	VEDANTA LIMITED –VALUE ADDED BUSINESS	Format No.:	VL/IMS/PP2/MECH/WI/5
	INTEGRATED MANAGEMENT SYSTEM	Revision Date:	05.04.2021
	<u>Work instruction for Structural Fabrication, dismantling & Erection</u>	Revision No.:	02
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Objective: Gas cutting, welding, cutting machine
Scope : Entire plant
Responsibility : Engineer in charge and workmen at job
PPEs to be used: Helmet, Safety shoes, safety hand gloves, ear plugs, nose mask, Leather apron, leather hand gloves, goggles, face shield, welding shield and Leather arm

Aspect-Impact

Scrap generation Land contamination
 Fire Air Pollution

Hazards Identified

Mechanical Hazard Tripping,
 Fall from height,
 Entangling between moving parts
 Fall of spares, tools, material etc
 Chemical hazard Fire & explosion, Fumes
 Physical Hazard Temperature, Radiation
 Electrical Hazard Electrocutation
 Human behavior improper housekeeping, Non use of PPEs, Alcoholism, over confidence, negligence, Height phobia

Safety precautions:

- Avoid using mobile phone while working.
- Use appropriate tools required for the job.
- After job always do proper housekeeping.
- Always prevent body from line of action of force.
- Perform proper communication verbal and non-verbal as required.


PRECHECKS:-

- Leakages from cylinder.
- Condition of cutting hose pipe and its connections.
- Condition of cutting torch, flashback arrestors and end connections.
- Condition of double stage regulators, flash back arrestors and end connections.

PROCEDURE:-

- Shift the cylinder properly in required space, kept vertical and tied with support.
- Connect the regulators and hose pipe to the cylinder with proper tightening and clamping.
- Open one by one oxygen and DA cylinder key slowly and check the leakages from end connections.

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- Slowly open one by one oxygen and DA the cutting torch nozzle valve and adjust flow regulator as required.
- Once gas flow path clear from cylinder to torch up to nozzle check any leakages.
- Wear the safety hand gloves and goggles before using lighter for start.
- Before starting the cutting torch ensure the surrounding area to be clear, free from explosions and make the availability of fire extinguish.
- After completion of cutting work close both cutting torch nozzle valve and release the regulator flow valve and close the cylinder key.
- Remove all the connection of regulator, cutting hoses and hose to be rolled properly.
- Clean and shift the all material cutting torch with hose, regulators, lighter, cylinder key, safety goggles, and hand gloves in to proper designated place in work shop.
- If cylinder becomes empty shifted in to stores.

Welding machine operating procedure

RESPONSIBILITY: - Engineer In-charge and Workman at job

SAFETY PRECAUTION:-

- PPEs to be used - Welding Helmet, Safety shoes, Safety goggles, safety hand gloves, ear plugs, nose mask and apron if necessary.

PRECHECKS:-

- Condition of welding cables no joints to be allowed and proper end connection.
- Condition of power cables no joints to be allowed and proper end socket connection.
- Condition oh holder and machine earthing connections.
- Condition of double stage regulators, flash back arrestors and end connections.


PROCEDURE:-

- Shift the welding machine properly in required space and covered properly.
- Connect the all welding, earthing and power cables as required.
- Switch on the power of welding machine, check the required current and arrange the earthing.
- Wear the safety welding helmet, hand gloves and if required apron.
- Before starting the welding work ensure the surrounding area to be clear, free from explosions and make the availability of fire extinguish.
- Adjust the current during welding work as required/as instructed by welder.
- After completion of work switch off the main supply and remove all connections.
- Clean and shift the welding machine and its accessory including safety goggles, chipping hammer, wire brush and hand gloves in to proper designated place in work shop.

Cutoff machine operating procedure

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RESPONSIBILITY: - Engineer In-charge and Workman at job

SAFETY PRECAUTION:-

- PPEs to be used - Helmet, Safety shoes, Safety goggles, hand gloves, ear plugs, nose mask and apron if necessary.

PRECHECKS:-

- Condition of power cables no joints to be allowed and proper end socket connection.
- Condition of machine and guard arrangement.

PROCEDURE:-

- Remove the wheel lock nut with special tools.
- Fix the cutting/grinding/buffing wheel properly in to holding bolt and check there play/gap between wheel inner diameter and bolt.
- Lock the wheel properly and tightened the lock nut.
- Before start the grinding machine wear all safety necessities and hold in proper position.
- During running if feel high vibration on machine, stop and informed to concerned engineer.
- After completion of grinding work remove the cable connection and kept in to safe area in work shop.

Lost time injury Incident Note - On Apr-2018 Mr. Anil Gas cutter of M/s Janson Engineering contractor workmen met an accident while shifting cylinder trolley with cylinder. Total four workmen allotted for shifting cylinder trolley, while during shifting due to lack of internal communication Mr. Anil trying to pull trolley alone by hardly and get twisted and her leg get fractured. This workman sends him to outside for treatment.

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