

CORPORATE INFORMATION

DENGENSHA TOA's Welding equipment is used by companies all over the world.

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NDZ Series

Stationary spot welder



[Single Phase AC Type]



[Inverter Type]



[Capacitor Discharge Type]



[Single Phase AC Type]
(Adjustable Lower Knee)



[DC Invert Type]
(Adjustable Lower Knee)

U.S.A./Mexico
[dengensha.com](https://www.dengensha.com)



U.K.
[dengensha.co.uk](https://www.dengensha.co.uk)



Germany
[dengensha.de](https://www.dengensha.de)



DENGENSHA TOA co., LTD.

<https://www.dengenshatoa.co.jp/>

1-23-1, Masugata, Tama-ku, Kawasaki-shi,
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TEL : 044-922-1121, FAX : 044-922-1100



Registered company: Dengensha Toa Co., Ltd.
Scope of registration: Design, development, manufacturing, and related service for resistance welders and related equipment (product operation and maintenance training and service/spare parts supply)
Related facilities: [Scope of activities: Same as above] Headquarters, Toyama plant, and Omi plant

Pioneering a New Dimension in Spot Welding

As a manufacturer of full line of resistance welding welders with extensive track record, Dengensha Toa has supplied high quality products not only in Japan, but to the rest of the world. In order to meet society's demands and customers' expectations, we will devote our effort to the advance of products that are environmentally-friendly energy-saving, safe, and high quality, and make further advancement to become a true global company.

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Features of NDZ

1. Wide Variety of Welder Model
2. High Quality for Nut/Bolt Welding
3. Easy Feeder Installation
4. Electrode Force Monitor
5. Pokayoke Function for Nut/Bolt
6. Network Management System

Non-Lubrication Cylinder

Easy Maintenance and Clean Environment

Long Stroke

75mm Stroke as standard, 115mm or 155mm Stroke are available(OPTION) for Deep Drawing Part or Long Beneath Bolt.

Free Stress for Operator

Rear Bottom Position for Air Exhaust

User-Friendly and High-Functional Controller

Handheld Program Box and High Speed Feedback by High Performance CPU. Large Capacity Memory for Maximum 255 weld schedule.

Strong Frame

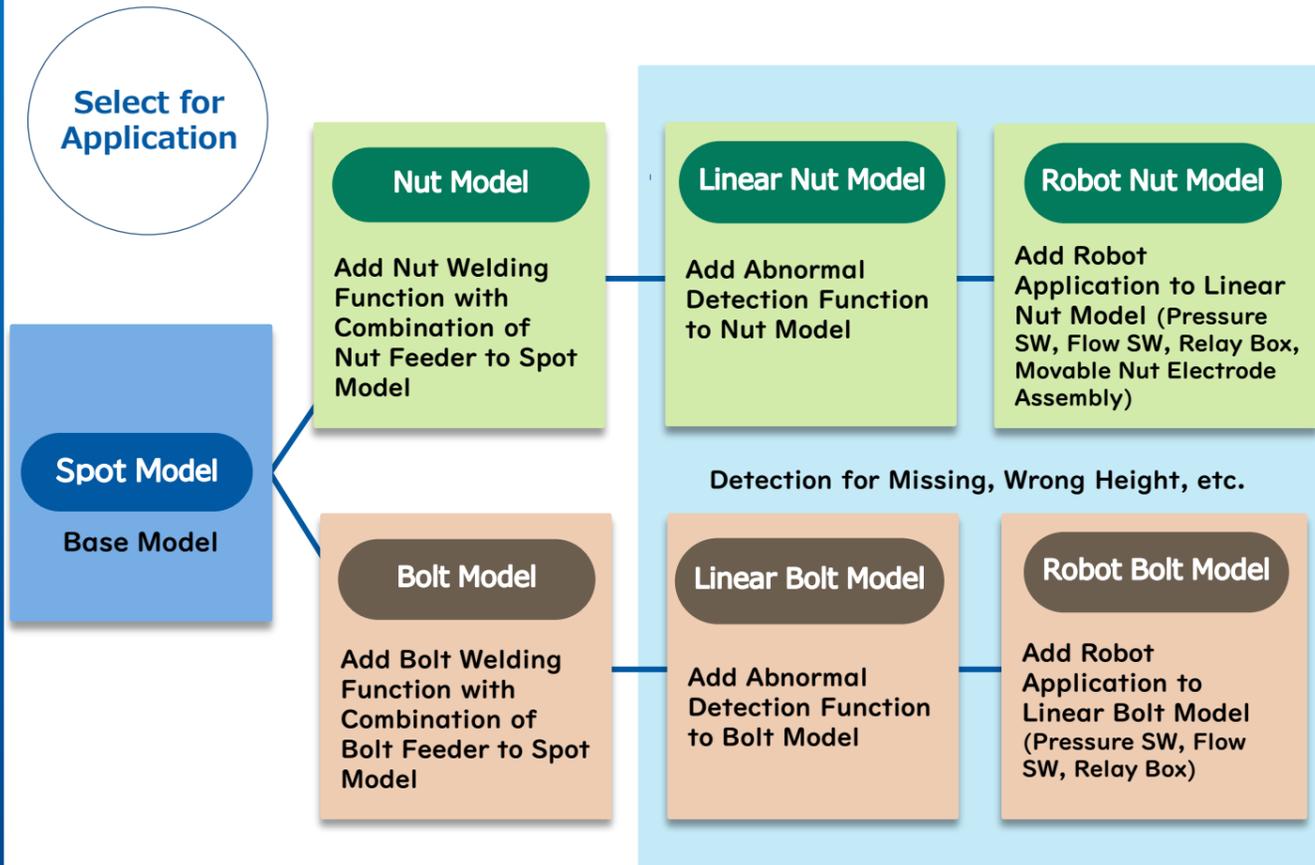
68% Relative Slipping decrease, comparing our previous products, for high quality welding.



Point 1

Wide Variety of Welder Model

Selectable Suitable Welder from Wide Variety according to Workpiece, Applications with covering Global Specifications for destinations.



Select for Size of Workpiece

Select for Weld Controller

- Standard Stroke ... 75mm
- Long Stroke ... 115mm, 155mm
- Throat Depth ... 400mm, 600mm
- Adjustable Lower Knee ... Throat Depth 400mm :
Throat Gap 215/270/325/380mm
Throat Depth 600mm:
Throat Gap 200/255/310/365mm

- Single Phase AC Type
- DC Inverter Type
- AC Inverter Type
- Capacitor Discharge Type

Single Phase AC Type

- Rapid Rising Current makes High Quality of Projection Welding
- High Strength Projection Welding by setting Pilot Current
- Selectable Suitable Control from Constant Current, Power Factor and HCCL(Heat Control Current Limit)

Capacity	Stroke	Power	Linear Encoders	Throat Depth	Welding force
35kVA	75st	single phase	Linear Encoders	400mm	6kN
50kVA	115st			600mm	10kN
70kVA	155st				
100kVA					

Note)
115/155 stroke are not available for 600mm Throat Depth/10kN Welding Force Model

DC Inverter Type

- Rapid Rising Current makes High Quality of Projection Welding
- Wide Weld Lobe and Stable Welding Quality by Efficient Heat through Continuously Temperature Rising in Weld Part
- Reduction of Expulsion by Control of Peak Current
- Detailed and Fine Adjustment for Weld Condition by msec setting for Weld Time
- Available Large Current Models for Thick Material Welding
- Suitable Aluminum Spot Welding

Capacity	Stroke	Power	Linear Encoders	Throat Depth	Welding force
50kVA	75st	three phase	Linear Encoders	400mm	6kN
70kVA	115st			600mm	10kN
100kVA	155st				
150kVA					

Note)
115/155 stroke are not available for 600mm Throat Depth/10kN Welding Force Model

AC Inverter Type

- Rapid Rising Current makes High Quality of Projection Welding
- Reduction of Expulsion by Control of Peak Current
- Low Cost for Modification from Single Phase AC Welder to AC Inverter
- No Polarity Effect, it is not Short Lifetime of Electrode, such as Galvanized Sheet Welding by DC Inverter Welder.
- Effective for Flicker Suppression

