD INSERT	1
5	54-3975	MACH 1AR GUN BODY ASS'Y	1
6	20-1359	SQ. BOLT 5/16-18 x 3/4 LG	1
7	54-3720	SIDE PORT CONTROL ASSEMBLY	1
8	54-3721	CONTROL SPINDLE	1
9	31-258	RETAINING PIN	1
10	31-256	STUFFING BOX	1
11	31-259	INNER WASHER	3
12	20-3620▲	O-RING	1
13	31-241	CONTROL SPRING	1
14	54-4269	JAM NUT	1
15	54-3987□	PLUG	1
16	54-3988□	PLUG 1/16-27 NPT	2
17	20-5286	O-RING	1
18	54-3706	PISTON ASSEMBLY	1
19	54-3729	SEAL	1
20	54-3722	PISTON	1
21	20-4511	O-RING	2
22	47-478	NEEDLE (Stainless Steel)	1
23	20-3515	O-RING (Needle Assembly)	1
24	54-3713	NEEDLE BODY	1
25	54-3709	NEEDLE LOCKING NUT	1
26	54-1697	SPRING Needle Return	1
26a	54-2143	HEAVY DUTY SPRING (Optional)	1
27	54-1876	SPRING Piston Return	1
28	54-3582	RATCHET HOUSING ASSEMBLY	1
29	54-3584	RATCHET HOUSING	1

* See Air and Fluid Nozzle Chart.

▲ Part of Repair Kit 54-3980.

□ Part of Gun Body Assembly, (5).

ITEM NO.	PART NO.	DESCRIPTION	QTY.
30	20-2183	BALL	. 2
31	54-1878	SPRING	. 1
32	54-1870	INDICATOR	. 1
33	54-3583	SCREW	. 1
34	54-1879	RATCHET	. 1
35	54-1984	CAP	. 1
36	71-28	DOUBLE MALE NIPPLE 1/8 NPT x 1/4 NPS	. 2
37	54-3741	FLUID INLET Recirculating (Optional)	. 1
38	54-3533	FLUID INLET (Stainless Steel)	. 1
39	54-4264▲●	GLAND ADAPTER	. 1
40	54-4265▲●	NEEDLE SEAL	. 1
41	54-4266▲●	SEAL BACKUP	. 1
42	54-4267▲●	SPRING	. 1
43	54-4263▲●	PACKING NUT	. 1
44	57-13	DOUBLE MALE NIPPLE 1/4 NPT x 1/4 NPS	. 1
45	54-3716	AIR VALVE GLAND ASSEMBLY	. 1
46	20-3859▲	O-RING Air Valve Gland	. 1
47	54-3986	PLUG 1/8-27 NPT	. 1
48	54-3918	WRENCH (Optional)	. 1
49	82-469	GUN BRUSH	. 1
50	54-3871	GUNNERS MATE	. 1
51	54-4541†	FLUID INLET MACHINING	. 1
52	20-2227▲†	O-RING (2-006 BUNA-N)	. 1
53	54-4531 ▲†	O-RING PACKING SPACER	. 1
54	54-4542†	NUT ASSEMBLY	. 1
55	54-4540†	FLUID INLET ASSEMBLY	. 1
	54-4270	NEEDLE BOOT (Not Shown)	. 1
	54-3661	CLOTH GUN COVER (Not Shown) (Optional)	. 1

■ Part of Piston Assembly (18). Also available separately.

• Part of Self-Adjusting Packing Kit (54-4261) without needle.

† Replaces Items 38-43 on vitreous setup.



SETUP FOR SPRAYING

CONNECTING GUN TO MATERIAL HOSE

Gun should be connected by a suitable length of 3/8" diameter material hose fitted with a connector with a 3/8" NPS(f) nut at gun end. 1/4" diameter hose is recommended for use with low viscosity materials. (Fluid hoses of different composition are available for special fluids.)

CONNECTING GUN TO ATOMIZING AIR

Gun should be connected by a suitable length of 5/16" or 3/8" diameter air hose fitted with a connector and a 1/4" NPS(f) nut at gun end.

CONNECTING GUN TO CYLINDER AIR

Gun should be connected by a suitable length of 3/16" I.D. or 1/8" I.D. air hose of shortest length possible with 1/4" NPS(f) connector.

OPERATING THE MACH 1AR HVLP AUTOMATIC SPRAY GUN

CONTROLLING THE MATERIAL FLOW

When fed from a pressure supply, an increase in the material pressure will increase the rate of flow. Correct fluid nozzle size ensures correct material flow rate. If necessary, fluid flow can also be adjusted by adjusting the amount of needle travel. This is done by adjusting the ratchet housing cap (35) until the correct needle travel is achieved.

