WESTERN HEAT & FORGE	Work Instruction For operation of Induction Billet Heater	Document No.	30-WI-PR-11
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Scope: Operation of Induction Billet Heater for 1 MT Hammer.
Responsibility: Operator and Supervisor.
Method:
1) Prior to starting IBH, cooling tower of all pumps shall be operational.
2) Main supply of heater and operating panel should on.
3) Switch on control on push-button on operating panel.
4) Switch on D.M. Water pump.
5) Keep auto/manual selector switch on manual for cycle setting purpose.
6) Once cycle set, keep auto/manual selector switch in auto condition.
7) Keep heat safe selector switch on in auto condition on operating panel
8) Keep power pot on zero position.
9) Switch on 'DC ON' push-button on heater panel.
10) Load the cut billets on charging conveyor.
11) Press 'Cycle start' push button on operating panel when `Machine ready' LED glows.
12) Set induction heater temperature as per the Work Instruction 30-WI-MQC-01
13) Slowly increase power pot as per requirement.
14) Monitor the temperature of billet with the help of optical pyrometer on 100% basis. Record the temperature as per control plan.
a) If Billet temperature within the specified range, billet will automatically pass through OK path and take it for forging.
b) If billet temperature is below the specified range then billet automatically pass through the low temperature path and collect in pallet (Yellow Color) identified as a reheating
c) If billet temperature is above the specified range then billet automatically pass through the High Temperature path and collect in pallet (Red Color) identified as a scrap.
15) Do the forging on 1 MT hammer by putting the heated billet in Die cavity with the help of tong and allow the forging to cool in Air.
16) Forging finishing temperature shall not be lower than 870°C and check the micro structure per heat to comply the requirement of grain growth as per ASM Handbook Vol 9.
17) Over heated billets kept in separate pallet shall be sent to scrap yard on daily basis.
18) Under Heated billets kept in a separate pallet will taken for one time reheating in a separate batch and forging will be done within specified forging temperature range.
If during reheating, billet temperature observed above or below specified temperature those billets will be kept in scrap pallet and send to scrap yard on daily basis.
Separate record will be maintained for reheated billet batch and batch will monitored by shift supervisor.

19) In case of Hammer /Induction Billet Heater breakdown, do as follows --
a) Major – Take out the cut billets by Switching off the induction heater and put in yellow bin for reheat once
b) Minor - Cut billets heat to set temperature again and do the forging

20) In case of power Failure, do as follows --
a) Major - Take out cut billets from Induction heater put in yellow bin for reheat once.
b) Minor - Cut billets heat to set temperature again and do the forging
20) To switch off the heater press `Cycle stop 'push-button.
21) Disposal of scrap billets shall be done on weekly basis from the scrap yard to outside of the company

Set Up Instructions: -

S no	Die No	Section	Cut Wt. In Kg	Coil Size	KWH	Cycle Time in Seconds		
1	4173	56 Dia	2.35	60 Dia	155/160	22/25		
2	4174	56 Dia	2.55	60 Dia	155/160	22/25		
3	4043	75RCS	4.0	75RCS	180/190	30/35		
4	4470	70 Dia	4.2	75 RCS	180/190	30/35		
5	215	40 Dia	1.9	45 Dia	135/145	30/35		
6	4164	56 Dia	2.6	60 Dia	155/160	30/35		
7	388	56 Dia	2.0	60 Dia	155/160	25/30		

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