

USER MANUAL FOR HVLP SYSTEMS

FUJI

CONTENTS

Safety precautions	1 - 3
Air Control Valve	4
Spray patterns	5
Pattern size	6
Spraying techniques	7
Nozzle, jet selection	8
Viscosity	9
Viscosity guide	10
Cleaning	10
Pressure pot use	11
Finish problems	12
Spraygun problems	13
Installing a needle	14
Adjusting a needle	15
Spraygun parts diagram	16
Service information	17 -18
Warranty information	19
CE Declaration	20

Please read these instructions carefully before using the equipment



GROUNDING

This appliance must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord having an equipment-grounding conductor and grounding plug. The plug must be inserted into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

This appliance is for use on a nominal 120-volt circuit and has a grounding attachment plug that looks like the plug illustrated. Make sure that the appliance is connected to an outlet having the same configuration as the plug.

Please Note* For UK, Australia, Asia etc. your voltage will be 240v. Check the label on the base of the turbine to ensure your unit is at the correct voltage for your location.



ELECTRIC SHOCK HAZARD

Improper connection of the equipment grounding conductor can result in the risk of electric shock.

- Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded.
- Use only a 3-wire extension cord that has a 3-blade grounding plug and a 3-slot receptacle that accepts the plug on the product.
- An undersized cord results in a drop in line voltage and loss of power and overheating.
- Do not modify the plug provided with the appliance. If it will not fit the outlet, have a proper outlet installed by a qualified electrician.
- To reduce the risk of electric shock or injury, do not expose to rain.
- Never allow unit to freeze.
- Always store the unit inside in a dry location. Store on the floor if in a basement a basement setting.
- The operator must wear shoes and the floor must not be wet.
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Prop 65 Warning for California Residents

WARNING: This product may contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.



FIRE AND EXPLOSION HAZARD

Turbine must not be used in an area contaminated by volatile or flammable materials since sparking can be expected in the normal operation of the motor. This could ignite the contaminants causing a dangerous explosion.

- Do not spray flammable or combustible materials near an open flame or sources of ignition such as cigarettes, motors, and electrical equipment.
- Keep spray area well-ventilated. Keep a good supply of fresh air moving through the area. Keep turbine in a well ventilated area.
- Do not spray turbine.
- Turn off and disconnect power cord before servicing equipment.
- Do not smoke in the spray area.
- Do not operate light switches, engines, or similar spark producing products in the spray area.
- Keep area clean and free of paint or solvent containers, rags, and other flammable materials.
- Fire extinguisher equipment shall be present and working.
- Sprayer generates sparks. When flammable liquid is used in or near the sprayer or for flushing or cleaning, keep sprayer at least 20 feet (6 m) away from explosive vapors or spraying area.
- Ensure ground prongs are intact on sprayer and extension cords.
- Always disconnect unit from main supply when filling the paint container.
- Never use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in equipment with aluminum wetted parts. Such use could result in a serious chemical reaction, with the possibility of explosion. Consult your fluid suppliers to ensure that the fluids being used are compatible with aluminum parts.



TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read MSDS (Material Safety Data Sheet) to know the specific hazards of the fluids you are using.
- Always wear appropriate gloves and eye protection
- Always wear a respirator or mask. Read all instructions of the respirator or mask to ensure that it will provide the necessary protection against the inhalation of harmful vapors. Please also check with the local jurisdiction.
- Paint, solvents, insecticides and other materials may be harmful if inhaled.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guideline.
- Do not stop or deflect fluid leaks with your hand or body.



EQUIPMENT MISUSE HAZARD

Misuse of equipment can cause serious injury or death.

- Never aim the spray gun at another person or animal. In the event of injury, seek expert medical advice immediately.
- Do not operate or spray near children. Keep children away from equipment at all times.
- Do not overreach or stand on an unstable support. Keep effective footing and balance at all times.
- Stay alert and watch what you are doing.
- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not kink or over-bend the hose.
- Do not use the hose as a strength member to pull or lift the equipment.
- Do not cover turbine case as this will restrict air to the intake and result to overheating and premature failure of the motor.
- Do not carry turbine while spraying.
- Check the hose, hose connectors and power cord daily. Any worn or damaged parts should be replaced immediately.
- Use only genuine Fuji Spray replacement parts.
- It is normal for the turbine air outlet (manifold) to become hot during use, please allow your Fuji Spray turbine to cool for a few minutes before removing the hose from the turbine manifold.

FILTER(S)

The Q-Series turbines use just one large filter. The turbine case does not have to be taken apart to replace the filter. To remove, simply turn the turbine on its side and pull the filter out. Wash in solvent and dry before replacing. The filters are a friction fit. When replacing, push the filter in by hand and finish up by using a screwdriver through the square holes to lever the filter into position. The filter must fill the entire filter enclosure and always be FLUSH with the base of the turbine case. The Super Model uses 2 filters, one fine and one coarse. Looking from the front of the turbine please insert the fine filter to the left side (near the 'F' of Fuji) and the coarse to the right side. It is important to keep the turbine as far away as possible from the spraying area (and workshop dust). If the filters become badly clogged, cooling air will be restricted - this may cause serious damage to the motor.