ADJUSTING AIR AND FLUID TIMING

A 1/16" gap between the air piston assembly (18) and needle body (24) should be maintained (see figure 1). This will create needle motion that will allow adequate air flow before the fluid starts flowing. The gap may be adjusted by partially removing the material needle (22), screwing it either in or out of the needle body (24) and locking it back into the gun while being sure to check the clearance between the air valve piston (18) and the needle body (24).

ADJUSTING THE SPRAY PATTERN

The width of the spray pattern is controlled by the side port control assembly (7). (See page 6). Turning this control clockwise until it is closed will give a round spray; turning it counterclockwise will widen the spray into a fan shape. The fan spray can be turned anywhere through 360° by positioning the air nozzle (2) relative to the gun. To effect this: loosen retaining ring (1); position nozzle (2) then retighten retaining ring.





NOTE: All No's. in parenthesis refer to Item No's. in Assembly Drawing on Page 6.

RATCHET ADJUSTMENT

- 1. First, note the number on the indicator notch (see REAR VIEW above).
- 2. Remove ratchet housing assembly (28) and 2 springs (26 & 27). Make sure needle body (24) is set with a 1/16" clearance as shown in figure 1. (To set 1/16" clearance, see "ADJUSTING AIR AND FLUID TIMING" above).
- 3. Remove screw (33) from inside the center of the ratchet housing (29) and pull off cap (35).
- 4. Reset cap back onto ratchet housing assembly (28) aligning the zero on the cap to the indicator notch as shown in the REAR VIEW above.
- 5. Tighten screw (33) and reassemble springs and ratchet housing assembly to gun. The needle should now be closed and in the zero position.

NOZZLE AND NEEDLE SELECTIONS HVLP Air Nozzles

- **92P** = For general industrial and automotive finish applications.
- **95P** = Standard pressure nozzle for fine finish spraying.
- **95AP** = Extra fine atomization nozzle for standard finish materials.
- **97P** = Wide fan nozzle for fine finish of high solid coatings.

HVLP AIR NOZZLES 95P, 97P, 95AS, 95AP, 97AP, 905P■

GUN INLET PSI	NOZZLE AIR FLOW SCFM	NOZZLE ATOMIZING PSI
20	11.0	3
30	15.7	5
38	17.5	7
45	19.6	9
50	22.5	10

HVLP AIR NOZZLE 90P■

GUN INLET PSI	NOZZLE AIR FLOW SCFM	NOZZLE ATOMIZING PSI
5	4.0	3
7	4.5	5
10	5.0	7
12	5.5	9
15	6.0	10

HVLP AIR NOZZLE 92P■

GUN INLET PSI	NOZZLE AIR FLOW SCFM	NOZZLE ATOMIZING PSI
6.0	4.5	3
8.5	6.0	5
11.0	6.8	7
13.5	7.5	9
15.0	8.0	10

97AP = Extra fine atomization nozzle for high solids/metallics.

- **905P** = Same as 95P but for use w/900 series fluid nozzle.
- **100P** = Tulip Pattern shape for high quality atomization of low to medium viscosity material.

HVLP AIR NOZZLE 93P■

GUN INLET PSI	NOZZLE AIR FLOW SCFM	NOZZLE ATOMIZING PSI
8.0	5.5	3
11.5	7.0	5
14.5	8.0	7
17.0	9.5	9
18.0	10.0	10

HVLP AIR NOZZLE 94P■

GUN INLET PSI	NOZZLE AIR FLOW SCFM	NOZZLE ATOMIZING PSI
14	7.0	3
21	9.0	5
27	11.0	7
30	12.0	9
33	13.0	10

HVLP AIR NOZZLE 100P■

GUN INLET PSI	NOZZLE AIR FLOW SCFM	NOZZLE ATOMIZING PSI
3.0	3.2	2
6.1	4.8	4
9.0	6.0	6
11.6	6.9	8
14.3	8.0	10

INOTE: Regulator pressures are based on 25' of 5/16" diameter hose in good condition without Quick-Disconnects or other resrictive fittings. Use the air nozzle test gauge accessory to confirm the atomizing/regulator pressure relationship for your actual air supply set-up. These recommendations are for "typical" or "average" fluids, and are intended to serve as a starting point. Adjust as necessary for your specific application.

