1. **Operational Steps**
2. First of all clean the line before the operation.
3. Check the hopper and hopper magnet properly and remove any foreign material like debris etc in the hopper.
4. Turn on the power of the extruder by pushing up the power switch.
5. Check the heating parameters and adjust the barrel temperature according to the raw material used.
6. Make sure the processing temperature are according to the below mentioned range.

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| --- | --- |
| Material Name | Processing Temperature (0C) |
| **PE** | 130-280 0C  Depends on Recipe |
| **PP** | 160-2600C  Depends on Recipe |
| **PS** | 200-2400C |
| **PC/PET** | 250-3000C |
| **ABS/SAN** | 250-2800C |

1. Give proper time for the heaters to reach the set values of barrel temperature.
2. After completion of barrel temperature do operate the oil pump to avoid overheating.
3. Before starting the line main motor and feeder variables should be at zero.
4. Adjust the cutter speed according to the material to be processed.
5. Turn on the main motor by pushing ON button.
6. Set the feeding variable according to the main motor load.
7. Increase the main motor load by increase feeding.
8. Turn on the vacuum pump to avoid trapped gases and moisture.
9. Check the producing master batch after regular interval of time.
10. If the cutting is not as per standard then adjust the main motor speed, feeding speed, or the cutter speed according to the condition.
11. **Precautions**
12. Do not operate the machine until the barrel temperature reaches the adjusted temperature.
13. Check the oil level of gear box and oil tank before operation.
14. Make sure that the material is free of iron particles.
15. Clean the moving parts of the machine and lubricate properly as per requirement.
16. Check the cleaning of vacuum pump before the operation.
17. Do not run the extruder before the completion of required temperature.
18. Check the electrical sparking.
19. Do not run the extruder on overload and over speed.
20. Make sure there is no naked wire on the machine
21. Maintain personal hygiene and avoid to mixing hair, nails and bloods etc into the material.

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| 1. **Procedure for line cleaning (change over)** |

There are three types of method for cleaning

1. Purging
2. Partially cleaning
3. Complete cleaning

**PURGING:**

This method of cleaning is carried out when slightly difference in shade with previous color.

**PARTIALLY CLEANING:**

Normally this method of cleaning is use when line shift from one color to other color, for example shifting from RED TO BLUE.

Normally three steps are involved in this method.

1. 1st we extrude the micrex (filler).
2. Open and clean die head.
3. Run low melt flowing polymer to clean the extruder.
4. Run high MFI to remove low MFI from barrel to avoid turbulence flow through die.

**COMPLETE CLEANING:**

This method of cleaning is use only when we want to shift our line from any color to white or Additive.

For complete cleaning 1st follow above three steps of partial cleaning then need to pullout the screw, make sure the screw and barrel should be proper clean.

# WI for extruder cleaning