HOSE CONNECTION

Connect the end of the hose with the female connector to the turbine air outlet. To connect the hose to the gun, slide back the quick-connect collar and push this onto the hose connector (Part .2029). To disconnect from the gun, slide back the collar to release the quick-connect from the hose connector. **ALWAYS TURN OFF THE TURBINE BEFORE DISCONNECTING THE GUN FROM THE HOSE - THEN OPEN THE CUP TO RELEASE THE PRESSURE.**

Please do not leave the cup under pressure as this causes paint to travel up the pressurizing tube (Part. 2024) and into the check valve.

On a warm day, the hot air passing through the gun handle may make it uncomfortable to hold. The Fuji spray gun has two air intakes. Switching the hose connector (Part. 2029) with the blanking screw (Part. 2011) will enable you to connect the hose to the upper air intake. The hot air will travel along the top of the gun leaving the handle more comfortable to hold. You may want to pass the hose over your shoulder.

AIR CONTROL VALVE

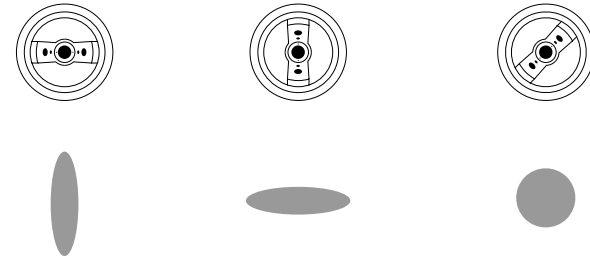
The air control valve provides you with a means of controlling the air flow through the gun. It is far superior to having a variable speed switch on the turbine because you will often want to adjust the air without having to walk over to the turbine. Plus, it does not cause overheating of the motor which happens when the speed of the turbine motor is reduced. This is because turning down the speed, also reduces speed and efficiency of the cooling fan. There is one thing to remember about the air control valve - it is the '**last in the chain**' of operations after 1) Thinning the paint 2) Adjusting the shape and size of the spray pattern 3) Adjusting the flow of paint through the gun. **After** performing these operations, you should spray a few passes onto a scrap piece of plywood or cardboard. This will allow you to determine if the paint (generic word for any type of coating) levels nicely. If there is 'orange-peel' then you must thin the product more. It is no use to turn down the air to remedy orange-peel. Once the gun is producing a perfect finish with full air, you may then experiment with turning the air down until bounceback is reduced to a minimum. However, if orange-peel results, you have no option but to turn the air up again a slight amount. With heavier paints (such as latex) spraying should be done with the valve fully open (or even removed). When excessive 'blowback' or overspray is a problem, turn the lever to reduce the amount of air. To prevent runs when reducing the air, you may have to reduce the amount of material (fluid adjusting screw Part 2019). The spray-gun is a 'bleeder' type gun, this means that air flows constantly through the gun. The air control valve has been modified so that the air cannot be shut-off completely as this could cause overheating and shorten the life of the motor.

GETTING STARTED

Your Fuji Spraygun has been adjusted at the factory and is ready for spraying. To clean out any impurities that may have accumulated during assembly or shipping, we recommend spraying a small quantity of clean paint thinner through the gun. Before tackling any serious spraying, experiment with the gun on a scrap piece of wood or cardboard until you become familiar with all the controls.

Always start with the air control valve fully open.

CHANGING THE SHAPE OF THE SPRAY PATTERN



Turn the air nozzle until it clicks into the horizontal position. This setting produces a vertical pattern useful for spraying from side to side. Set the nozzle in a vertical position. This setting produces a horizontal pattern, useful for spraying up and down. Now try setting the nozzle at a 45° angle. This setting produces a round pattern useful for spraying thinner objects. Remember to turn down the amount of paint when you switch to a smaller round pattern, otherwise you will find that there will be too much paint concentrated in one spot. To test, try turning the fluid adjusting screw (part. 2019) clockwise until you cannot pull the trigger. Then unscrew it a little until a small amount of paint material comes out of the jet when you depress the trigger. This results in a small circular pattern. If you continue to depress the trigger and move along your workpiece you will get a fine line. From 6" away this will give you a pattern about 1" - 2" in diameter. This would be handy for spraying thin spindles in a chair for instance. Then place the nozzle to where it almost touches the test board and the pattern becomes extremely small - similar to an airbrush. Try writing your name with the gun. If you get runs then you will have to adjust the fluid adjusting screw again at the back of the gun. This type of technique is handy for repairs and touch-up. To obtain more coverage with a fuller spray, unscrew the fluid adjusting screw. Experimenting like this enables you to become familiar with your Fuji spraygun.

