

Handheld laser welding machine welding data - Horizon Laser

Material	Thickness	Splicing method	Weld gap	Whether to fill wire	wire diameter	Defocus of welding head	Power(W)	Laser Frequency	Duty cycle	Welding head wobble frequency	Wobble width	Gas pressure
SUS304	0.5mm	Tablet docking	< 0.12mm	N	/	10~15mm	300~500W	3000HZ	100%	30HZ~40HZ	0.5~1mm	0.1~0.2Mpa
		90 degree internal angle		N	/	10~15mm	300~500W	3000HZ	100%	30HZ~40HZ	0.5~1mm	0.1~0.2Mpa
		90 degree external angle		N	/	10~15mm	300~500W	3000HZ	100%	30HZ~40HZ	0.5~1mm	0.1~0.2Mpa
	1.0mm	Tablet docking	< 0.2mm	N	/	10~15mm	500~700W	3000HZ	100%	20HZ~30HZ	1~2mm	0.1~0.2Mpa
			0.2~0.8mm	Y	0.8	10~15mm	500~700W	3000HZ	100%	20HZ~30HZ	1.5~2.5mm	0.1~0.2Mpa
		90 degree internal angle	< 0.2mm	N	/	10~15mm	400~600W	3000HZ	100%	20HZ~30HZ	1~2mm	0.1~0.2Mpa
			0.2~0.8mm	Y	0.8	10~15mm	500~700W	3000HZ	100%	20HZ~30HZ	1.5~2.5mm	0.1~0.2Mpa
		90 degree external angle	< 0.2mm	N	/	10~15mm	400~600W	3000HZ	100%	20HZ~30HZ	1~2mm	0.1~0.2Mpa
			0.2~0.8mm	Y	0.8	10~15mm	500~700W	3000HZ	100%	20HZ~30HZ	1.5~2.5mm	0.1~0.2Mpa
	1.5mm	Tablet docking	< 0.3mm	N	/	10~15mm	500~800W	3000HZ	100%	20HZ~30HZ	1.5~2.5mm	0.1~0.2Mpa
			0.3~0.8mm	Y	0.8	10~15mm	600~900W	3000HZ	100%	20HZ~30HZ	2~3mm	0.1~0.2Mpa
		90 degree internal angle	< 0.3mm	N	/	10~15mm	500~800W	3000HZ	100%	20HZ~30HZ	1.5~2.5mm	0.1~0.2Mpa
			0.3~0.8mm	Y	0.8	10~15mm	600~900W	3000HZ	100%	20HZ~30HZ	2~3mm	0.1~0.2Mpa
		90 degree external angle	< 0.3mm	N	/	10~15mm	500~800W	3000HZ	100%	20HZ~30HZ	1.5~2.5mm	0.1~0.2Mpa
			0.3~0.8mm	Y	0.8	10~15mm	600~900W	3000HZ	100%	20HZ~30HZ	2~3mm	0.1~0.2Mpa
	2.0mm	Tablet docking	< 0.4mm	N	/	5~10mm	700~1000W	3000HZ	100%	8HZ~16HZ	2~3mm	0.1~0.2Mpa
			0.4~1.0mm	Y	1.0	5~10mm	800~1200W	3000HZ	100%	8HZ~16HZ	2.5~3.5mm	0.1~0.2Mpa
		90 degree internal angle	< 0.4mm	N	/	5~10mm	700~1000W	3000HZ	100%	8HZ~16HZ	2~3mm	0.1~0.2Mpa
			0.4~1.0mm	Y	1.0	5~10mm	800~1200W	3000HZ	100%	8HZ~16HZ	2.5~3.5mm	0.1~0.2Mpa
		90 degree external angle	< 0.4mm	N	/	5~10mm	700~1000W	3000HZ	100%	8HZ~16HZ	2~3mm	0.1~0.2Mpa
			0.4~1.0mm	Y	1.0	5~10mm	800~1200W	3000HZ	100%	8HZ~16HZ	2.5~3.5mm	0.1~0.2Mpa
	3.0mm	Tablet docking	< 0.5mm	N	/	5~10mm	900~1300W	3000HZ	100%	8HZ~16HZ	2.5~3.5mm	0.1~0.2Mpa
			0.5~1.2mm	Y	1.0/1.2	5~10mm	1000~1500W	3000HZ	100%	8HZ~16HZ	3~4mm	0.1~0.2Mpa
		90 degree internal angle	< 0.5mm	N	/	5~10mm	900~1300W	3000HZ	100%	8HZ~16HZ	2.5~3.5mm	0.1~0.2Mpa
0.5~1.2mm			Y	1.0/1.2	5~10mm	1000~1500W	3000HZ	100%	8HZ~16HZ	3~4mm	0.1~0.2Mpa	
90 degree external angle		< 0.5mm	N	/	5~10mm	900~1300W	3000HZ	100%	8HZ~16HZ	2.5~3.5mm	0.1~0.2Mpa	
		0.5~1.2mm	Y	1.0/1.2	5~10mm	1000~1500W	3000HZ	100%	8HZ~16HZ	3~4mm	0.1~0.2Mpa	
4.0mm	Tablet docking	< 0.6mm	N	/	5~10mm	1200~1700W	3000HZ	100%	8HZ~16HZ	2.5~3.5mm	0.1~0.2Mpa	
		0.6~1.5mm	Y	1.0/1.2/1.6	5~10mm	1400~1900W	3000HZ	100%	8HZ~16HZ	3~4mm	0.1~0.2Mpa	
	90 degree internal angle	< 0.6mm	N	/	5~10mm	1200~1700W	3000HZ	100%	8HZ~16HZ	2.5~3.5mm	0.1~0.2Mpa	
		0.6~1.5mm	Y	1.0/1.2/1.6	5~10mm	1400~1900W	3000HZ	100%	8HZ~16HZ	3~4mm	0.1~0.2Mpa	
	90 degree external angle	< 0.6mm	N	/	5~10mm	1200~1700W	3000HZ	100%	8HZ~16HZ	2.5~3.5mm	0.1~0.2Mpa	
		0.6~1.5mm	Y	1.0/1.2/1.6	5~10mm	1400~1900W	3000HZ	100%	8HZ~16HZ	3~4mm	0.1~0.2Mpa	

注

1. If the material is low-carbon steel, the laser power can be increased appropriately, and the others do not need to be changed;
2. If the material is aluminum alloy, the "welding head defocus amount" must be changed to 0mm, and the defocus amount is the same regardless of the thickness, except that the laser power can be appropriately increased;
3. Argon gas is recommended for welding shielding gas, with a purity requirement of $\geq 99.99\%$ (the outlet of the gas cylinder should use an argon pressure reducing valve, and a nitrogen pressure reducing valve cannot be used, because the adjustment accuracy of the nitrogen pressure reducing valve is insufficient, which affects the protection effect);
4. Description of the welding head defocusing amount: if the copper nozzle of the welding head is placed on the workpiece, when the red light spot is the smallest at the exit of the copper nozzle, the welding head defocusing amount is considered "zero", and the stainless steel tube behind the copper nozzle is rotated, Can adjust the defocus of the welding head;
5. The above parameters are only recommended parameters (or parameter adjustment direction guidance), because the actual welding products of customers are different, they need to be adjusted flexibly according to the actual situation;