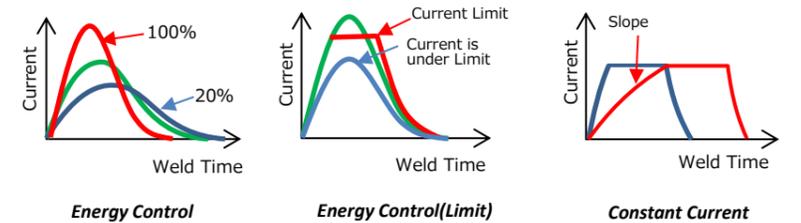
Capacity	Stroke	Power	Linear Encoders	Throat Depth	Welding force
50kVA	75st	three phase	Linear Encoders	400mm	6kN
70kVA	115st			600mm	10kN
	155st				

Note)
115/155 stroke are not available for 600mm Throat Depth/10kN Welding Force Model

Capacitor Discharge Type

- High Quality Welding with Low Heat Distortion/Weld Burning/Indentation by running Large Weld Current in short time
- Small Capacity and Energy-Saving Welder
- Energy is charged in Capacitor Bank, No Influence by Fluctuation of Power Supply and No Flicker.
- Energy Control Mode, Possible to Control Rising Current without Tap Change and Effective for Reducing Expulsion by using Limit Function
- Constant Current Mode, Possible for Detailed and Fine Control for Weld Current and Weld Time, setting Upslope as well.

Capacity	Stroke	Power	Linear Encoders	Throat Depth	Welding force
3kJ	75st	single phase	Linear Encoders	400mm	6kN
				600mm	10kN



Single Phase AC Type (Adjustable Lower Knee)

- Apply for Wide Variation for Workpiece Size

Capacity	Stroke	Power	Linear Encoders	Throat Depth	Welding force
70kVA	115st	single phase	Linear Encoders	400mm	6kN
100kVA	155st			600mm	10kN

DC Inverter Type (Adjustable Lower Knee)

- Apply for Wide Variation for Workpiece Size
- Available Large Current Models for Thick Material Welding
- Suitable Aluminum Spot Welding

Capacity	Stroke	Power	Linear Encoders	Throat Depth	Welding force
75kVA	115st	three phase	Linear Encoders	400mm	6kN
100kVA	155st			600mm	10kN

※Some Combinations may be not available depending on selected items. Please see P18 to identify Model Number and Specifications.

Point 2 High Quality for Nut/Bolt Welding

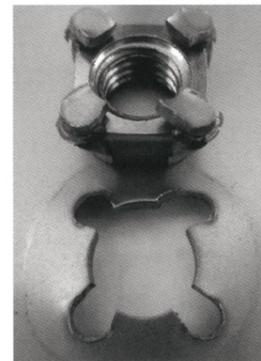
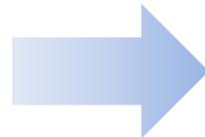
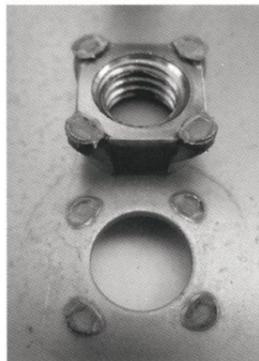
High Strength and Excellent Welding by Rapid and Accuracy Rising Current by Pilot Current Control and Strong Frame. Effective for High-tensile Material.

Interface Failure

Plug Failure

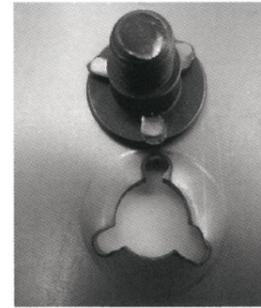
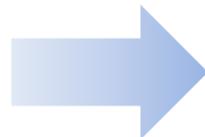
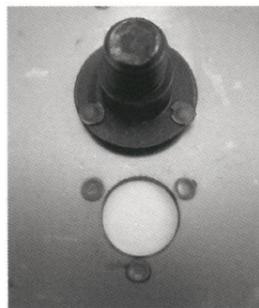
Base Material :
High Tensile Steel
80kgf Class t1.2

Nut:M8



Base Material :
High Tensile Steel
80kgf Class t1.2

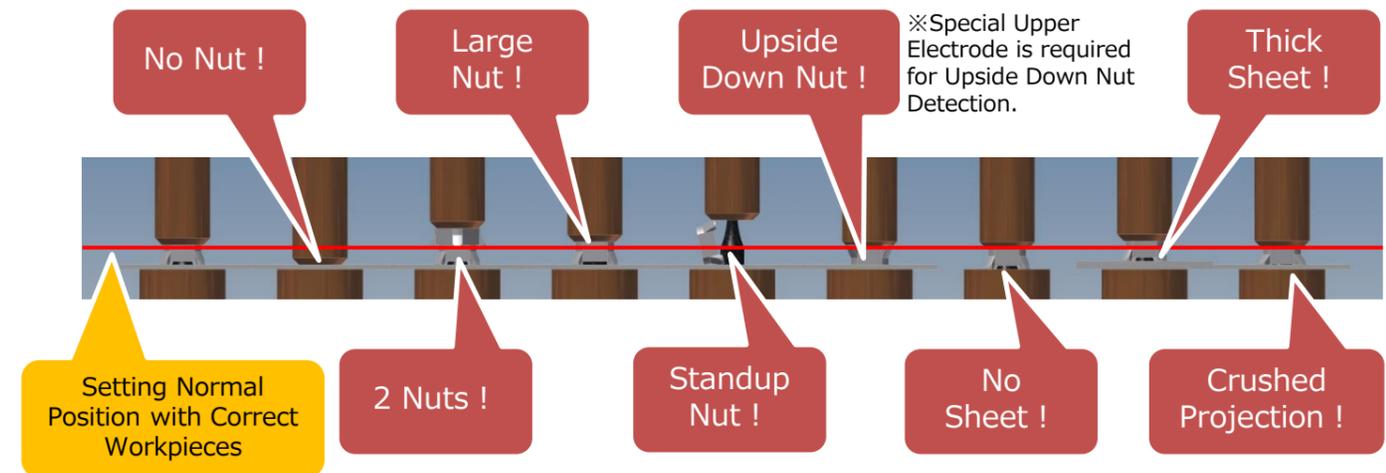
Bolt:M8



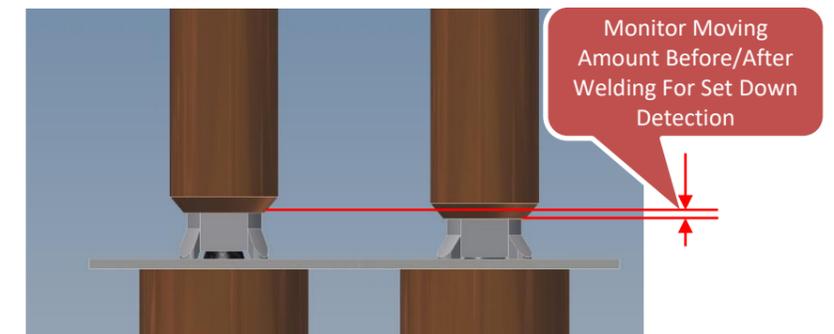
Point 5 Pokayoke Function for Nut/Bolt (Expect S-Model)

Detection by Linear Encoder Function for Missing Nut/Bolt/Panel, 2 Nuts/Panels, Standup-Nut, Wrong-Height-Nut, Wrong-Thickness-Panel, Irregular Set down, also available for Upside-down or Offset Position Nut with Special Electrode.

