MAG•MIG Wire

Welding Notes (MIG)

Shielding gas is mainly consist of Ar, He and Ar +He mixing gases etc. Used in the semi-auto welding process with welding wire as consumable electrode which is normally called MIG Welding Process. It produces little welding spatter, stable arc, good welding appearance and good mechanical properties in the weld metal.

1. Electrical Polarity

DC+ (DC Reverse Polarity) : Normally use
DC– (DC Straight Polarity) : Thin work

2. Shielding Gas

Ar + 1~2% O_2 or 5% CO_2 is the recommended shielding gas because small amount of O_2 or CO_2 allows metal droplet to produces better wetting effect and evener arc heat. However, due to concern for carbonization, limiting O_2 content to 2% or CO_2 content to 5% is suggested. Due to the high price of He, it is rarely used unless specified or under contract.

3. Arc Length

Spray arc transfer on stainless steel MIG welding process can produce the most appropriate arc length through the idea arc voltage adjustment.

4. Wind protection

Proper shelter for outdoor welding and proper ventilation & air flow exchange for indoor welding.

5. Pulse Arc Welding

Some welding equipment allows pulsing function, which creates various high or low Interchanging weave formations, during current at pulse peak which becomes spray arc transfer achieving proper fusion, under the condition of low current in current at base, the absent of droplet transfer (short arc transfer) allows weld pool to cool off. In the case of vertical or overhead welding, the metal droplet will not fall which is beneficial to full position welding.

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TIG Rod

Welding Notes (TIG)

TIG welding is commonly used in full penetration pipe butt welding at root pass or thin plate welding, producing almost no welding spatter and excellent bead appearance. It is widely used in high quality or high precision projects.

Precautionary observable measures during welding :

1. Electrical Polarity

DC–: Must use, DCEN (tungsten electrode negative), DC straight polarity

2. Shielding Gas

Ar is the commonly used shielding gas with TIG, If higher arc heat is desired, usage of He or a mixture of Ar + He should be considered since the higher He ratio produces higher arc heat.

Gas fl ow rate recommendation :

Welding current 100~200A, flow rate 7~15 L/min

Welding current 200~300A, flow rate 12~20 L/min

3. Tungsten electrode extension

4~5 mm in common use, 2~3mm for corner joint or jobs with lesser air flow shielding, 5~6mm for joint with narrow and deep groove.

4. Wind protection

Proper shelter for outdoor welding and proper ventilation & air flow exchange for indoor welding.

5. Arc Length

1~3mm in normal application.

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