

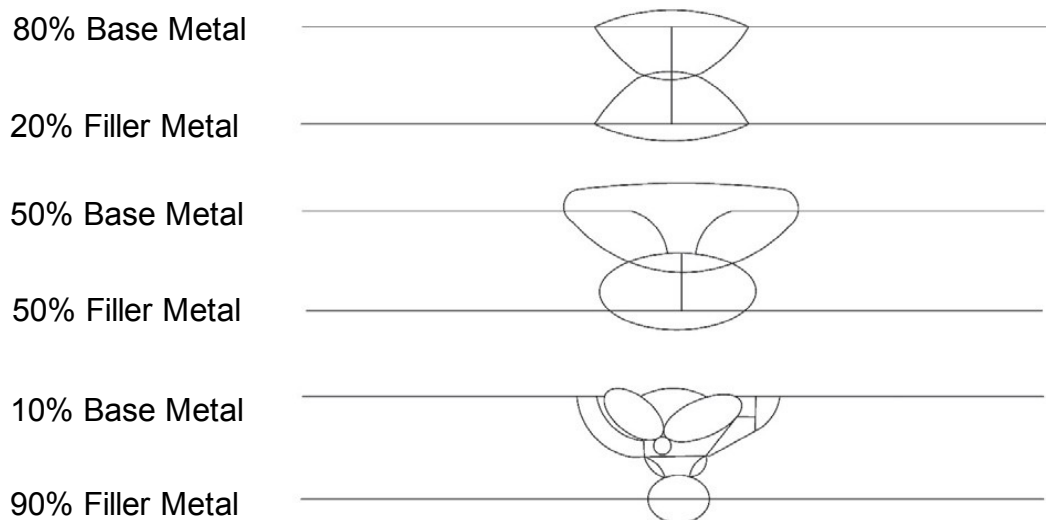
# SAW Wire / Flux

## Welding Notes

### 1. Joint Design

Different root gap, root face and beveled angle will affect SAW welding result extensively such as penetration problem or over heating to the weldment. Correct joint design for SAW acts as a more important role than other welding processes.

The effects of different Joint Design to the dilution of filler metal and base metal



### 2. Flux scattered amount and re-use of unconsumed flux

Heavy flux scattered will cause poor bead appearance. The proper amount of flux scattered on welding joint is that a very slight trace of arc light can be seen during welding.

Unused and returned flux shall be mixed with new flux at least 50% for reusing.

### 3. Flux mesh selection

Flux mesh is another important factor to affect welding result. Incorrect selection will cause surface pits or other defects. Usually, the higher the welding current range is, the bigger the mesh shall be in correspondence with and the vice versus.

### 4. Welding Parameters

Welding parameters listed in WPS (Welding Procedure Specification) such as wire size, welding current range, voltage range and welding speed range etc. shall be totally followed.

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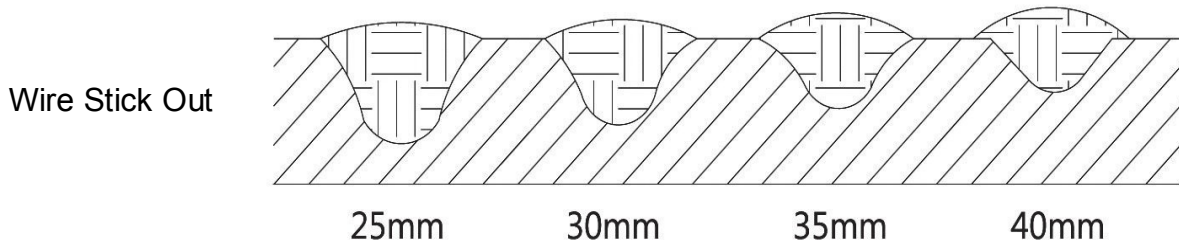
**5. Flux storage and baking requirement before using**

Flux shall be stored in dry and good ventilation area. For getting a good quality result, the flux shall be baked to 250 ~ 350°C x1 hr before using.

**6. Wire stick out**

Standard wire stick out: 25~30 mm.

The following sketch refers the relation between stick out and penetration depth. Increasing stick out can increase deposition rate but may cause incomplete fusion (lack of penetration).



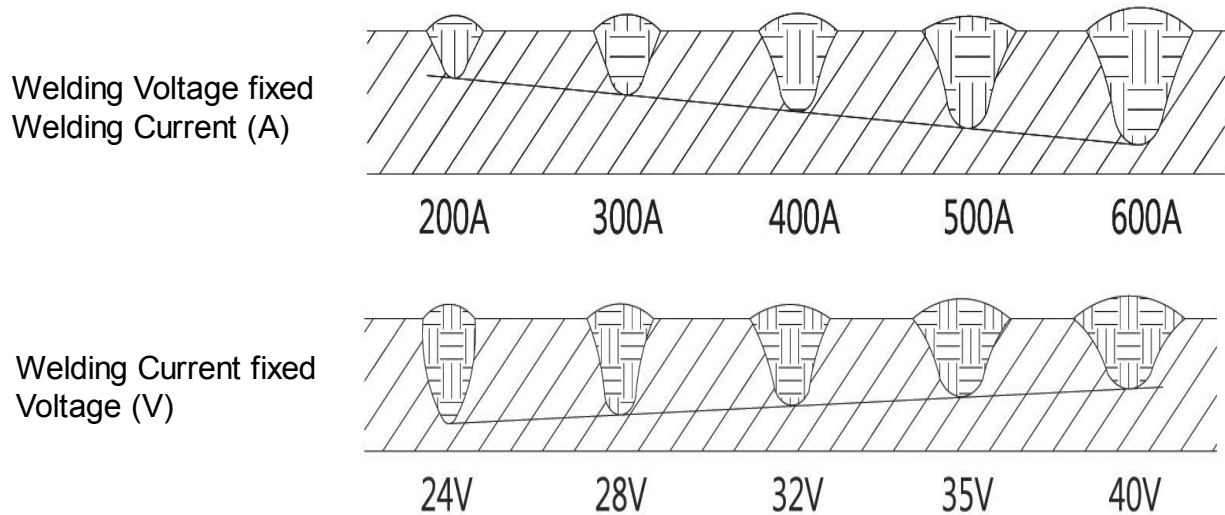
**7. Welding Current and Welding Voltage**

Recommended welding parameters table below:

Recommended welding parameters : [GA78×GS8, GA78×GS12K, GA86×GS12K]

wire diameter (mm)	Wire stick out (mm)	Voltage (V)	Wire consumption rate	Current (A)												
				200	300	400	500	600	700	800	900	1000	1100	1200		
2.4	25~30	18~25	kg/hr	3.6	6.4	9.8	13.9									
2.8	25~30	20~28	kg/hr	7.5	10.8	15.1	19.9									
3.2	25~30	23~30	kg/hr	6.5	9.4	12.8	16.7	20.8								
4.0	25~30	25~32	kg/hr			8.3	11.2	14.5	17.7	21.5						
4.8	25~30	28~36	kg/hr				10.1	12.8	15.5	18.5	21.4	24.9				
5.6	25~30	30~38	kg/hr					12.6	14.9	17.5	20.6	23.4	26.4			

The following 2 sketches are showing how the variation of welding current or welding voltage to change the weld profile (Wire size for testing: 4.0 mm).



### 8. Polarity illustration

DCEP ( DC+ ): Electrode positive or DC reverse polarity (DCRP).

DCEN ( DC- ): Electrode negative or DC straight polarity (DCSP).