① Detection for Irregular Nut Positioning «example»



② Detection for Irregular Set down



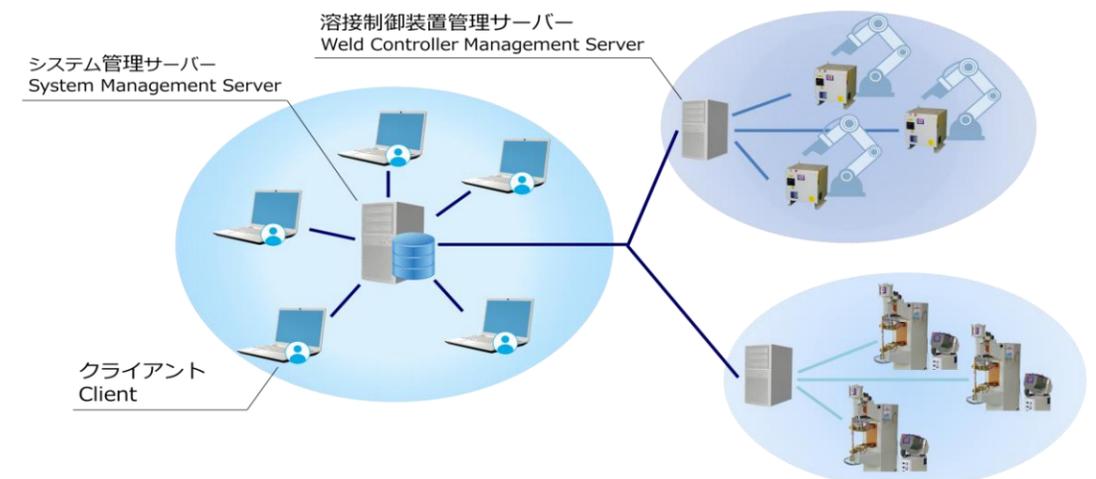
Point 3 Easy Feeder Installation

1. Mounting Holes for Feed Unit on Upper Arm Provided.
2. Easy Connection with connector to install DGT Feeder, No need Discrete Wiring or Power Supply for Feeder.
3. Welder Supply Air for Feeder and Nut Welding Electrode.

Note) 2、3 are equipped except S-Model

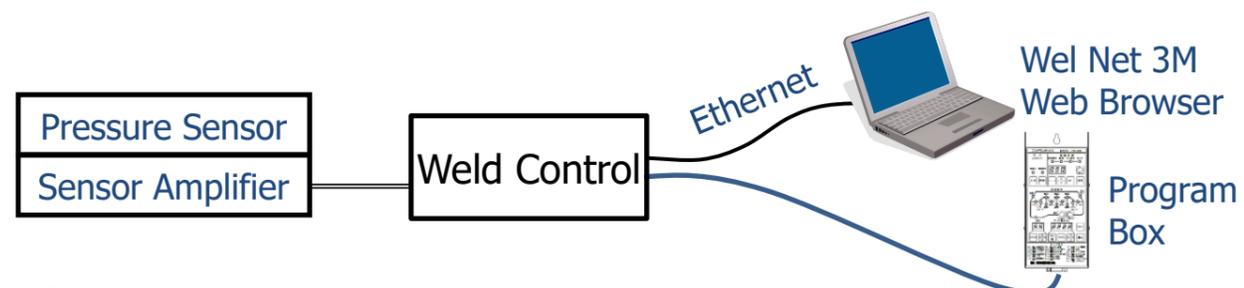
Point 6 Network Management System

Database of Unitary Management of Welding Condition and Weld Monitoring Result for Traceability or Weld Quality Management (Weld Network Management System Wel Net 3M is required.)

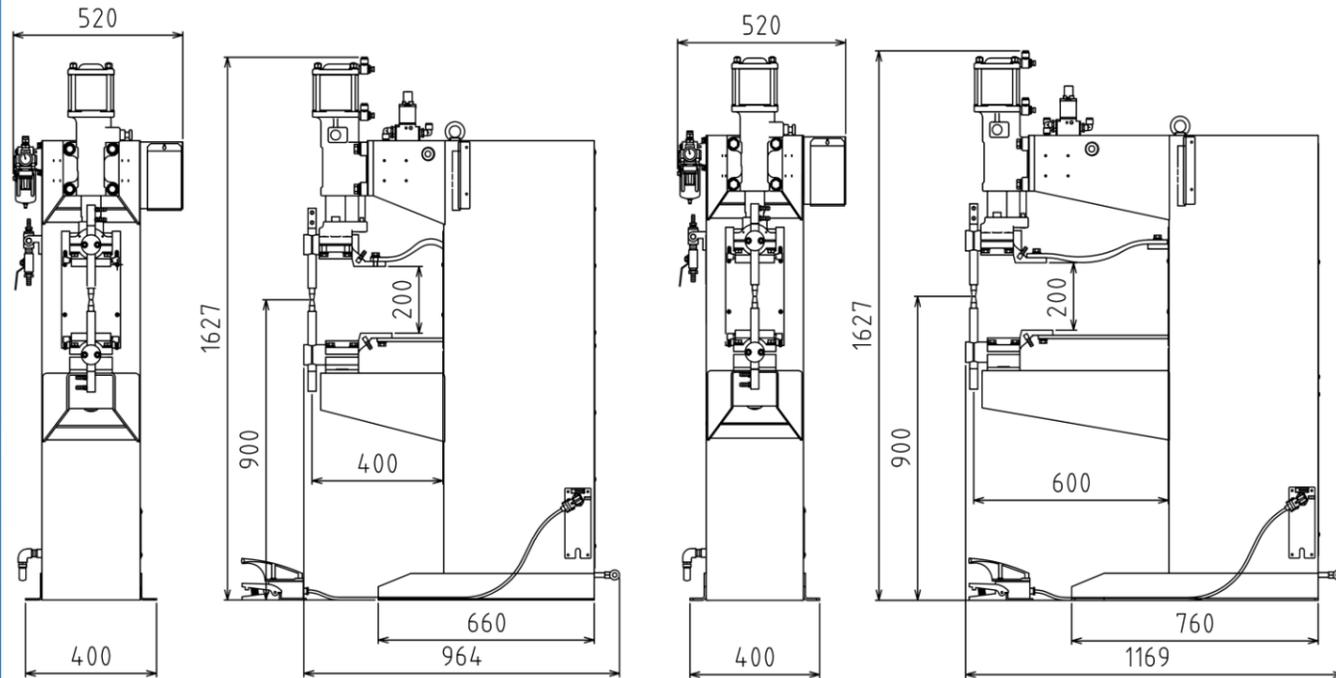


Point 4 Electrode Force Monitor

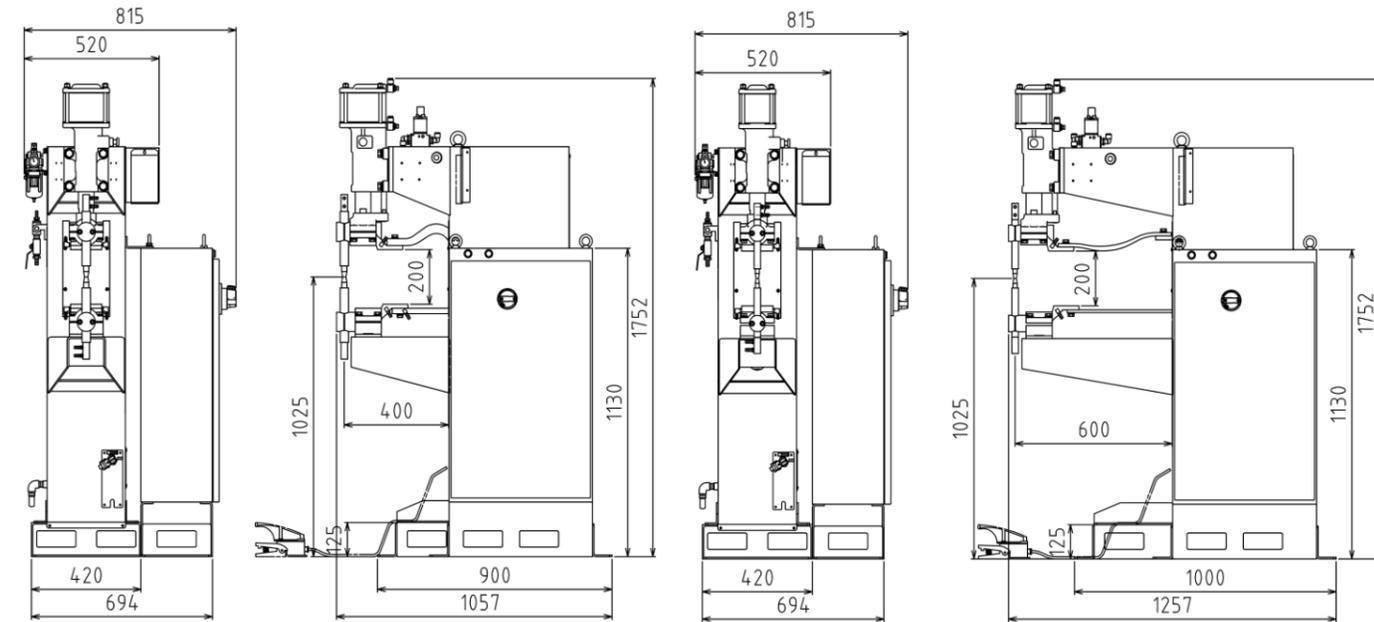
Monitor Actual Electrode Force and Check Upper/Lower Limit. (Expansion P.C.B. and Pressure Sensor/Amplifier is additionally required.)