FLUID NOZZLES STANDARD NOZZLES

MATERIAL	FLUID NOZZLE NO.	APPLICABLE AIR NOZZLES	COMPATIBLE FLUID NEEDLE [†]
ULTRA LIGHT: Reduced Flow.	89 (.020" Dia.) 89A (.025" Dia.)	90P, 92P	47-478
VERY LIGHT: Reduced Flow.	90 (.030" Dia.)	93P, 94P	47-478
LIGHT: less than 15 to 20 seconds in a	91 (.040" Dia.)	95P, 97P	47-478
lacquers, automotive refinishing materials.	92 (.046" Dia.)	05AD*	47-478
MEDIUM: 20 to 60 seconds in a ZAHN 2 Cup, e.g., general industrial coatings	94 (.055" Dia.) 95 (.059" Dia.) 96 (.063" Dia.)	97AP*	47-478
HEAVY: greater than 60 seconds in a ZAHN 2 Cup.	97 (.070" Dia.)	100P	47-478
*"Blue May" fine finish nozzles			

*"Blue Max" fine finish nozzles.

NOZZLE AND NEEDLE SELECTIONS HVLP Air Nozzles

SPECIAL PURPOSE NOZZLES

TYPICAL APPLICATION	FLUID NOZZLE NO.	APPLICABLE AIR NOZZLES	COMPATIBLE FLUID NEEDLE
VERY HEAVY MATERIALS:	94VT (.052")▲ 1.3 mm	94P, 97P, 100P	54-3966
Block FIller, Texture Coatings,	901VT (.066")▲ 1.6 mm		54-3967
Fire Retardants, Road Marking	903 (.079") 2.0 mm		47-478†
Cellular Plastisols. Underbody	905 (.089") 2.3 mm		47-478†
and Vitreous Coatings,	905VT (.088")▲ 2.3 mm	905P	54-3968
Special Applications	906 (.100") 2.5 mm		47-478†
	909 (.111") 2.8 mm		47-478†
	909VT (.112")▲ 2.9 mm		54-3969
FEATHERING	90F (.030") 0.8 mm		54-4032
For applications requiring	91F (.040") 1.0 mm	94P, 97P 95AP, 97AP	54-4033
more gradual valve opening	92F (.046") 1.2 mm		54-4034
with triager	94F (.055") 1.4 mm		54-4036
	97F (.070") 1.7 mm	TOOP	54-4039

⁺ Stainless steel, standard. Optional nylon tipped stainless steel (47-472).

▲ Carbide Tip – used on MACH 1AV gun.

SPRAY GUN MAINTENANCE

LUBRICATION

Monthly: Remove piston assembly (18) and lubricate the air cylinder chamber and needle valve spring with a coating of Gunners Mate. Also, lubricate side port control assembly (7) with oil.

Never use lubricants containing silicone since these lubricants can cause finish defects. Binks Gunners Mate (54-3871) is recommended.

REMOVAL OF PISTON

To remove the piston, first unscrew the ratchet housing assembly (28), remove 2 springs (26 & 27) and pull out the material needle and attached ports (22, 23, 24, 25). Remove the piston by applying a few pounds of air pressure to the cylinder air inlet. This air pressure will cause the piston to pop out.

Use of excessive pressure will cause the piston to exit the gun body at high velocity, possibly resulting in personal injury or damage to gun. When removing the piston, point gun in a safe direction and do not use excessive pressure,

TO REPLACE NEEDLE SEAL AND GLAND ADAPTER IN FLUID INLET

Remove ratchet housing assembly (28), springs (26 & 27) and material needle and attached parts consisting of (22, 23, 24, 25).

Proceed to the front of the gun and remove retaining ring (1), air nozzle (2) and fluid nozzle (3). Then, using wrench (48), unscrew head insert (4) and remove fluid inlet (37 or 38).

Unscrew packing nut (43) and remove spring (42) and seal backup (41). Using a No. $10 \times 1-1/4$ " coarse thread wood screw (Binks Part No. 20-6536) or small sheet metal screw, remove the needle seal (40) and gland adapter (39).

Replace gland adapter (39) and needle seal (40). Re-insert seal backup (41), spring (42) and screw on packing nut (43) a couple of turns so it fits loosely by hand. Reassemble fluid inlet (38) to gun body (5) with head insert (4). Tighten head insert using wrench (48).

Reassemble fluid nozzle (3), air nozzle (2) and retaining ring (1). Re-insert material needle and attached parts (22, 23, 24, 25), springs (26 & 27) and screw on ratchet housing assembly (28). Finally, tighten packing nut (43) until it bottoms out on fluid inlet (37 or 38).

SPRAY GUN CLEANING INSTRUCTIONS

In certain states it is now against the law to spray solvents containing Volatile Organic Compounds (VOC) into the atmosphere when cleaning a spray gun.

In order to comply with these new air quality laws, Binks recommends one of the two following methods to clean your spray finishing equipment:

- 1. Use an enclosed clean-up station or enclosure which will condense and collect VOC vapors to prevent their atmospheric release.
- 2. Use a washer unit. Your gun washer should completely enclose the spray gun, filter, nozzles and other parts during wash, rinse and drain cycles to prevent the release of VOC vapors into the atmosphere.

