Safe Operating Procedure

LAFRENTZ
A COLAS COMPANY

Breining Duo 1600 Melter

Potential Health or Safety Concerns

> Damage to Equipment/Vehicles (Accidents, Flying Debris, Spills/Drips, Fire)
> Injuries to workers and public (Flying Debris, Pinch Points, Crushing, Noise, Burns, Fatigue)

Documentation

Complete and review a Hazard Assessment, Traffic Accommodation Plan (TAP) and Emergency Response Plan (ERP). Ensure you have an applicable road use permit (OSCAM, OSCP, etc.) and complete sign logs when required.

Equipment, PPE, and Apparel Required

> CSA Approved 6" footwear, hard hat, gloves, reflective vest (Class 2-3), ear protection, eye protection, CSA Type 2 small first aid kit, fire extinguisher, burn kit, a fire blanket, and spill kit.
> Burn protection is required when working with molten thermoplastic (heat rated forearm coverings, Kevlar sleeve, gloves with forearm covering)

Training Requirements

> The operator must be deemed competent prior to operating the equipment.
> The operator must be a certified propane pump attendant to fuel the propane tank.
> The operator must hold a valid Class 1 drivers license in order to drive the truck that the equipment is mounted upon.

Colas Lifesaving Icons

The following Health, Safety, or Environmental icons represent applicable risks to this procedure. Please see the **Lifesaving Icons** document for more information.


Hazard Evaluation and Control


Health Hazards


Impairment


Line of Fire


Safe Lifting


Energy Isolation


Competency

Safe Operating Procedure

Procedures and Precautions to Offset Hazards

1. **Inspection and preparation >** Conduct pre-trip inspection; check propane level in the tank, heat transfer oil and hydraulic oil levels. Visually inspect hydraulic and propane lines. Inspect and service auxiliary engine as required.

2. **Starting the melter spiral-burners >** Open the propane tank, the manual shut off valve on the side control box and turn the regulator to 0.7 to 0.8 bar of pressure. Introduce flame in front of the spiral-burners while pressing the flame safety pilot (AKA: pilot light button) and holding it for approximately 5 seconds or until the spiral-burner stays lit when released. Now turn up the pressure regulator setpoint to 2.5 bar for normal operation and adjust the temperature thermostat as required for the application. If there is ever any unburnt propane released into the heating tube, turn off the propane and let stand for 5 minutes before attempting to ignite any propane again.

3. **Melter start up and temperature monitoring >** Start melter spiral-burners and auxiliary engine to get the heat transfer oil circulating, this will aid in helping to melt the thermoplastic quickly. Next, fill the melting tank with small pieces of thermoplastic. Slowly start the agitating process, moving the agitator forward and reverse until a full rotation can be completed. Monitor the thermoplastic temperature using any of the following 3 methods:
   - Check the main gauge on the propane control box located on the front of the melter (main controls)
   - Check the gauges on the rear of the melter. There are 4 gauges, one gauge for each individual side for the thermoplastic and the heat transfer oil.
   - Use a pocket thermometer. Lift the lid of the melter and scan the thermoplastic.

   Note that to avoid overheating the thermoplastic, only exceed the given temperatures for a short period. White thermoplastic shall be 200-210°C and yellow thermoplastic shall be 180-190°C. The thermoplastic and heat transfer oil temperatures should be approximately the same while in operation.

4. **In Transit >** In order to compy with dangerous goods regulations, the propane components on the thermoplastic melter are equipped with a capillary temperature switch (AKA: thermocouple) and a flame safety pilot which stops the flow of propane if the flame were to blow out. For this reason, the propane torches may be used in transit to a work site.

5. **Job site >** Position cooker truck in safe area; maintain correct thermoplastic temperature and levels in melting tank, refer to step 3. Move cooker as required on the jobsite or as required by the foreman. Ensure deck is kept free of debris at all times.

6. **Shut Down >** Open melting tank lid to start releasing heat. Turn off the manual shutoff valves at the propane control box. Fill melting tank half full of thermoplastic, stop the agitator when the thermoplastic has declined to 100°C. Turn off the auxiliary engine and finish filling the melting tank with thermoplastic. Clean excess thermoplastic from deck. Secure pallets, close lids. On the way back to the shop or hotel, fill the propane tank. Restock the truck as required or instructed by the Foreman.

7. **Overnight >** Repeat step 2. Set thermoplastic temperature to 100°C. Set pressure regulator to 0.7 to 0.8 Bar. Clean and store all combustibles and ensure unit is parked in a safe area. Place a lockout device on the propane control knobs if the unit is parked in an area where it may be tampered with.