Single-phase AC Type Spot Welder



DC Inverter Type Spot Welder



		Model									
Model #		NDZ-035-46B*J-*-E	NDZ-035-66B*J-*-E	NDZ-050-46B*J-*-E	NDZ-050-41B*J-*-E	NDZ-050-66B*J-*-E	NDZ-070-41B*J-*-E	NDZ-070-61B*J-*-E	NDZ-100-41B*J-*-E	NDZ-100-61B*J-*-E	
Rated Primary Voltage U_{1N}	V	1 Φ AC 200/400					1 Φ AC 400				
Rated Frequency U_{1N}	Hz	50/60									
Rated Capacity S_{50}	kVA	35		50			70		100		
Max. Input	kVA	106/122	93/108	124/144		104/120	188/214	158/180	313/371	257/304	
Max. Short Current I_{2CC}	A	17,000	15,000	20,000		17,000	25,000	21,000	33,000	27,000	
Allowable Duty Cycle	%	5.5/4.1	7.1/5.3	8.1/6.0		11.2/8.3	7.0/5.3	9.9/7.6	5.1/3.6	7.6/5.4	
Throat Depth l_1	mm	400	600	400		600	400	600	400	600	
Throat Gap e	mm	200									
Max. Electrode Force F_{max}	kN	6		10	6	10					
Total Stroke *1	mm	75									
Retracting Stroke	mm	60									
Working Stroke	mm	20									
Standard Working Height	mm	900									
Horn Diameter	mm	60		70	60	70					
Electrode Holder Diameter	mm	25		32	25	32					
Tip Diameter	mm	16		20	16	20					
Electrode Taper		1/10									
Cooling Water Flow Rate q	ℓ /min	8						10			
Weld Controller *2		NWC-903-11-R01									
Program Box		PB-900-11									
Current Feed Back		Secondary Toroidal Coil									
Apprx. Mass m	kg	255	305	265	270	320	310	360	360	410	

*1: 115mm, 155mm are available(Option), except 61 model(600mm Throat Depth/10kN Electrode Force)

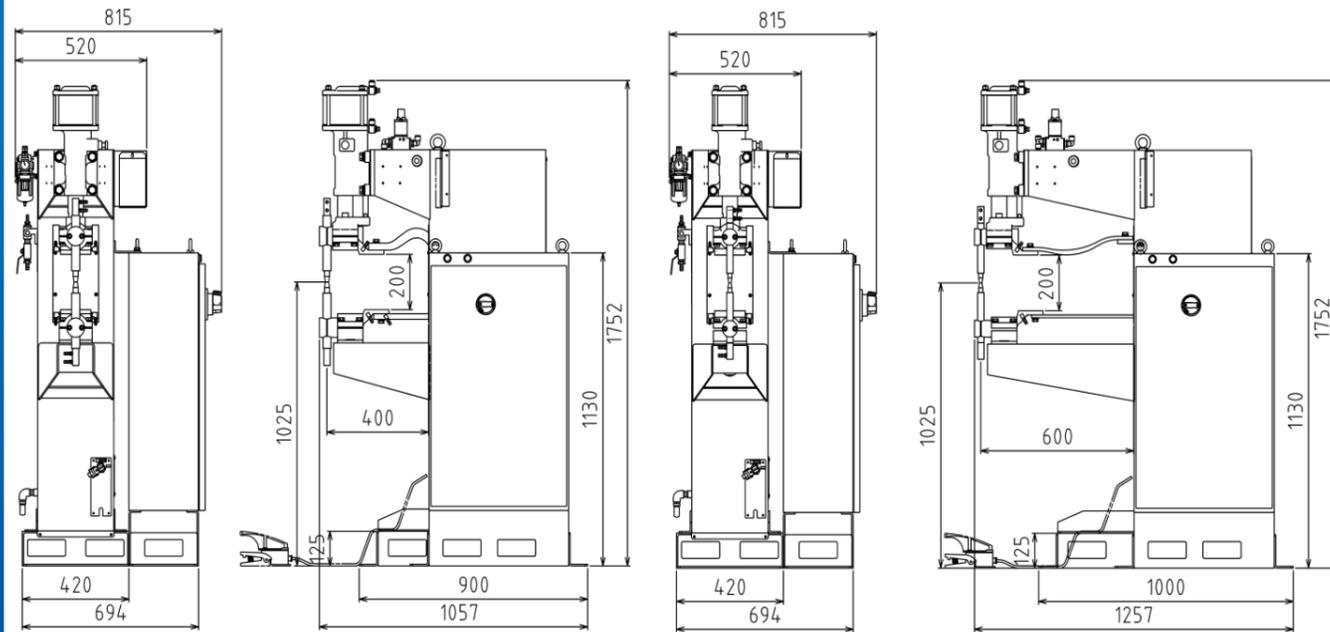
*2: KD-1060 is available(Option)

		Model										
Model #		NDZ-E50-46BSJ-S-E	NDZ-E50-41BSJ-S-E	NDZ-E50-66BSJ-S-E	NDZ-E70-46BSJ-S-E	NDZ-E70-41BSJ-S-E	NDZ-E70-66BSJ-S-E	NDZ-E70-61BSJ-S-E	NDZ-HA0-41BSJ-S-E	NDZ-HA0-61BSJ-S-E	NDZ-EF0-41BSJ-S-E	
Rated Primary Voltage U_{1N}	V	3 Φ AC 400										
Rated Frequency U_{1N}	Hz	50/60										
Rated Capacity S_{50}	kVA	50			70			100		150		
Max. Input	kVA	189	180	180	231	223	223	320	310	405		
Max. Short Current I_{2CC}	A	22,000	21,000	21,000	27,000	26000	26000	32000	31000	42,000		
Allowable Duty Cycle	%	3.5	3.8	3.8	4.5	4.9		4.8	5.2	6.8		
Throat Depth l_1	mm	400	600	600	400	600		400	600	400		
Throat Gap e	mm	200										
Max. Electrode Force F_{max}	kN	6	10	6	6	10	6	10	10	10	10	
Total Stroke *1	mm	75										
Retracting Stroke	mm	60										
Working Stroke	mm	20										
Standard Working Height	mm	1025										
Horn Diameter	mm	60	70	60	60	70	60	70	70	70	70	
Electrode Holder Diameter	mm	25	32	25	25	32	25	32	32	32	32	
Tip Diameter	mm	16	20	16	16	20	16	20	20	20	20	
Electrode Taper		1/10										
Cooling Water Flow Rate q	ℓ /min	20										
Weld Controller *2		SWIE-1000-WS40-S03-TB-C-E							SWIE-1000-WS80-S03-E2-C-E			
Program Box		PB-1000-11										
Current Feed Back		Primary CT										
Apprx. Mass m	kg	330	335	370	335	340	375	380	375	415	385	