CHANGING THE SIZE OF THE SPRAY PATTERN

If you are familiar with high pressure sprayguns, please read this section very carefully. The method we use to adjust the size of the spray pattern is very different to what you are used to. The principal is simple... The air nozzle is backed by a spring and is 'floating'.

Winding the spraycap **IN** results in a **LARGER SPRAY PATTERN**.

Winding the spray cap **OUT** will result in a **SMALLER SPRAY PATTERN**.

The standard position is shown in Fig A. The **tip of the fluid jet** should be **flush with the nozzle**. Winding out the spraycap (counter-clockwise) causes more air to pass through the center hole and less to the horns. The result is a smaller pattern. (Fig B). When the spraycap is screwed in, air is cut off from the center hole in the nozzle. This redirects air to the horns resulting in a wider fan pattern. (Fig C).

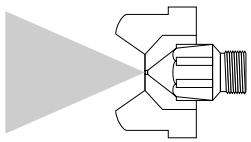


Fig. A

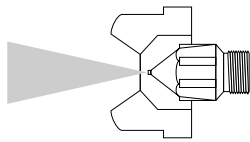


Fig. B

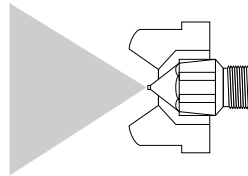


Fig. C

CAUTION: DO NOT TURN THE SPRAYCAP ALL THE WAY IN (FIG. C). THIS BLOCKS AIR OFF COMPLETELY FROM THE CENTER HOLE AND RESULTS IN A VERY LARGE SPRAY PATTERN WITH TOO MUCH OVERSPRAY.

HOW TO PREVENT PAINT ENTERING THE GUN

A few very simple rules must be followed in order to keep the gun clear of paint. **No paint or fluids should ever be in the gun body at any time.**

Upon stopping spraying for any reason, turn off the turbine and allow it to die down. The hose must never be disconnected when the turbine is running. To do this would instantly release the pressure out of the gun body yet there would still be pressure in the cup. This pressure is enough to force paint up the pressure tube into the spraygun. **Only air should pass down the pressure tube.** No paint will travel up the tube if the rules are followed. **Once the turbine has come to a full stop, gently open the lid of the cup to release the pressure inside.** If you intend to leave the spraygun for a while, you don't have to drop off the cup, simply slide the lever over to allow the pressure to escape and close it again. Then **hang** the up the gun - use any type of hook for this. **Do not stand the gun** on a bench or even the floor because it will always be prone to falling over which could damage the spraygun and cause paint to flow up the pressure tube and into the spraygun.

If paint does enter into the pressure tube, stop spraying the first chance you get and turn off the turbine. When it has stopped completely, open the cup to release the pressure. Remove the pressure tube/valve and soak it in thinner for a while. Then shake vigorously back and forth to clean out the check valve. Finally, test by blowing through the tube. You should be able to blow one way but not the other. It is advisable to have a few pressure tubes on hand for

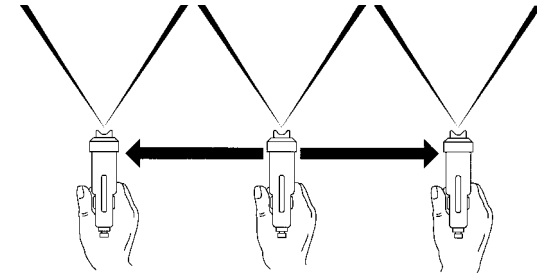
emergencies. Any paint in the pressure tube, or the nipples the tube is attached to, will cause reduced amounts of paint through the gun. This is because the pressure is being restricted through the nipples by the paint blockage. The symptom will be little or no paint and the reason will always be the nipples, tube or check valve being clogged or semi-clogged with dried paint.

For more details on this subject, please see the section on Spraygun Problems later on in this User Manual.

ACTUAL SPRAYING TECHNIQUES.

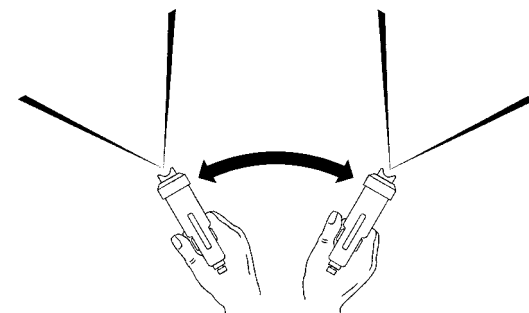
The spraygun should be held perpendicular to the surface at all times. **HOLD THE GUN NO MORE THAN 8" (20cm) AWAY FROM THE SURFACE TO BE PAINTED.**

CORRECT METHOD



Start moving the spraygun in the direction you want to spray and press the trigger. Between each successive pass, overlap by about a quarter.

