

Side Gumming System Setup Q & A

Question	Answer
1. Should I choose a high pressure or low pressure pumping system	<p>In general, a low pressure pumping system (1:1) or from 0-100psi is usually sufficient for machines even up to 1500epm. Because the side gums respond better to lower shear, a diaphragm pump is less likely to create shear-induced coagulation or cross-linking.</p> <p>Higher pressure systems can be used, but it is best to keep the input air as low as possible in order to keep the internal pressure in the piston pump low.</p>
2. How high should the nozzle be set above the flap?	<p>The nozzle should be as low as possible but avoiding the tip dragging through the gum bead. This usually means about ¼" – 5/16" or 5-8mm.</p> <p>Often the nozzles will be set high enough to allow an adjuster to put a finger underneath to wipe but this results in a nozzle height that is too high. There is more chance of gum missing the flap due to being deflected and the exit time of the gum is longer, inducing more variability in gum-line locations.</p>
3. Is it important to hold down the flap in the side gumming area?	<p>Yes. This is one of the most important ways to stabilize gum application. When the flap is moving up and down, adhesive application can be erratic and change position. Sometimes gum can even splatter off the flap if the movement is too dramatic.</p>
4. Is it important to have a regulator on the gumming system or could I run with just constant pump pressure?	<p>Regulators are important for two reasons:</p> <ol style="list-style-type: none"> 1. They increase and decrease gum pressure in the valve as the machine speeds up and slows down. This ensures that the valves dispense the same volume at any speed. Without a functioning regulator, too much gum is applied at low speeds and the vacuum cylinder or gumming area becomes quickly contaminated. 2. The regulator also ensures that gum pressure is relieved when the machine stops suddenly. This means that upon restart, there won't be excess pressure in the gum line.
5. What tip size should I use for side gumming?	<p>Equipment manufacturers have a large range of tip sizes available, but a good starting place is an orifice size of between 0.3mm (0.012") and 0.4mm (0.016"). These sizes optimize the balance between too much gum at low speeds, good cutoff and low clogging risk.</p>

<p>6. I have seen some European gumming systems use contact nozzles. Is that advisable?</p>	<p>While either contact or non-contact nozzles can be used for reliable gumming, the majority of machines are equipped with non-contact gumming nozzles.</p> <p>Contact nozzles do have a self-cleaning advantage that can allow them to run longer between wiping. However, they work best when there is tension in the paper to create back-pressure. This was originally achieved on the W&D 102 machines where the side-gumming is sometimes done on the web rather than cut envelope.</p> <p>Non-contact nozzles are now quite well-engineered and will provide good cutoff and clean running for several hours.</p>
<p>7. How long should I expect my side gum and extrusion system to work satisfactorily between tip-wiping?</p>	<p>If a side gumming system is set up well and using a high-quality adhesive, the machine should be able to go 4-8 hours between wiping tips. Frequent stops for other reasons such as the window-patch or folding or jamming issues may increase that frequency.</p>
<p>8. Why is the rear-adjustment setup so important?</p>	<p>The rear-adjust knob controls how much travel the plunger or needle in the valve makes. The longer the travel, the higher the velocity the plunger reaches and the effects will be seen particularly on the end of the gum line. If the gum is cutting off poorly (tailing) and other factors have been ruled out, the plunger travel should be increased. However, if it is too large, a “snakehead” can develop on the back end.</p>
<p>9. On a new system or after a rebuild, how do I know if I have air in the system?</p>	<p>Air in a pressurized gumming system can be problematic. The most likely place for air to enter the system is near the suction side of the pump where corroded fittings, loose hose clamps and cracked hoses can allow air to continuously enter the system. These issues must be rectified before attempting to purge out air.</p> <p>Air can only be removed by stopping entry of air and purging out through the hose that goes into the gumming valve until no bubbles can be felt on the fingertip. These bubbles sometimes feel like “sand” in the gum.</p> <p>Sometimes, air bubbles can be trapped in a valve and it can be helpful to invert the valve briefly and purge it to make sure all the air has escaped.</p>

<p>10. If I am using a photo-eye trigger for my side gumming system, should I switch to a flag?</p>	<p>If the gumming consistency is not what you are expecting and all other sources of inconsistency have been removed (old valves, aging controls, etc.), triggering the side gum with a flag may be a good option to gain 1-2mm of consistency. While photo-eyes do provide a reliable trigger, the movement of the paper, particularly when cut with a taper, can result in gum line movement.</p> <p>It is important when setting up a system with a flag that another paper sensor is in place to ensure gumming can't take place without product in the machine. Some machines also use a switch for the operator to confirm that side gumming can actually start.</p>
<p>11. How important is the controller in the side gumming system? Can I re-use older equipment?</p>	<p>As long as the gumming controller is safe and in good condition, it can be used for many years. Because they are often very configurable, they can adapt to multiple valves types and sometimes the valves can be upgraded without changing the control for a very small investment.</p> <p>The condition of the cables should be considered when reviewing a system for upgrades or replacements. Worn or frayed cables can not only be unreliable but can also break the electrical shielding around the wires that prevents noise from accidentally affecting the gumming valves.</p>
<p>12. If I want to upgrade my side gumming system, what is the best way to start the investment?</p>	<p>If a complete replacement is not possible, the best way to spend money is to start with the valves and the pressure regulation system. The gumming valves must be in good condition to achieve consistent, reliable gum lines and valves and cables can be upgraded with a small investment.</p> <p>The next priority would be pressure regulation. Since pressure regulation is the key to volume consistency and can prevent stickers and contamination of the gumming area of the machine.</p>