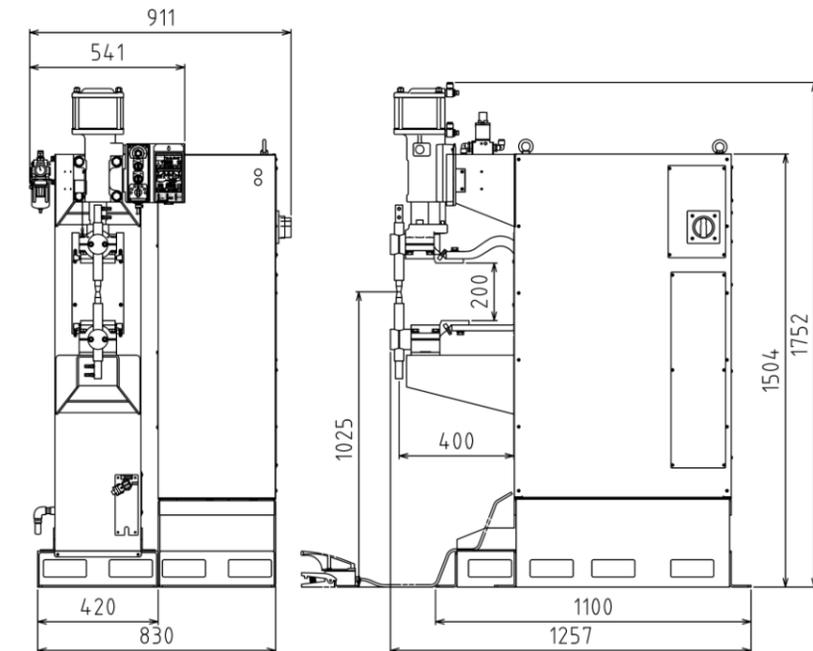
*1: 115mm, 155mm are available(Option), except 61 model(600mm Throat Depth/10kN Electrode Force)

*2: DIT Series are available(Option)

AC Inverter Type Spot Welder



Capacitor Discharge Type Spot Welder



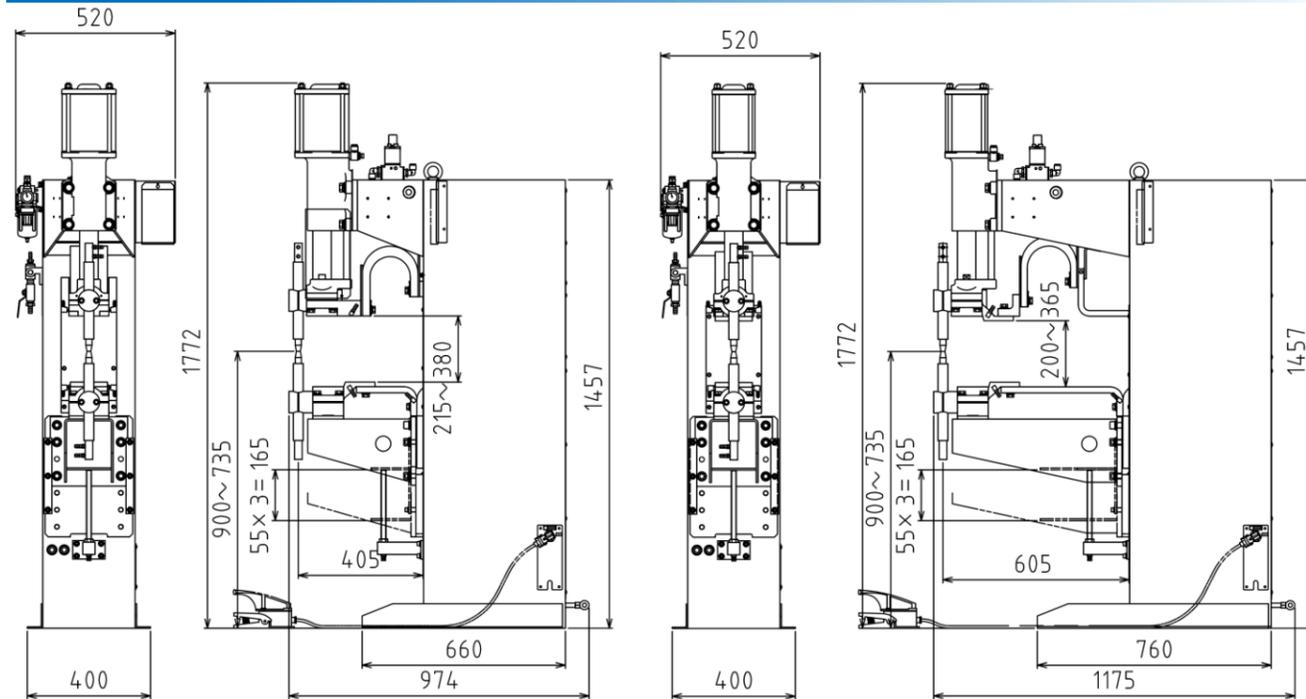
		Model							
Model #		NDZ-A50-46BSJ-S-E	NDZ-A50-41BSJ-S-E	NDZ-A50-66BSJ-S-E	NDZ-A70-46BSJ-S-E	NDZ-A70-41BSJ-S-E	NDZ-A70-66BSJ-S-E	NDZ-A70-61BSJ-S-E	
Rated Primary Voltage U_{1N}	V	3 ϕ AC 400							
Rated Frequency U_{1N}	Hz	50/60							
Rated Capacity S_{50}	kVA	50				70			
Max. Input	kVA	122/144		106/122	188/214		158/180		
Max. Short Current I_{2CC}	A	20,000		17,000	25,000		21,000		
Allowable Duty Cycle	%	8.1/6.1		11.2/8.3	6.9/5.3		9.8/7.5		
Throat Depth l_1	mm	400		600	400		600		
Throat Gap e	mm	200							
Max. Electrode Force F_{max}	kN	6	10	6	6	10	6	10	
Total Stroke *1	mm	75							
Retracting Stroke	mm	60							
Working Stroke	mm	20							
Standard Working Height	mm	1025							
Horn Diameter	mm	60	70	60	60	70	60	70	
Electrode Holder Diameter	mm	25	32	25	25	32	25	32	
Tip Diameter	mm	16	20	16	16	20	16	20	
Electrode Taper		1/10							
Cooling Water Flow Rate q	l/min	20							
Weld Controller *2		SWIE-1050-WS80-S03-E2B-C-E							
Program Box		PB-1000-11							
Current Feed Back		Primary CT							
Apprx. Mass m	kg	435	440	475	470	475	510	515	

注1: 115mm,155mm are available(OPTION), except 61 model(600mm Throat Depth/10kN Electrode Force)

注2: AIT Series are available(OPTION)

		Model			
Model #		NDZ-CA0-46BSJ-Y-E	NDZ-CA0-41BSJ-Y-E	NDZ-CA0-46BSJ-J-E	NDZ-CA0-41BSJ-J-E
Rated Primary Voltage U_{1N}	V	1 ϕ AC 200		1 ϕ AC 400	
Rated Frequency U_{1N}	Hz	50/60			
Max. Charge Voltage U_{cmax}	V	900			
Nominal Energy Capacity H	kJ	3			
Peak of Short Current I_P	A	50,000			
Standard Welding Frequency N_w		20 times/min			
Throat Depth l_1	mm	400			
Throat Gap e	mm	200			
Max. Electrode Force F_{max}	kN	6	10	6	10
Total Stroke	mm	75			
Retracting Stroke	mm	60			
Working Stroke	mm	20			
Standard Working Height	mm	1025			
Horn Diameter	mm	60	70	60	70
Electrode Holder Diameter	mm	25	32	25	32
Tip Diameter	mm	16	20	16	20
Electrode Taper		1/10			
Cooling Water Flow Rate q	l/min	10			
Weld Controller		NCDW-1000-30-A		NCDW-1000-30-J	
Program Box		PB-900-11			
Current Control		ENG/CC			
Apprx. Mass m	kg	690	700	690	700

Single-phase AC Type Spot welder (Adjustable Lower Knee)

