

**THE GS MFG. LW05 LOW EMISSION GELCOAT/ X-GUN[®] APPLICATOR SYSTEM
MANUAL**

SAFETY PRECAUTIONS:

THE GS MFG. LW05 LOW EMISSION GELCOAT/ X-GUN[®] APPLICATOR SYSTEM IS A HIGH PRESSURE SPRAY SYSTEM AND MUST BE TREATED AS SUCH. YOU MUST NEVER PLACE YOUR HANDS OR ANY OTHER PART OF YOUR BODY IN FRONT OF THE SPRAY GUN WHEN THE GUN IS OPERATING. IT IS POSSIBLE TO INJECT THE GELCOAT UNDER THE SURFACE OF YOUR SKIN USING THIS SPRAY GUN, CAUSING A VERY PAINFUL AND HARMFUL WOUND. THIS IS TRUE FOR ANY SPRAY SYSTEM.

TO REDUCE THE CHANCES OF INJURY, SHUT OFF THE AIR VALVE ON THE BACK OF THE SPRAY GUN WHEN YOU ARE NOT SPRAYING, EVEN IF YOU STOP JUST LONG ENOUGH TO CHANGE MOLDS.

THE SECOND BIT OF ADVICE WE OFFER IS TO FOLLOW THE OPERATING INSTRUCTIONS STEP BY STEP.

DO NOT CONNECT THE AIR TO THE SYSTEM UNTIL YOU COMPLETE THE INITIAL OPERATING INSTRUCTIONS AND IT IS SAFE TO DO SO.

WEAR EYE PROTECTION AT ALL TIMES.

ALWAYS RELIEVE PRESSURE ON SYSTEM BEFORE REMOVING ANY HOSES, FILTERS, GUN ETC.

NOTE: OPERATOR RESPONSIBILITY

IT IS THE OPERATOR'S RESPONSIBILITY TO INSURE THAT THE GS MFG. LW05 LOW EMISSION GELCOAT/ X-GUN[®] APPLICATOR SYSTEM IS OPERATED SAFELY. LOCAL CODES AND OPERATING INSTRUCTIONS MUST BE FOLLOWED. EQUIPMENT OPERATORS SHOULD READ AND UNDERSTAND THE LOCAL CODES AND OPERATING INSTRUCTIONS BEFORE OPERATING THIS SPRAY SYSTEM.

NOTE: NEVER SUBMERGE X-GUN[®] IN ANY SOLVENTS

INTRODUCTION:

The LW05 gelcoat system you have selected is at the forefront of low emission two component spraying system technology. Yet it is the easiest to use in the shop.

The most impressive feature is the X-GUN[®] spray gun itself. This is a lightweight gun with an operator friendly air trigger. The gun is CNC machined from solid aluminum. The gun is a well-balanced piece of machinery that is simplicity in itself.

Each GS Manufacturing LWA05 gelcoat system is thoroughly pressure checked using dibutyl phthalate on the gelcoat side and water on the catalyst side. The purpose of this quality control procedure is to insure that all the components of your system function properly and that there are no leaks in the system. Because of this quality control procedure it is mandatory to follow the operating instructions step by step.

THE SPRAYING SYSTEM

The spray gun consists of a machined aluminum body with totally independent gelcoat and catalyst passages, each of which is terminated with a fluid valve at the spray head of the gun. These valves are opened using a unique dual rack and pinion design actuated by the air cylinder which provides fluid shut-off when the gun is not in operation. The valves are simultaneously operated by the air trigger assembly.

A pin aligned tip plate is attached at the outlet of the spray gun. This plate holds the fluid spray tip which determines the respective fluid spray patterns, as well as the flow rates of gelcoat and catalyst sprayed. Under normal conditions this tip plate is the only part of the gun you will have to remove and disassemble for cleaning.

THERE IS AN AIR SHUT OFF VALVE AT THE REAR OF THE GUN. THIS VALVE IS THERE FOR YOUR PROTECTION. WHEN THE GUN IS NOT BEING USED, THE VALVE SHOULD BE IN THE OFF POSITION.

SYSTEM ASSEMBLY

1. This system is disassembled for shipping, requiring some assembly. Simply attach hoses to corresponding fittings. Each hose fitting is a different size and will only go on one way.
2. Mount the slave arm and catalyst pump to material pump using the nuts and bolts supplied.
3. Attach catalyst siphon hoses to pump making sure hose with filter screen is attached to the fitting on the bottom of the catalyst pump.
4. Attach the material siphon hose to the fitting on the bottom of the material pump.
5. Make sure all hose connections are secure before loading and priming the unit.

AIR REQUIREMENT: 100 + PSI @ 10-15 CFM

INITIAL START-UP/ PRIMING OF PUMPS**1. GELCOAT:**

Mount the unit on a 5 gallon pail or install the siphon hose/ screen assembly into the pail or drum. Add dibutyl phthalate to the oil cup reservoir located on the fluid section of the material pump.

2. CATALYST:

Pail mounted: Fill quart bottle.

Cart or wall mounted: Siphons from original container.