INCORRECT METHOD



GUIDE TO NEEDLE, NOZZLE, AND JET SELECTION

The fluid jet and needle MUST always match exactly. However, the spraycap/air nozzle may be one size up or down from the norm. The sizes No.3 and 4 setups are both ideal for all fine finishing. 4 different setups are available as accessories. Generally speaking, the quality of atomization and finish suffers as you go to the larger size setups (No.5 and 6). Please note that the chart offers you a starting point only as to the setup size to be used. The best way to decide is by experimentation. If you are using the No. 3 setup and wish to spray faster, wetter then switch to No. 4.

IF YOU DO NOT INTEND ON SPRAYING WALLS & CEILINGS THEN THE ONLY TWO SETUPS YOU WOULD EVER NEED WOULD BE THE #3 AND THE #4.

No. 2 - .7mm (.027") FINE

For artists, very fine work, small surfaces, touch-up, shading. STAINS, THINNER, ZINC, CHROMATE, FINE VARNISH, LACQUERS ETC.

No. 3 - 1mm (.039") FINE TO MEDIUM OUTPUT

Most 'fine-finishing'. WATER-BASED LACQUERS, NITROCELLULOSE LACQUERS, SEALERS, CELLULOSE, ACRYLICS, SYNTHETICS, POLYURETHANE, STAINS, VARNISH, GLITTER PAINTS, PRIMERS .

No. 4 - 1.4mm (.055") MEDIUM OUTPUT

Similar to No. 3 but more coverage. Especially suitable for AUTOMOTIVE ENAMELS, Nitrocellulose LACQUER and LATEX where finer finish is required such as louver doors, trim, cabinets (see section below about Latex). Also good for VARNISHES and OIL-BASED PAINTS.

No. 5 - 2mm (.079") HIGH OUTPUT

Larger surfaces, thick layers, spotted effects. SEALERS, VARNISH, POLYURETHANE, OIL BASE PAINTS, ENAMELS, EPOXY, PLASTIC, ADHESIVES, FLOOR PAVING PAINTS, LATEX (on walls) SPLATTER PAINTS ETC.

No. 6 - 3mm (.110") EXTRA HIGH OUTPUT

Very heavy flows, fast coverage. STONE FINISH PAINTS, TEXTURE COATING, INDUSTRIAL PRIMERS, SPLATTER PAINTS, LATEX (on walls, ceilings) ETC.

A WORD ABOUT LATEX

Most latex paints do not spray well or flow out nicely but by following a few general rules, a professional finish can be achieved. Please do not confuse latex with the newer water-based coatings which spray beautifully. For work such as cabinetry or trim, our equipment can be used successfully with latex paint. The latex will have to be thinned with WATER - approximately **20-30% depending on the brand of paint.** and preferably an additive used to give it more sprayability. One product available is FLOETROL from the FLOOD Company in Ohio. In the USA Call 1-800-321-3444 for your nearest supplier. (In the U.K. 01206-797556).

Although it is possible to use our equipment for house painting (walls), and many end users do, we feel that an airless gun or power roller is better suited to that kind of job. However, if you decide to do this kind of work, you will need at least the #5 setup.

VISCOSITY

Follow the viscosity guide chart. You will eventually learn to thin the material by experience. Traditionally, lacquers were thinned 50/50 even for high pressure spraying but this much thinning is not necessary. However, coatings manufacturers are reformulating constantly so it is always advisable to check with them. Thinning a product excessively causes more overspray as well as runs. Stringent air quality controls in some geographic locations may prohibit reducing by more than 30%.

Remember, when you buy a can of paint, lacquer, polyurethane, varnish etc. over the counter, it will be formulated for brushing. That means, it will be too viscous (thick) and will require thinning to spray successfully.

When spraying with a conventional system, it is estimated that up to 90% of what you spray evaporates, mists and floats about in the surrounding air. Most conventional compressor type systems atomize the material at 45 - 60 PSI with very low CFM. Please keep in mind that this is a generalization - there are many variables.

The Fuji Turbine System atomizes the material with a constant high volume of air flow. Unrestricted, turbines produce 100 CFM at low pressures (5 - 8 PSI). The low pressure allows the material being sprayed to be laid on gently and not blasted on. Lower velocity translates to less bounce-back and less overspray. Don't forget that once you have adjusted the viscosity and size of the spray pattern, you must then adjust how much paint flows through the gun. Then you should try reducing the air pressure at the air control valve to reduce bounceback and overspray.

VISCOSITY GUIDE

To test the viscosity of the paint material, fill the viscosity cup to the brim and time how long it takes for the liquid to empty out through the hole. We recommend you experiment to find the ideal viscosity for your application and record the information for the next time.