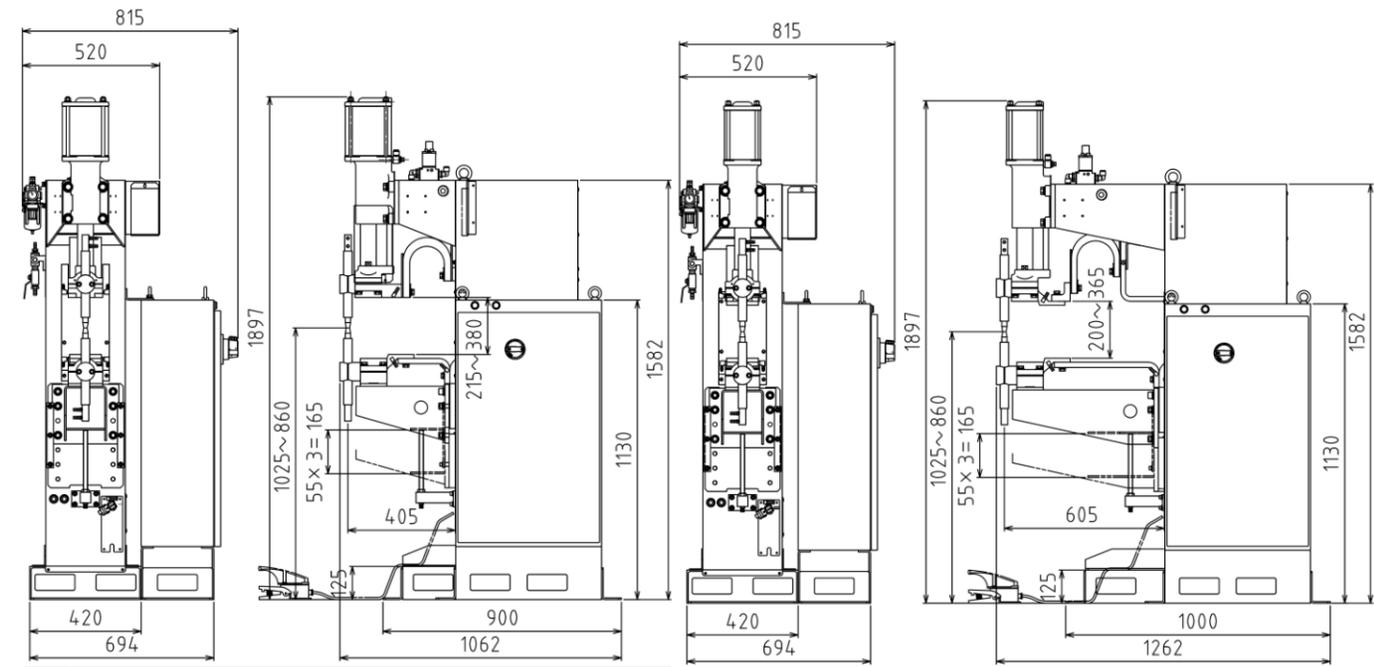


		Model																			
Model #		NDZ-070-57K*J*-E				NDZ-070-51K*J*-E				NDZ-070-77K*J*-E				NDZ-100-51K*J*-E				NDZ-100-77K*J*-E			
Rated Primary Voltage U _{1N}	V	1Φ AC 400																			
Rated Frequency U _{1N}	Hz	50/60																			
Rated Capacity S ₅₀	kVA	70									100										
Max. Input	kVA	165/189	154/176	143/163	124/141	165/189	154/176	143/163	124/141	135/154	128/146	120/137	113/129	284/338	265/315	246/293	227/270	237/281	218/259	199/236	180/214
Max. Short Current I _{2CC}	A	22,000	20,500	19,000	16,500	22,000	20,500	19,000	16,500	18,000	17,000	16,000	15,000	30,000	28,000	26,000	24,000	25,000	23,000	21,000	19,000
Allowable Duty Cycle	%	11.9/6.9	13.7/7.9	16.0/9.2	21.2/12.2	11.9/6.9	13.7/7.9	16.0/9.2	21.2/12.2	17.8/10.3	19.9/11.5	22.5/13.0	25.6/14.8	8.2/4.4	9.4/5.0	10.9/5.8	12.8/6.9	11.8/6.3	13.9/7.5	16.7/9.0	20.4/10.9
Throat Depth ₁	mm	400				600				400				600							
Throat Gap _e	mm	215	270	325	380	215	270	325	380	200	255	310	365	215	270	325	380	200	255	310	365
Max. Electrode Force F _{max}	kN	6				10				6				10				6			
Total Stroke *1	mm	155																			
Retracting Stroke	mm	140																			
Standard Working Height	mm	900																			
Horn Diameter	mm	70																			
Electrode Holder Diameter	mm	32																			
Tip Diameter	mm	20																			
Electrode Taper		1/10																			
Cooling Water Flow Rate q	ℓ/min	8									10										
Weld Controller *2		NWC-903-11-R01																			
Program Box		PB-900-11																			
Current Feed Back		Secondary Toroidal Coil																			
Apprx. Mass _m	kg	380				390				400				410				420			

注1: 115mm is available (Option)

注2: KD-1060 is available (Option)

DC Inverter Type Spot Welder (Adjustable Lower Knee)



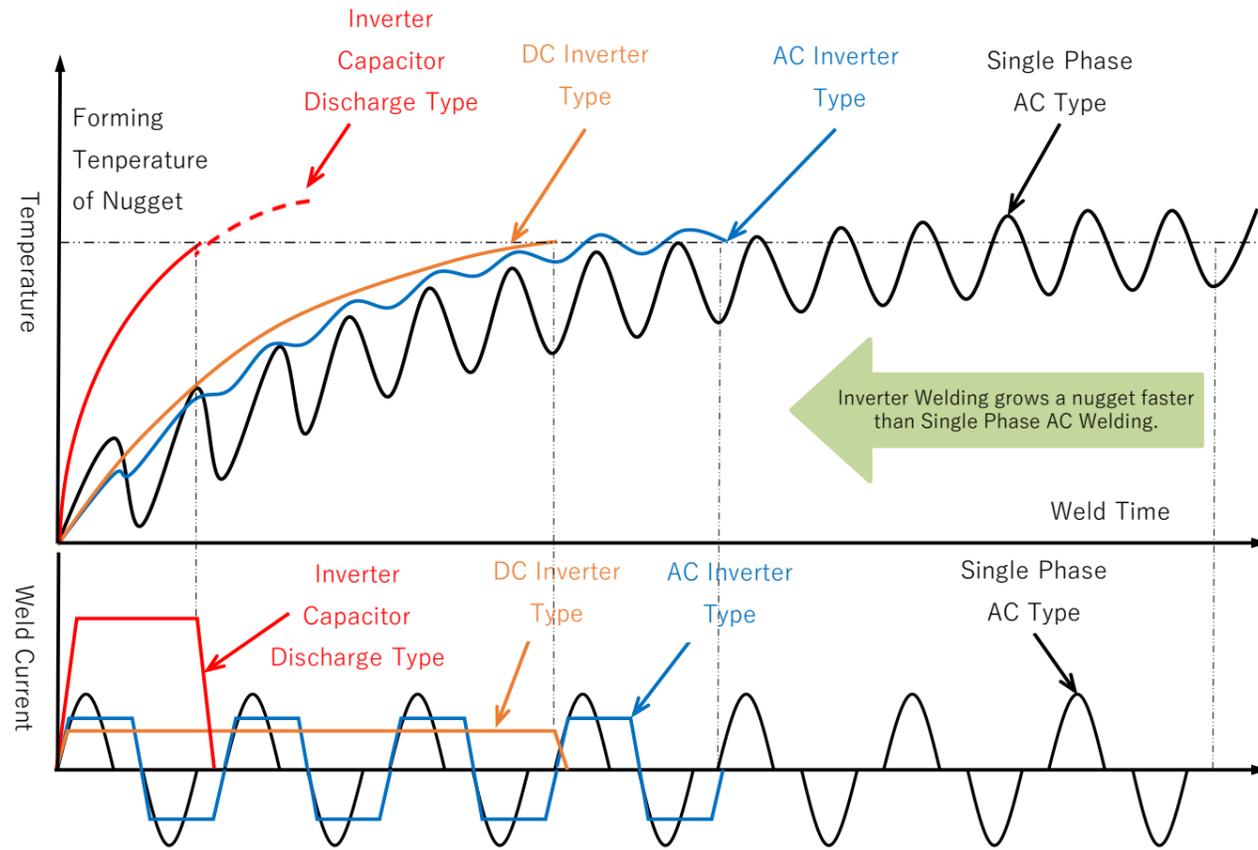
		Model																							
Model #		NDZ-E75-57KSJ-S-E			NDZ-E75-51K*J-S-E			NDZ-E75-77K*J-S-E			NDZ-HA0-51K*J-S-E			NDZ-HA0-77K*J-S-E			NDZ-EF0-51K*J-S-E								
Rated Primary Voltage U _{1N}	V	3Φ AC 400																							
Rated Frequency U _{1N}	Hz	50/60																							
Rated Capacity S ₅₀	kVA	75						100						150											
Max. Input	kVA	240			240			231			320			310			405								
Max. Short Current I _{2CC}	A	28,000			28,000			27,000			32,000			31,000			42,000								
Allowable Duty Cycle	%	4.8			4.8			5.2			4.9			5.2			6.9								
Throat Depth ₁	mm	400						600						400											
Throat Gap _e	mm	215	270	325	380	215	270	325	380	200	255	310	365	215	270	325	380	200	255	310	365	215	270	325	380
Max. Electrode Force F _{max}	kN	6			10			6			10			6			10								
Total Stroke *1	mm	155																							
Retracting Stroke	mm	140																							
Standard Working Height	mm	1025/997.5/970/942.5																							
Horn Diameter	mm	70																							
Electrode Holder Diameter	mm	32																							
Tip Diameter	mm	20																							
Electrode Taper		1/10																							
Cooling Water Flow Rate q	ℓ/min	20																							
Weld Controller *2		SWIE-1000-WS40-S03-TB-C-E						SWIE-1000-WS80-S03-E2-C-E																	
Program Box		PB-1000-11																							
Current Feed Back		Primary CT																							
Apprx. Mass _m	kg	360			365			400			400			435			410								