3. AIR:

Turn all air regulators to zero (counter-clockwise) before connecting the air supply.

4. Connect the air supply to the system.

PRIMING THE GEL AND CATALYST PUMPS

1. Remove the X303 fluid cap assembly from front of gun by unscrewing X304-07 retaining ring.
2. Remove the pin (on top of the gel pump) that connects the slave arm to the slave shaft out of the top of the gel pump motor. Pull the arm to the side--away from the slave shaft.
3. While holding the trigger on the gun open, aim into a disposable container and slowly turn the knob on the air regulator to the pump clockwise until the pump starts to stroke. Pump gelcoat through the pump, hoses and gun until you have a solid stream of gel out of the gun. (No air in the gel). Once all air is purged out of the system release trigger and shut off safety valve on back of gun.
4. Wipe the face of the gun clean.
5. Remove the stainless steel catalyst hose from the gun.
6. Using short strokes, pump the catalyst arm to fill the catalyst hose. Continue until you have a solid stream of catalyst out of the hose.
7. Reconnect the MEKP Hose to the gun.
8. Pump the arm by hand until 20 - 30 PSI shows on the catalyst gauge. Replace S110 pin to connect slave arm to the air motor. The fluid pressure on the catalyst pump will stabilize at approximately 20 psi. once spraying begins.

Continued

9. Install the X303 fluid cap assembly and X304-07 retaining ring making sure the face of X300-07 fluid plate is clean. Always apply a petroleum based lubricant to the O-rings on the X303 fluid cap assembly and to the threads on the X300-07 fluid plate for easy disassembly

OPERATION/ SPRAY PATTERN ADJUSTMENT

1. VERY IMPORTANT- NEVER OPERATE GUN WITHOUT HAVING 20 PSI. OF CATALYST ATOMIZING AIR FLOWING THRU THE GUN.

2. Turn the knob on the catalyst atomizing air regulator clockwise until the guage reads 20 psi. Air should be flowing out of the catalyst nozzle on the side of the X303 fluid cap. This air breaks up the catalyst into a fine mist and should remain on at all times.

3. Turn the knob on the shaping air regulator clockwise until the guage reads between 15-20 psi. Air should be flowing from the series of holes around the X301 fluid tip. This air breaks up the tails in the spray pattern and should remain on at all times.

4. Adjust the material pump air regulator high enough to create a solid fan of gel. Excessive pump pressure will create unwanted overspray and emissions. The lowest level of emissinons will be achieved by having the gun apply an acceptable spray pattern at the lowest pressure on the pump and shaping air regulators. The air regulator settings in this manual are starting points, it is up to you to fine tune these settings to achieve the lowest possible emissions. The pressure required for a good gel fan depends on the temperature and viscosity of the gelcoat. Contact your material supplier to find the optimum temperature in which to apply the gelcoat. It may be necessary to heat the gelcoat before applying. Normal range of pressure during spraying is a 40 - 80 psi reading on the material pump regulator. The catalyst pressure will stabilize at approximately 20 psi.

5. Make a test for gel time.

6. Move the MEKP pump on the slave arm to increase (closer to the gel pump) or decrease the MEKP flow. Always move the top and bottom pins when relocating the MEKP pump.

DAILY SHUT-DOWN

1. Turn air valve at the gun off. It is necessary to leave shaping air and catalyst atomizing air on to prevent material from entering these ports during cleaning.
2. Remove X304-07 retaining ring and X303 fluid cap assembly and place in a suitable solvent.
3. Using a brush or rag clean face of X300-07 fluid plate with a suitable solvent. (NEVER SUBMERGE GUN IN SOLVENTS).
4. Insert F1-PL night plug into center port (material port) on X300-07 fluid plate. Note- port is drilled on angle. Leave gun pointing down.
5. Remove air supply.
6. Unplug heater if necessary.
7. Clean and blow off with air gun the X303 fluid cap assembly, X301 spray tip, and X304-07 retaining ring. Place X304-07 retaining ring back on gun to protect threads from being damaged. Place X303 fluid cap assembly, X301 spray tip in a safe place until system is ready to use again. If you soak the X303 fluid cap assembly overnight in solvent remove the LW203-06 O-rings.

DAILY START-UP

1. Remove any air from catalyst siphon hose. Slowly open bypass valve (red handle) on catalyst pump. Remove S110 pin from top of air motor. Using short strokes on the slave arm, recirculate catalyst back into bottle until no air is visible in siphon hose. Shut off bypass valve and pump the arm by hand until 20 - 30 psi shows on the catalyst gauge. Replace S110 pin to connect slave arm to the air motor.
2. Remove F1-PL night plug and X304-07 retaining ring from gun and install X303 fluid cap assembly with X301 spray tip to front of gun. Note- always apply a small layer of petroleum based lubricant to O-rings on X303 fluid cap assembly and X300-07 fluid plate threads for easy disassembly.
3. Attach air supply.
4. Make short test shot to check spray pattern and verify catalyst atomization.

MONTHLY MAINTENANCE

1. Clean all filters.
2. Check level of oil cup reservoir located on the fluid section of the material pump and add dibutyl phthalate if needed.