The chart below is an approximate guide to thinning. Note that the viscosity cup has a hole in the bottom. To check viscosity, dip the cup into the thinned paint and time how long it takes for the paint to run out of the cup.

Cellulose	18 - 20	Cellulose Primers	18 - 20
Lacquers	18 - 20	Sanding Sealers	20 - 22
Enamels	20 - 25	Stains	Undiluted
Latex	40 - 50	Creosote	Undiluted
Oil-based	20 - 25	Polyurethanes	15 - 18

Remember, as a general rule, most 'paints' you purchase over the counter were formulated for using with a brush and are too thick to spray successfully without thinning. This includes all lacquers, enamels, oil-based paints, latex etc. There is usually no mention of thinning for spraying so you will have to experiment. We suggest around 25% to begin with but this may contravene the air quality control rules for your location, so please check this by calling the paint manufacturer. The solvent used for thinning is usually the solvent mentioned on the can in the instructions for 'cleaning the brushes'. However, if you are unsure, please check with the coatings manufacturer.

HVLP spraying is more friendly to the environment than most methods of spraying. It reduces appreciably the amount of unnecessary misting and fogging (overspray) associated with high-pressure spraying. Spraying with Nitrocellulose lacquer can be **hazardous. The lacquer, fumes and overspray are toxic, flammable and explosive.** If spraying must be done inside an enclosed area, **ventilate well.** Spray close to an open window or door and situate a fan to draw out the fumes (an explosion-proof motor may be necessary). PLEASE CHECK WITH THE LOCAL AUTHORITY HAVING JURISDICTION IN THIS MATTER.

CLEANING

To clean the gun after each use, empty all paint from the cup. Use a solvent soaked rag to clean the residue in the cup and on the metal fluid tube. Then, spray some clean solvent through the gun into a clean rag. Repeat if necessary until the inside of the gunblock, metal fluid tube etc. is clean. Use the wet rag to wipe off the air nozzle, and tip of the jet. Don't forget to open the cup to release the pressure so the spraygun can be left for a long period of time.

If this type of cleaning is done while the paint is still wet in the gun, then this should be all that is necessary to keep the gun clean enough for next time. Do not leave liquids in the cup. PLEASE DO NOT USE A WIRE BRUSH OR ANYTHING METAL TO CLEAN THE GUN OR CUP AS THIS WILL CAUSE DAMAGE.

Some companies manufacture what is called a 'gun and brush cleaner' liquid made specifically for cleaning the spraygun/parts. Please check with your paint supplier.

CAUTION: Never soak the complete spraygun in solvent as this removes the grease from the parts and distributes thinned paints throughout the air passages. It may however, be necessary sometimes to soak the front barrel in thinner. Please remove the nylon spraycap before soaking.

PERIODIC STRIP DOWN CLEANING

Tools required: 3/4" wrench, adjustable wrench, needle nosed pliers, jet wrench.

If the spraygun is cleaned by flushing through solvents as described above, it should not be necessary to strip down the whole spraygun. However, to completely strip down the spraygun, first remove the fluid adjusting screw and spring. Pull on the trigger and remove needle (use needle nosed pliers to gently pull it out). Remove spraycap then the plate spring. Use the special jet wrench to remove the fluid jet. Loosen the fluid coupler jamb nut then turn out the fluid coupler. At this stage you can remove the gun block. Should the block be tight, screw the fluid coupler into the front hole of the block (in place of the fluid jet) and turn out the block. Soak these parts in solvent and clean with a soft bristle brush. DO NOT use metal objects to clean parts. **DO NOT disassemble the cup assembly - your cup has been sealed at the factory to prevent leakage.**

To reassemble, first oil or grease all moving and threaded parts. Replace gun block and all parts in reverse order. CAUTION: Do not store the gun with the cup clamped down hard as this will cause the gasket to flatten out. Do not lay the gun down on its side with liquid material in it.

PRESSURE POT USE

To use the gun with a pressure pot, remove the cup and the pressurizing tube. Connect your material line to the fluid coupler on the gun. Because you are using air from the turbine, you must block off the air that would normally go from the pressure pot to the gun. A cap must be placed over the nipple to prevent air escaping - this plastic cap - Part. 2023B is available from Fuji. The Fuji spray gun has two air intakes - attach the turbine hose to either of these intakes in the regular way. A COMPRESSOR IS NEEDED TO PRESSURIZE THE POT.

Set the compressor to between 6-8 PSI. This is enough to push the paint material up to the gun. For spraying at greater heights (over 8 feet), more fluid pressure may be necessary. The fluid pressure should never be set at more than 20 PSI. If you find that higher pressure is needed we advise you to check the fluid tube for any paint blockage.