To further protect the environment, avoid storing solvents or solvent-soaked wipes, such as those used for surface preparation and clean-up, in open or absorbent containers.

To clean the gun, flush the fluid lines with solvent and blow air through the air liens to make sure all the air passages are dry.

Never completely submerge the gun in solvent as this will dissolve the lubricating oil and dry out the seals.

TROUBLESHOOTING

FAULTY SPRAY

A faulty spray may be caused by improper cleaning, dried materials around the fluid nozzle tip or in the air nozzle. Soak these parts in thinners that will soften the dried material and remove with a brush or cloth.

Never use metal instruments to clean the air or fluid nozzles, these parts are carefully machined and any damage to them will cause faulty spray.

If either the air nozzle (2) or fluid nozzle (3) are damaged, these parts must be replaced before perfect spray can be obtained.

FAULTY SPRAY

If the spray flutters, it is caused by one of the following faults:

- 1. Insufficient material available. Check supply and replenish if necessary.
- 2. Loosen fluid nozzle (3). Tighten but without using undue force (100-120 in. lbs. torque).
- 3. Leakage at gland adapter (39) and needle seal (40). Tighten packing nut (43) if loose, and replace gland adapter and needle seal if necessary.
- 4. Fluid connection insufficiently tight or dirt on cone faces of connection. Correct as necessary.
- 5. Leaking cylinder air and/or inadequate pressure.
- 6. Inadequate fluid pressure.

IMPORTANT REGULATORY NOTE

Some Regulatory Agencies prohibit the operation of HVLP spray guns above 10 psi nozzle atomizing pressure. Users subject to this type of regulation should not exceed the gun inlet pressure indicated on the air cap and/or in these instructions. See Air Pressure Recommendations, Pages 9 and 10 and General Spray Instructions, Page 8. It is recommended that the nozzle test gauge shown above, be used to confirm actual nozzle operating pressure.

It may also be a requirement of some Regulatory Agencies that users have this air nozzle test gauge assembly available on site to verify that the gun is being operated within the limits of applicable rules.

ACCESSORIES (Optional)

MOUNTING BRACKETS

Use for automatic guns. Adjustable to any position. 18" bracket arm. One inch diameter bracket clamp hole for attachment to facility hardware.

54-380 Steel Bracket for automatic guns. Shipping. wt. 5 lbs. Part Sheet 1185



AIR NOZZLE TEST GAUGE ASSEMBLY

54-3935 for 95P, 97P, 95AP, and 97AP Nozzles.
54-3908 for 900 Series Nozzles.
54-4078 for Siphon Series Nozzles.
54-4345 for 90P Air Nozzle.
54-4356 for 93P Air Nozzle.
54-3902 for 91P and 92P Air Nozzles.
54-4066 for 94P Air Nozzle.

A CAUTION

Do not exceed 70 psi gun inlet pressure. Use air nozzle test gauge assembly to determine and verify exact nozzle operating air pressure.



Part No. 59-299 Gauge Only (Replacement)

NOTES

NOTES

WARRANTY POLICY

This product is covered by Carlisle Fluid Technologies' materials and workmanship limited warranty. The use of any parts or accessories, from a source other than Carlisle Fluid Technologies, will void all warranties. Failure to reasonably follow any maintenance guidance provided may invalidate any warranty.

For specific warranty information please contact Carlisle Fluid Technologies.

Carlisle Fluid Technologies is a global leader in innovative finishing technologies. Carlisle Fluid Technologies reserves the right to modify equipment specifications without prior notice.

DeVilbiss[®], Ransburg[®], ms[®], BGK[®], and Binks[®] are registered trademarks of Carlisle Fluid Technologies, Inc.

©2020 Carlisle Fluid Technologies, Inc. All rights reserved.

For technical assistance or to locate an authorized distributor, contact one of our international sales and customer support locations.

Region	Industrial / Automotive	Automotive Refinishing
Americas	Tel: 1-800-992-4657 Fax: 1-888-246-5732	Tel: 1-800-445-3988 Fax: 1-800-445-6643
Europe, Africa, Middle East, India	rope, Africa,Tel: +44 (0)1202 571 111dle East, IndiaFax: +44 (0)1202 573 488	
China	Tel: +8621-3373 0108 Fax: +8621-3373 0308	
Japan	JapanTel: +81 45 785 6421Fax: +81 45 785 6517	
Australia	Tel: +61 (0) Fax: +61 (0)	2 8525 7555 2 8525 7575

For the latest information about our products, visit www.carlisleft.com



SOLUTIONS FOR YOUR WORLD