Date

S S M T W T F

1.2. Draft allowance, Shrinkage allowance, Machining allowance

1.3. Accuracy, smoothness, strength, durability, reusability, cost-effe

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2.1. Casting defect → undesired irregularity in a metal casting process.

2.2. Blow hole

2.3. Cupolas, Crucible furnance, Open heart furnance.

2.4. a) Metal defects

b) temp diff between filling iterations of melted metal

c) no pure mixture

Lathe : Facing : surface cut

Turning : depth

Knurling : implant pattern

Boring : enlarge hole

Date
S S M T W T F

Q1. Distortion: thermal expansion, contraction, wrong current, voltage or travel speed.

Porosity (entrapment of gas): filler metal, atmosphere, welding process. w.

Undercutting: travel speed too high.

Q2. Yes.

Balanced (Neutral flame): hot, clean weld. Balanced oxygen, acetylene.

Carburizing flame: more acetylene, hotter, for thicker metals but can be brittle.

Oxidizing flame: more oxygen, hotter, metals that are prone to oxidation. but may become weak.

Floral paper products a concern of HEART

Date

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Q3. Shielding gas is necessary to protect molten weld pool from atmospheric contamination → Porosity, Brittleness, Corrosion.

Q4. Acetylene → hotter (5720° F), very stable, very clean, inexpensive; allowing for faster welding.

3.1. Flux → prevents oxidation, removes impurities from weld, reduces the melting point of the metal piece.

3.3. tacking → To hold the pieces of metal in place.

MIG → Metalic Inert Gas

MIG V/S Arc welding

MIG uses inert gas, Arc welding can use gas or flux. Arc welding is a general term for any welding process that uses electric arc to melt the base.

Date

Factors determining MIG weld quality:

- Welding params: current, voltage, ~~the~~ wire feed speed.
- Experience of the welder.

Arc generation:

Generated by applying a high voltage between the electrode and workpiece. This high voltage ionizes the air in between and creates a conductive path for current flow which results in arc.

- DCRP & DCSP:
  - Direct current Reverse Polarity
  - DC straight Polarity

In exp. AC current was used.

→ work pos, elec neg

Date

s s m t w t f

Welding params:

Electrode polarity

welding current

" speed

Arc voltage

Electrod dia

" angle

Flux depth

Electrode → angle, dia, polarity

Arc → voltage

Weld → speed current

Flux → depth

E XX X X

XX → Kpsi

X → 1/2/4 any/flat/downhill

X → coating