FINISH PROBLEMS

ORANGE PEEL - If the finish is rough and resembles orange peel then the material is too thick. It will not atomize properly and the surface will be spotty. To correct this, make sure that the next coat applied is full and wet. If severe, add a retarder. This will slow the drying time allowing the material to flow out. NOTE: With the newer water-based materials 'orange peel' is usually a result of spraying on too thick a coat. **Try spraying extremely THIN, but WET coats.** With most other coatings, orange peel is caused by material being too thick or not enough atomizing power. This is why we suggest leaving the air control valve fully open when experimenting with a new coating material, otherwise it will cause confusion. If the the air control valve is fully open (or perhaps removed for Latex spraying) then orange peel can only be one cause - the material is too thick. Use of a retarder is recommended with nitrocellulose lacquer (lacquer retarder), Penetrol for oil-based paints and as mentioned previously, Floetrol for latex house paints.

GRITTY FINISH - If the material is too thin, it is likely to run or be over-atomized producing a rough gritty finish.

BLUSHING - Blushing is the common term used when the finish looks cloudy (sometimes also called blooming). It is caused by moisture and is especially a problem when operating high pressure spray equipment. The moisture comes from the compressor. This problem does not usually occur when using the Fuji turbine. The reason is that the air from the turbine is warm, dry and uncontaminated. However, it is possible on very humid days to encounter slight blushing. Using a retarder will often allow moisture to escape preventing the milky look.

FISH EYES - If you are refinishing furniture or pianos, fish eyes could become a problem. The cause is usually silicone from polish which has been liquified by the paint stripper that has now soaked into the bare wood. This silicone prevents the lacquer from adhering to the wood. One way to sometimes correct this is to seal in the silicone by misting on two or three light coats of lacquer. Then spray on a regular wet coat. We *do not* recommend the use of 'Fish-Eye Drops' which is essentially liquid silicone. Silicone will only contaminate the gun even further. Anything that comes into contact with the silicone becomes contaminated - such as; rags, aprons, bench tops, gloves.

SPRAYGUN PROBLEMS

NO PAINT (OR VERY LITTLE PAINT)

THIS IS THE MOST COMMON PROBLEM ENCOUNTERED. The air passing through the plastic tube to pressurize the cup is blocked. To locate where the air blockage is, open the cup. Remove the pressure tube from the nipple under the barrel only. Blow down the tube - it should feel like blowing freely through a drinking straw. If it's clear, it's ok. If there is resistance, either the checkvalve or the nipple on the cup lid is clogged or semi-clogged. Clean at both these points A pipe cleaner can be used for cleaning the hole in the nipple. Replace the pressure tube/valve if necessary. Then, connect the gun to the hose and turn on the turbine. Feel the air passing through the nipple under the barrel - it should feel like someone is blowing through a straw. If not much air pressure is evident, clean this nipple too or even remove it to get behind it. Once this nipple is clear, re-attach the pressure tube and test with thinner or water. If air can pass freely through the nipple under the barrel, through the checkvalve and into the cup, the gun will spray perfectly (assuming that the paint is thinned properly) Please see 'How to prevent paint entering the gun' - Page 6.

- The pressurizing tube and/or nipples are blocked with paint.
- The cup is not tightened down sufficiently by the quick-release lever or the cup gasket is worn and leaking air.
- The cup is empty
- The metal fluid tube is blocked with paint - very rare.

UNEVEN SPRAY PATTERN

One of the holes in the air nozzle may be blocked. Or, the paint could be dirty and is partially blocking the fluid jet. Remove the air nozzle and clean by soaking in solvent and using a soft bristle brush or rag. NEVER use metal objects to clean holes in the spray cap nozzle.

LEAKAGE

If paint material comes out of the fluid jet **without** pulling back the trigger...

- The working length of the needle is too short - see Needle Assembly Too Short. **This is the most common reason.**
- The needle is not seating in the fluid jet properly
- The needle seal may be too tight preventing the needle from moving
- Foreign matter could be trapped between the needle and the jet.
- The needle or fluid jet could be damaged or worn.

.LACK OF MATERIAL - See also... NO PAINT

- Cup is almost empty.
- Too thick a material – try thinning.
- Larger needle/nozzle/jet setup must be installed.

THE TRIGGER IS SLUGGISH

- The trigger pin could be binding in the trigger pin guide bushing. To test, remove the fluid adjusting screw, spring and the trigger itself. Try sliding the trigger pin in and out of the bushing. It should be smooth and unrestricted. If tight, soak the pin and bushing for a short while in thinner. Apply oil to lubricate. This should resolve the problem.
- The needle seal is too tight - see ADJUSTING THE NEEDLE SEAL. Page 11

PAINT AT THE AIR NOZZLE HOLES

- The fluid jet is loose and material is leaking around it - Tighten with the jet wrench.
- The needle seal is too loose and paint is leaking out through the rear of the gunblock - see ADJUSTING THE NEEDLE SEAL.
- Paint is entering the gun via the pressure tube and being blown through the barrel to the air nozzle - see HOW TO PREVENT PAINT ENTERING THE GUN. Page 6

GUN SPRAYS IN A PULSATING MANNER

- The needle seal has worn a little or is loose. Tighten.
- The cup is almost empty.
- The cup lid is not tight - air is escaping.
- The clear plastic pressure tube is leaking air. Replace.

