

# Table of material processing results: Nogamigiken Handheld Electrode Punches

Rev.6.0

Following is the table of materials that were able to be processed with good quality (no visible burr with the naked eyes) using the Nogamigiken Handheld Electrode Punches (4 μm clearance).

The values in the table show the minimum to maximum thickness (in μm) that can be processed for each punching diameter and each material.

(unit: μm)

Punching size in diameter (mm)	Body size	Cathode electrode	Anode electrode	Al (177 MPa)	Cu (443 MPa)	SUS304 (1304 MPa)	SUS316L (785 MPa)	Ni (685 MPa)	Ti (490 MPa)	Mo (635 MPa)	Ag (255 MPa)	Pt (150 MPa)	Au (130 MPa)	PP (41 MPa)	PE (31 MPa)	PI (247 MPa)	PET (178 MPa)
1	S	50 to 300	50 to 300	6 to 200	5 to 100	8 to 50	8 to 90	8 to 100	5 to 50	8 to 100	5 to 200	6 to 200	6 to 200	40 to 200	40 to 200	40 to 200	40 to 200
2	S	50 to 300	50 to 300	6 to 200	5 to 100	8 to 50	8 to 90	8 to 100	5 to 50	8 to 100	5 to 200	6 to 200	6 to 200	40 to 200	40 to 200	40 to 200	40 to 200
3	S	50 to 300	50 to 300	6 to 200	5 to 100	8 to 50	8 to 90	8 to 100	5 to 50	8 to 100	5 to 200	6 to 200	6 to 200	40 to 200	40 to 200	40 to 200	40 to 200
4	S	50 to 300	50 to 300	6 to 200	5 to 100	8 to 50	8 to 90	8 to 100	5 to 50	8 to 100	5 to 200	6 to 200	6 to 200	40 to 200	40 to 200	40 to 200	40 to 200
5	S	50 to 300	50 to 300	6 to 200	6 to 100	8 to 50	8 to 90	8 to 100	6 to 50	8 to 100	6 to 200	6 to 200	6 to 200	40 to 200	40 to 200	40 to 200	40 to 200
6	M	50 to 300	50 to 300	6 to 200	6 to 100	8 to 40	8 to 70	8 to 80	6 to 50	8 to 90	6 to 200	6 to 200	6 to 200	40 to 200	40 to 200	40 to 200	40 to 200
7	M	50 to 300	50 to 300	6 to 200	6 to 100	8 to 30	8 to 60	8 to 70	6 to 50	8 to 80	6 to 200	6 to 200	6 to 200	40 to 200	40 to 200	40 to 100	40 to 200
8	M	50 to 300	50 to 300	6 to 200	6 to 100	8 to 30	8 to 50	8 to 60	6 to 50	8 to 70	6 to 100	6 to 200	6 to 200	40 to 200	40 to 200	40 to 100	40 to 200
9	M	50 to 300	50 to 300	6 to 200	8 to 90	8 to 30	8 to 50	8 to 50	6 to 50	8 to 60	6 to 100	6 to 200	6 to 200	40 to 200	40 to 200	40 to 100	40 to 200
10	M	50 to 300	50 to 300	6 to 200	8 to 80	8 to 20	8 to 40	8 to 50	8 to 50	8 to 50	8 to 100	6 to 200	6 to 200	40 to 200	40 to 200	40 to 100	40 to 200
11	ML	50 to 300	50 to 300	6 to 200	8 to 80	8 to 20	8 to 40	8 to 50	8 to 50	8 to 60	8 to 100	6 to 200	6 to 200	40 to 200	40 to 200	40 to 100	40 to 200
12	ML	50 to 300	50 to 300	6 to 100	8 to 80	8 to 20	8 to 40	8 to 50	8 to 50	8 to 50	8 to 100	6 to 200	6 to 200	40 to 200	40 to 200	40 to 100	40 to 100
13	ML	50 to 300	50 to 300	6 to 100	8 to 70	8 to 20	8 to 40	8 to 40	8 to 50	8 to 50	8 to 100	6 to 200	6 to 200	40 to 200	40 to 200	40 to 100	40 to 100
14	ML	50 to 300	50 to 300	6 to 100	8 to 60	8 to 20	8 to 30	8 to 40	8 to 50	8 to 40	8 to 100	6 to 200	6 to 200	40 to 200	40 to 200	40 to 100	40 to 100
15	ML	50 to 300	50 to 300	6 to 100	8 to 60	8 to 20	8 to 30	8 to 40	8 to 50	8 to 40	8 to 100	6 to 100	6 to 200	40 to 200	40 to 200	40 to 100	40 to 100
16	ML	50 to 300	50 to 300	6 to 100	8 to 60	8 to 20	8 to 30	8 to 30	8 to 50	8 to 40	8 to 100	6 to 100	6 to 200	40 to 200	40 to 200	40 to 100	40 to 100
17	ML	50 to 300	50 to 300	6 to 100	8 to 60	8 to 10	8 to 30	8 to 30	8 to 50	8 to 30	8 to 90	6 to 100	6 to 100	40 to 200	40 to 200	40 to 100	40 to 100
18	ML	50 to 300	50 to 300	6 to 100	8 to 60	8 to 10	8 to 30	8 to 30	8 to 40	8 to 30	8 to 90	6 to 100	6 to 100	40 to 200	40 to 200	40 to 90	40 to 100
19	L	50 to 300	50 to 300	6 to 100	8 to 60	8 to 20	8 to 30	8 to 40	8 to 50	8 to 40	8 to 100	6 to 100	6 to 200	40 to 200	40 to 200	40 to 100	40 to 100
20	L	50 to 300	50 to 300	6 to 100	8 to 60	8 to 20	8 to 30	8 to 40	8 to 50	8 to 40	8 to 100	6 to 100	6 to 200	40 to 200	40 to 200	40 to 100	40 to 100
21	L	50 to 300	50 to 300	6 to 100	8 to 60	8 to 20	8 to 30	8 to 30	8 to 50	8 to 40	8 to 100	6 to 100	6 to 200	40 to 200	40 to 200	40 to 100	40 to 100
22	L	50 to 300	50 to 300	6 to 100	8 to 50	8 to 10	8 to 30	8 to 30	8 to 50	8 to 40	8 to 100	6 to 100	6 to 100	40 to 200	40 to 200	40 to 100	40 to 100
23	L	50 to 300	50 to 300	6 to 100	8 to 50	8 to 10	8 to 30	8 to 30	8 to 50	8 to 30	8 to 90	6 to 100	6 to 100	40 to 200	40 to 200	40 to 90	40 to 100
24	L	50 to 300	50 to 300	6 to 100	8 to 50	8 to 10	8 to 30	8 to 30	8 to 40	8 to 30	8 to 90	6 to 100	6 to 100	40 to 200	40 to 200	40 to 90	40 to 100
25	L	50 to 300	50 to 300	6 to 100	8 to 50	8 to 10	8 to 20	8 to 30	8 to 40	8 to 30	8 to 80	6 to 100	6 to 100	40 to 200	40 to 200	40 to 90	40 to 100
26	L	50 to 300	50 to 300	6 to 100	8 to 40	8 to 10	8 to 20	8 to 30	8 to 40	8 to 30	8 to 80	6 to 100	6 to 100	40 to 200	40 to 200	40 to 80	40 to 100