Asset No: 9700002641
Categorized: Research
Permission from: A/P Tan Ming Jen
Remarks: Nil

Standard Operating Procedures

Press Operation

1. **Power**: Electrical input supply of 380/480 V 3phase, 3 wire 50/60 Hz. Load rating is 25 kV A
2. **Water**: Flow rate of 3 gallons/min at 40 lbs/sq. in at 70 OF (A flow Indicator is located at the right frame of the press).
3. **Air**: Verify the air to the press is supplied with 80 PSIG
4. **Argon**: Verify adequate supply of Argon at 600 PSI is supplied to the press.
Start-up Procedures

1. Turn on Main Circuit Breaker at the back of machine (fan should operate).
2. Push the Control Power button "ON" and allow machine to do diagnostic check eg; PLC, Touch Screen, and Heater Controllers, etc.... (if no error, Home Screen should appear on Touch Screen Terminal with Heater Controllers displaying actual set point temperatures).
3. Emergency Stop Button once activated, all function to the press will stop. 4. Release manual dump values if high pressure trapped in the die before Control Power is turned on again.

Heating Control

1. Two temperature controllers indicate the upper and lower segment of the platen actual temperature.
2. Each controller shows 2 displayed temperatures (Upper display actual temperature and lower display set temperature).
3. To set lower display temperature, press the center of the controller and use the arrow up or down to raise or lower the set point temperature to the desired value (fixed rate of 3.2°C/min).
4. If temperature goes over 18S0°C call supplier. 5. Leave the press temperature on at all time (day and night) do not shut down machine.

Ram Control

1. The Ram Up/Down push buttons activate the upper and lower platen or die.
2. Once push, it rapid traverse till button is release or when it reaches it end of travel. Lower travel limit is 41/2" and upper travel limit 17".
3. Hydraulic motor will run for 30 second after button is released and then automatically shutdown.
4. Pressure greater than 10 tons, need to use Air/Oil Booster.
5. When the Air/Oil Booster pump is activated, the amber "Press" light/button will be illuminated. Once active, tonnage can be adjusted by the "Ram Force Adjustment" knob.

**Automatic Part Forming Cycle**

1. Automatic Cycle is running, Air/Oil Booster will automatically be activated. Ram tonnage can be adjusted by the "Manual Ram Force Adjustment" knob. The Air/Oil Booster will be automatically disengaged at the end of cycle.
2. During the automatic cycle, pressing the "Ram Down" button will temporarily disengage the Air/Oil Booster and it will automatically reengage after the down button is released.
3. Ram will not move down if excessive pressure detected. Decompress all gas zones to a safe level before attempting to move the ram.

**Manually**

1. Pressing the amber "Press" light/button will activate the Air/Oil button.
2. Pressing the "Ram Down" button will disengage the Air/Oil Booster. For safety reason, the ram will not move until all gas zones are decompressed to a safe level.

**Automatic Cycle Control**

Refer to attached documents.