

Spray System Maintenance and the Common Failures

Most all proportioners are designed to shoot a plural component product that consists of a resin and a hardener, they are a 1/1 ratio proportioner shooting a hybrid polyurea coating. It is important to understand the nature of the product and how it effects the daily operation, in this application maintenance and failure that can arise.

The two components;

The A-side is also referred to as, the red side, iso or hardener. It is clear or amber in color and the consistency of honey. It's viscosity is temperature sensitive and it must be pre-conditioned in the drum to about 75°-80° prior to spraying.

The B-side is also referred to as, the blue side, poly or resin. It comes in many colors depending the pigment/color that is added, it is the constancy of a 10 weight oil. Its viscosity will remain about the same regardless of temperature but the data sheet says to pre-conditioned it to about 75°-80° also. It has pigment, UV stabilizers and other additives and need to be mixed for 30 minutes prior to spraying. Once the initial mixing is complete, the mixer should remain on low speed for the remainder of the processing/spray time.

Failures;

Most failures are related to the A-side. It is the hardener and is very sensitive to air, moisture and many other components. You are pumping glue essentially and you need to do whatever it takes to keep the A-side/iso/glue as your friend and not as an enemy.

As long as the A-side of the system is sealed up from the drum to the gun and all air has been bled out it should last two weeks minimum without any hardening issues. If the system is sitting idle you need to cycle material through the system every two weeks to keep it fresh; if it will be idle for an extended period of time then the system should be properly flushed to avoid hardening. ([See Flush Document](#))

There are four main trouble areas on the A-side of your spray system where the iso material can be exposed to air, moisture or other components that will cause hardening and possible failures.

1) The drum; The drum must have a desiccant drier on it, its job is to remove moisture from any air that enters the drum. The drier is a 2" clear PVC tube filled with desiccant beads, the beads must be changed periodically. We use the blue color change beads, once saturated they will change to a yellow or clear.

The pump in the drum will build up with hardened iso on the lower section and must be cleaned as needed. Excess hardened material in the lower tube will cause the pump to stall or fail. The pump bung adapter must be kept clean of iso and greased with white lithium on the threads and internal sleeve. White lithium grease is a must and acts as anti-seize, petroleum grease will react with the iso and harden. Coat all threads on the system with white lithium that may come in contact with iso and harden. ([See IPM02 Troubleshooting & Maintenance Document](#))

2) The Gun; iso material in the gun head is constantly exposed to air/moisture that can cause hardening/failure. Get in a routine of checking, cleaning and greasing the gun on a daily basis to avoid problems. About 90% of the tech calls we get pertain to the gun. See the gun manual and various tech docs on the website pertaining to gun issues.

3) The A-side proportioning pump; the A-side pump has a lube cup on the top with pump lube in it, the lube prevents the iso from contacting air/moisture and hardening. The lube cup must be checked, cleaned and refilled with fresh pump lube daily or as needed. **Retracting or parking the pump in the lower position at the end of shift is a must.** See your manual for procedure. On the Glas-Craft MH2 Machine, at the end of the day you flip the switch from run to retract, then you bleed the

pressure down to about 500 psi by triggering the gun a few times, this parks the pump in the lower position. At this point the pump shaft is fully submerged in iso and sealed off on top by the pump lube preventing any iso from hardening on the shaft. The Graco machines utilize a lube pump system instead of a lube cup. (Refer to Graco Manuals For Maintenance Procedures) **This is the most important maintenance procedure involved with your spray system.** If the top is not lubed the shaft will lock up with hardened iso causing a failure. If the pump shaft is not retracted and left in the up position for an extended time, a ring of hardened iso will form on the shaft. When you start up your machine again the ring of iso on the shaft will ruin the top pump seal causing a large mess and pump failure. Please note that if your air supply to the supply pumps is not turned off and bled at shut down there is possibility that the supply pump pressure will push the proportioning pumps out of their retracted position. To bleed the air from the supply pumps, turn off the main air supply and let the mixer run, this will use up any stored air pressure downstream of the main air valve. (All other Machines Follow Manufactures Manuals For Proper Startup/Shutdown and Lube Pump Procedures)

4) Air in the system; If any part of the A-side of the system is opened up for any reason the air must be bled out to prevent internal hardening. This would include; cleaning the supply screen, replacing the pump, any hose, fitting or heater component that would open the system and allow air in. To bleed; leave the machine hydraulics off, use just the supply pump pressure, remove the side block from the gun then open the valve and bleed the material into a clean bucket or back into the correct drum, bleed until you hear the air purge from the side block, the A-material can bleed slow depending on the temperature and can take a while, you may have to bleed a quart or more, be patient and listen for the air to purge.

I hope this helps. Reach out to us as needed.

Thank You,
John Powers
Turbo Liner Inc.

Related Support Documents:
Pump Lubrication Doc
Lube Cup Doc
IPM IP-02 Supply Pump Troubleshooting and Maintenance
Machine Manuals, Graco, GlasCraft, etc.,
Turbo Liner 11 Material Data Sheet