INSTALLING A NEEDLE ASSEMBLY

Tools required: Needle-nosed pliers, Jet wrench, Needle seal adjuster, 3/8" and 5/16" open end wrench.

Remove the fluid adjusting screw and spring. Pull the trigger back to remove the needle. Use needle nose pliers to grab the needle drum at the rear of the needle. Fuji supplies the needle assembly complete with the locking nut and drum. Carefully insert the needle through the hole in the gun block. It may be fairly tight due to the friction of the teflon needle seal. Insert the spring and screw in the fluid adjusting screw. Before installing the fluid jet, see ADJUSTING THE NEEDLE SEAL and then if necessary see NEEDLE ASSEMBLY TOO SHORT.

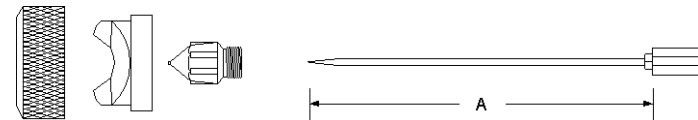
ADJUSTING THE NEEDLE SEAL (PACKING)

Like other spraygun manufacturers, we use 'stock' stainless steel rod for the needle. This rod can differ in diameter slightly with each run. This means that when you change say, a #3 for a #4 needle. One could be slightly oversized diameter and one slightly undersized. This necessitates adjusting the needle seal.

The needle seal bushing (packing) must be tight enough to prevent any leakage of paint material into the gun. It should however, allow the needle to glide smoothly through it. If this bushing is too loose often a 'pulsating' of the spray pattern will be seen. Insert the needle seal adjusting tool (with teeth pointing downwards) over the needle. This is the tubular-shaped tool that comes with the complete Fuji system. Locate the slots in the needle seal nut and tighten the needle seal while continually pulling the trigger. (If the slots are clogged with paint, use a sharp screwdriver to clean out the slots). Once the needle is grabbed by the seal, back off the screw a very slight amount. The needle seal is adjusted perfectly just short of the point where the needle sticks. Another guide is to grasp the end of the needle and shake it firmly but gently from side to side - *there should be no play* - but the needle should still slide smoothly without sticking when the trigger is pulled. The needle seal should never need replacing.

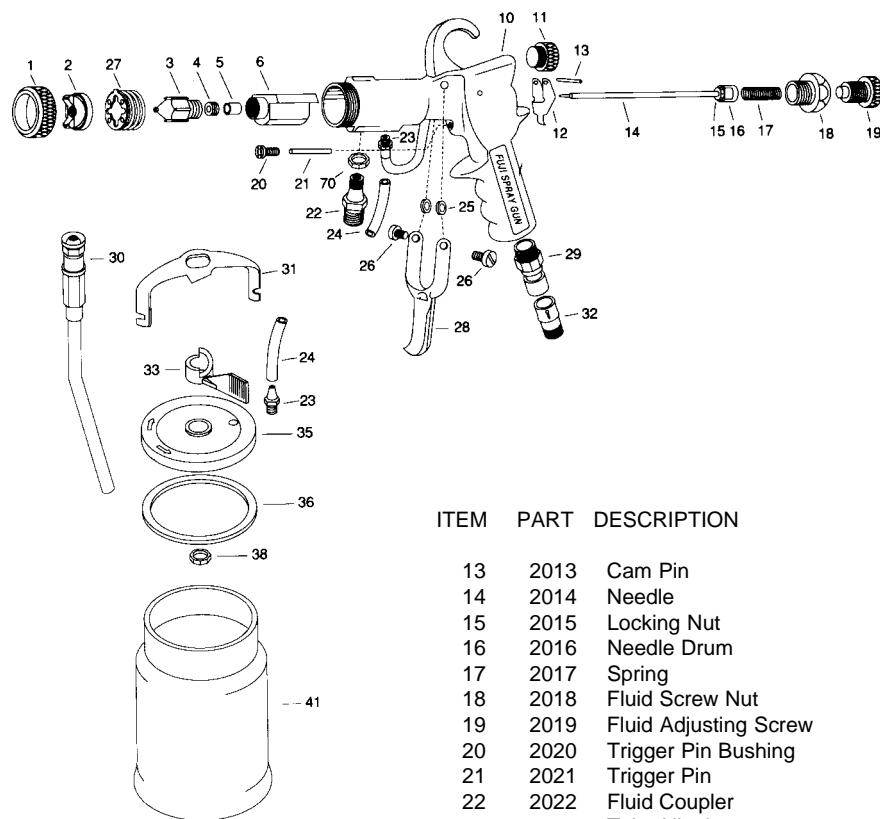
NEEDLE ASSEMBLY TOO SHORT

If the needle is not reaching far enough into the fluid jet, remove it. To adjust length 'A' first loosen the needle locking nut, then turn the needle drum counter-clockwise about 1/2 turn. Carefully retighten the locking nut. Remember, even 1/2 turn of the needle drum lengthens the working length of the needle by quite a large amount. A good tip is to only adjust it 1/2 turn maximum and then test. If this is not enough then simply repeat the procedure. When the needle is the correct length, there will be no leakage of paint from the jet when the trigger is not depressed. The trigger action should be smooth and free.