*1: 115mm is available (Option)

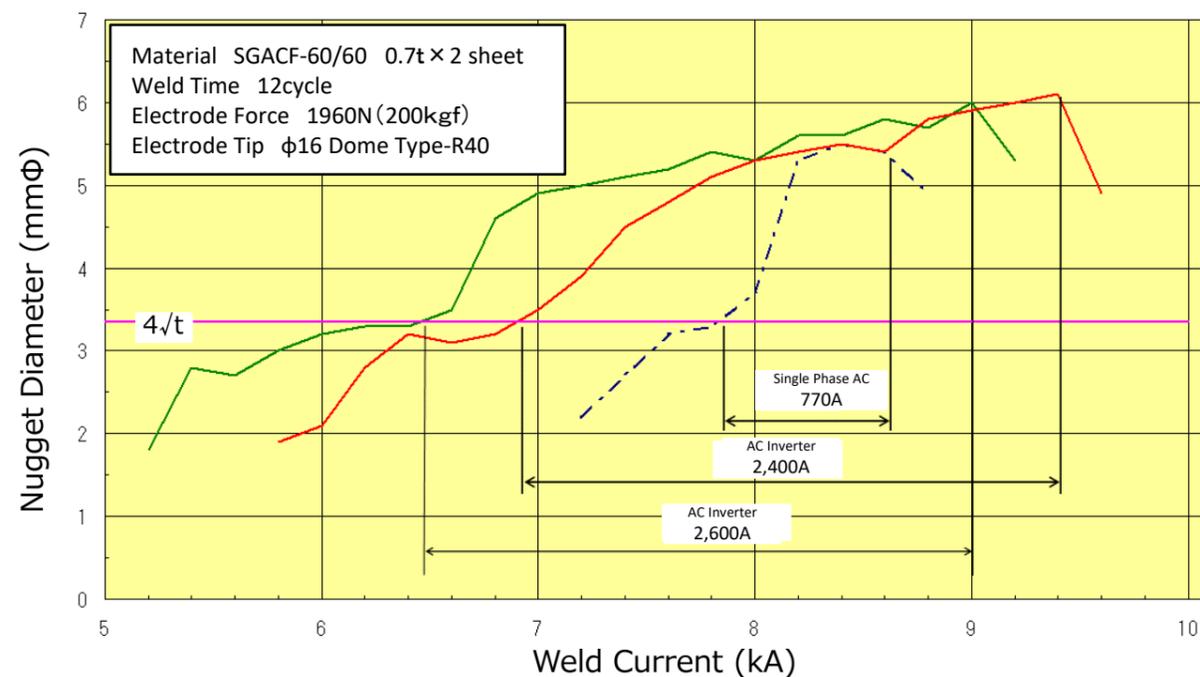
*2: DIT Series are available (Option)

Features of Each Weld Controller

- Correlation of Temperature Rise between Current Waveform and Nugget As Inverter Type is better Heat Efficiency than Single Phase AC Type, it improves Weld Quality.



Stable Range of Galvanized Steel Sheet



NDZ Model Specification

Note) Some Combinations may not be available depending on selected specifications.

② Transformer Capacity

03	1φ AC 35kVA
05	1φ AC 50kVA
07	1φ AC 70kVA
10	1φ AC 100kVA
A5	AC-Inverter 50kVA
A7	AC-Inverter 70kVA
E5	DC-Inverter 50kVA(Frequency 1000Hz)
E7	DC-Inverter 70kVA(Frequency 1000Hz) DC-Inverter 75kVA(Frequency 1000Hz)※
EF	DC-Inverter 150kVA(Frequency 1000Hz) DC-Inverter 150kVA(Frequency 1000Hz)※
HA	DC-Inverter 100kVA(Frequency 1800Hz) DC-Inverter 100kVA(Frequency 1800Hz)※
CA	Capacitor Discharge 6 kVA

※Lower Adjustable Knee

③ Identification Specifications

5	35kVA Standard Fixed Lower Knee 75kVA Adjustable Lower Knee
0	50/70/100kVA Standard Fixed Lower Knee 70/100/150kVA Adjustable Lower Knee

④ Throat Depth

4	400mm Fixed Lower Knee
5	400mm Adjustable Lower Knee
6	600mm Fixed Lower Knee
7	600mm Adjustable Lower Knee

⑤ Electrode Force

6	6kN φ60 Horn - φ25 Holder - φ16 Tip(Taper 1/10) 6kN φ60 Horn - φ25 Holder - φ15.875 Tip(MT#2)
7	6kN φ70 Horn - φ32 Holder - φ20 Tip(Taper 1/10)
8	6kN φ70 Horn - φ32 Holder - φ16 Tip(Taper 1/10) 6kN φ70 Horn - φ32 Holder - φ15.875 Tip(MT#2)
1	10kN φ70 Horn - φ32 Holder - φ20 Tip(Taper 1/10) 10kN φ70 Horn - φ32 Holder - φ15.875 Tip(MT#2)
A	10kN φ70 Horn - φ32 Holder - φ16 Tip(Taper 1/10)

⑥ Cylinder Unit

B	Total Stroke 75mm, w/o Spring, Mechanical Stopper Double Stroke
E	Total Stroke 115mm, w/o Spring, Single Stroke
F	Total Stroke 115mm, w/o Spring, Double Stroke by Retract Piston and Sol-Valve
K	Total Stroke 155mm, w/o Spring, Single Stroke
L	Total Stroke 155mm, w/o Spring, Double Stroke by Retract Piston and Sol-Valve

⑦ Specification 1 *1

S	Spot
N	Nut
L	Linear Nut
R	Robot Nut
B	Bolt
M	Linear Bolt
T	Robot Bolt

⑧ Specification 2

J	Japan (Japanese)
K	Japan (Japanese), Air Inlet Upward
A	Asia (English)
B	Asia (English), Air Inlet Upward
U	UL/CSA Conformity
W	UL/CSA Conformity, Air Inlet Upward
C	CE
D	CE, Air Inlet Upward

⑨ Power Source

A	200V - 50Hz
B	200V - 60Hz
C	220V - 50Hz
D	220V - 60Hz
E	230V - 50Hz
F	230V - 60Hz
G	380V - 50Hz / 380V ± 15% - 50(60)Hz Capacitor Discharge
H	380V/60Hz
J	400V - 50Hz / 400V ± 15% - 50(60)Hz Capacitor Discharge
K	400V - 60Hz
L	415V - 50Hz / 415V ± 15% - 50(60)Hz Capacitor Discharge
M	440V - 50Hz / 440V ± 15% - 50(60)Hz Capacitor Discharge
N	440V - 60Hz
P	460V - 60Hz / 460V ± 15% - 50(60)Hz Capacitor Discharge
R	480V - 60Hz / 480V ± 15% - 50(60)Hz Capacitor Discharge
S	φ3 - 400V ± 10%
T	φ3 - 460V ± 10%
U	φ3 - 200V ± 10%
W	φ3 - 230V ± 10%
Y	200V - 50(60)Hz Capacitor Discharge

⑩ Revision
A,B,C,D,E,...