NEEDLE ASSEMBLY TOO LONG

If the needle assembly is lengthened too much, the trigger pull distance will feel too short. To remedy, reverse the above procedure.



ITEM PART DESCRIPTION

1	2001	Spray Cap
2	2002	Air Nozzle
3	2003	Fluid Jet
4	2004	Needle Seal Nut
5	2005	Needle Seal
6	2006	Gun Block
10	2010	Gun Body
11	2011	Blanking Screw
12	2012	Cam

ITEM PART DESCRIPTION

13	2013	Cam Pin
14	2014	Needle
15	2015	Locking Nut
16	2016	Needle Drum
17	2017	Spring
18	2018	Fluid Screw Nut
19	2019	Fluid Adjusting Screw
20	2020	Trigger Pin Bushing
21	2021	Trigger Pin
22	2022	Fluid Coupler
23	2023	Tube Nipple
24	2009	Tube/Checkvalve
25	2025	Trigger Washer
26	2026	Trigger Screw
27	2027	Nozzle Plate/Spring
28	2028	Trigger
29	2029	Hose Connector
30	2030	Fluid Tube
31	2031	Yoke
32	2032	Air Control Valve
33	2033	Lever
35	2035	Lid
36	2036	Gasket
38	2038	Nut
41	2041	Cup (1 Quart)
70	2070	Jamb Nut

For Service & Parts

USA

Pianotek Supply Company

Ferndale, MI USA

Phone: 248-545-1599

Fax: 248-545-0408

USA or CANADA

Fuji Industrial Spray Equipment Ltd.

Toronto, ON Canada

Phone: 800-650-0930 or 416-650-1430

Fax: 416-663-6238

Website: www.fujispray.com

e-mail: info@fujispray.com

UNITED KINGDOM

Axminster Power Tool Centre

Axminster, Devon, England

Phone: 01297 33656

Website: www.axminster.co.uk

Rutlands Limited

Bakewell, Derbyshire, England

Phone: 01629 815518

Website: www.rutlands.co.uk

For Service & Parts - Continued

AUSTRALIA & NZ

apSM Tecni Pty Ltd

Campbellfield, Victoria 3061

Phone: 3-9359-5000

Fax: 3-9359-5033

PUERTO RICO

Eagle Tools Mfg. Corp

San Lorenzo, Puerto Rico, 00754

Phone: 787-736-0444

Fax: 787-736-0465

SINGAPORE

Specialty System Pte. Ltd

Singapore, 415983

Phone: 65-844-6551

Fax: 65-844-6553

SOUTH KOREA

E-Woo Painting Technology

Seoul, Korea

Phone: 82-2-2103-1477

Fax: 82-2-2103-1488

Website: www.allspray.co.kr/

Limited 2 Year Warranty

Fuji Industrial Spray Equipment Ltd. issues a 24 month limited warranty to the purchaser effective from the date of purchase against defects in materials or workmanship. This warranty does not cover abuse, accidental damage, misuse, normal wear parts, motor brush replacement, or spray gun maintenance and clean-up. Warranty is void if repairs are made or attempted by unauthorized persons. At our option, Fuji Spray will repair or replace defective parts without charge provided the purchaser return parts prepaid to the nearest authorized service center or to the factory.

Factory returns must first receive a Return Material Authorization. In North America, please call 800-650-0930 to obtain an authorization number. In other countries, please call the company where you purchased the product.

Warranty will become void through improper installation or operation. Any modifications to the equipment or deviations from recommended procedures, accidental damage or any related action that impairs or abuses normal wear and care of Fuji spray equipment will also void warranty.

CE - Declaration of Conformity

Manufacturer: Fuji Industrial Spray Equipment Ltd.
40 Magnetic Drive., #58
Toronto, ON Canada. M3J 2C4

According to: 73/23/EEC
Low Voltage Directive

Declares that
the product: HVLP Spray System

Product Name(s): HVLP Spray System
Type Name: Turbine
Model(s) Super Model
Q3 Model
Q4 Model

Conform to the
following norm(s) EN 60335-1

Date: February 2001



Paul Smith, CEO
Fuji Industrial Spray Equipment Ltd.