① Series
NDZ NDZ Series

Model #
① - ② - ③ - ④ - ⑤ - ⑥ - ⑦ - ⑧ - ⑨ - ⑩

Selected Items/Option

#	item	備考 note
1	Direction for Air Piping Inlet	Sideways/Upward
2	Flow Meter	Ball Type Flow Indicator on Water Outlet
3	Platen	Upper□130mm-70mm Pitch/Lower□150mm-100mm Pitch
4	Initiation Connector	Harting/Nanaboshi (Power Supply for Feeder is not available if Nanaboshi)
5	Upper/Lower Electrode	For Spot, Nut, Bolt Welding or etc
6	Initiation Switch	Foot Switch or Single Palm Button
7	Program/Display	ProgramBox/Monitor Box
8	Length of Program Cable	3m/5m/10m
9	Ethernet Network Function	Option for Single Phase AC Welder.(Network P.C.B. is required.) Standard Equipped for other Models.
10	Base	125mm Height Base with Folk Lift Holes. Standard Equipped for Inverter or Capacitor Discharge Welders.
11	Feeder Installation	Only for purchasing Dengensha Toa Feeder together

Required Utilities for Installation

Note) Values are just for reference. If there is Regulation or Standard by Local Region/Factory, it shall override below.

Model	Power Source				Cooling Water			Air			Installation	
	Voltage	Capacity	Corcuit Breaker	Cable	Flow Rate	O.D. for Hose Insert [Thread Diamater]	Hose I.D.	Compressor Capacity	O.D. for Hose Insert [Thread Diamater]	Hose I.D.	Anchor Bolt	Ground Wire
NDZ-035-46	1ΦAC400 V (1ΦAC200 V)	35kVA	100A (150A)	22mm ² (38mm ²)	8ℓ/min	13mm [1/2"]	12.7mm	1.5kW	13mm [1/2"]	12.7mm	12mm	14mm ² (22mm ²)
NDZ-035-66	1ΦAC400 V (1ΦAC200 V)	35kVA	100A (150A)	22mm ² (38mm ²)	8ℓ/min	13mm [1/2"]	12.7mm	1.5kW	13mm [1/2"]	12.7mm	12mm	14mm ² (22mm ²)
NDZ-050-46	1ΦAC400 V (1ΦAC200 V)	50kVA	100A (200A)	22mm ² (60mm ²)	8ℓ/min	13mm [1/2"]	12.7mm	1.5kW	13mm [1/2"]	12.7mm	12mm	14mm ² (38mm ²)
NDZ-050-41	1ΦAC400 V (1ΦAC200 V)	50kVA	100A (200A)	22mm ² (60mm ²)	8ℓ/min	13mm [1/2"]	12.7mm	1.5kW	13mm [1/2"]	12.7mm	12mm	14mm ² (38mm ²)
NDZ-050-66	1ΦAC400 V (1ΦAC200 V)	50kVA	100A (200A)	22mm ² (60mm ²)	8ℓ/min	13mm [1/2"]	12.7mm	1.5kW	13mm [1/2"]	12.7mm	12mm	14mm ² (38mm ²)
NDZ-070-41	1ΦAC400 V	70kVA	150A	38mm ²	8ℓ/min	13mm [1/2"]	12.7mm	1.5kW	13mm [1/2"]	12.7mm	12mm	22mm ²
NDZ-070-61	1ΦAC400 V	70kVA	150A	38mm ²	8ℓ/min	13mm [1/2"]	12.7mm	1.5kW	13mm [1/2"]	12.7mm	12mm	22mm ²
NDZ-100-41	1ΦAC400 V	100kVA	200A	60mm ²	10ℓ/min	13mm [1/2"]	12.7mm	1.5kW	13mm [1/2"]	12.7mm	12mm	38mm ²
NDZ-100-61	1ΦAC400 V	100kVA	200A	60mm ²	10ℓ/min	13mm [1/2"]	12.7mm	1.5kW	13mm [1/2"]	12.7mm	12mm	38mm ²

※() for 200V

Model	Power Source				Cooling Water			Air			Installation	
	Voltage	Capacity	Corcuit Breaker	Cable	Flow Rate	O.D. for Hose Insert [Thread Diamater]	Hose I.D.	Compressor Capacity	O.D. for Hose Insert [Thread Diamater]	Hose I.D.	Anchor Bolt	Ground Wire
NDZ-E50-46	3ΦAC400 V	50kVA	100A	22mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	14mm ²
NDZ-E50-41	3ΦAC400 V	50kVA	100A	22mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	14mm ²
NDZ-E50-66	3ΦAC400 V	50kVA	100A	22mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	14mm ²
NDZ-E50-61	3ΦAC400 V	50kVA	100A	22mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	14mm ²
NDZ-E70-46	3ΦAC400 V	70kVA	100A	38mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	22mm ²
NDZ-E70-41	3ΦAC400 V	70kVA	100A	38mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	22mm ²
NDZ-E70-66	3ΦAC400 V	70kVA	100A	38mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	22mm ²
NDZ-E70-61	3ΦAC400 V	70kVA	100A	38mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	22mm ²
NDZ-HA0-41	3ΦAC400 V	100kVA	200A	60mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	38mm ²
NDZ-HA0-61	3ΦAC400 V	100kVA	200A	60mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	38mm ²
NDZ-EF0-41	3ΦAC400 V	150kVA	200A	60mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	38mm ²

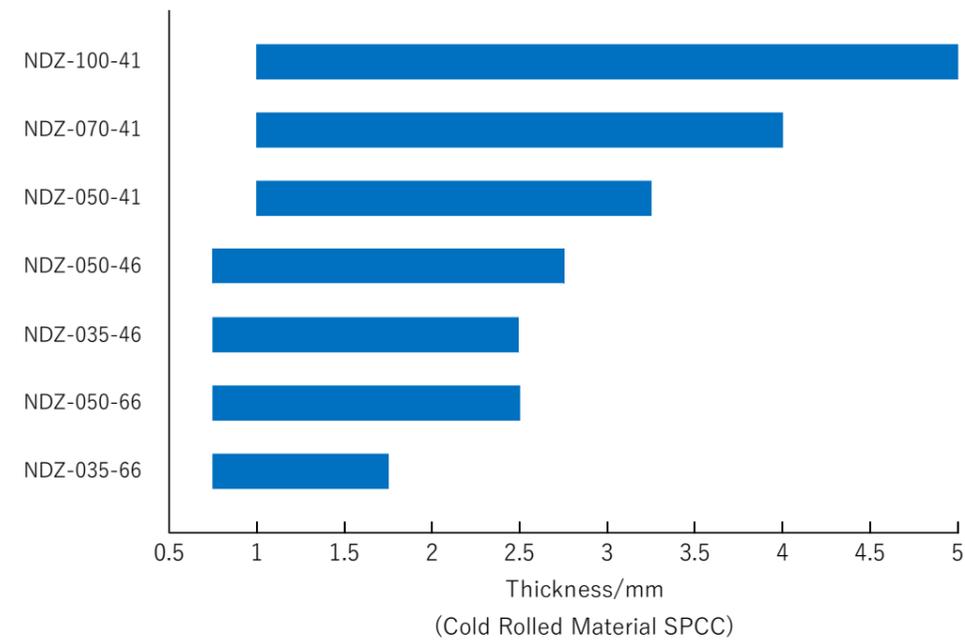
Model	Power Source				Cooling Water			Air			Installation	
	Voltage	Capacity	Corcuit Breaker	Cable	Flow Rate	O.D. for Hose Insert [Thread Diamater]	Hose I.D.	Compressor Capacity	O.D. for Hose Insert [Thread Diamater]	Hose I.D.	Anchor Bolt	Ground Wire
NDZ-A50-46	3ΦAC400 V	50kVA	200A	60mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	38mm ²
NDZ-A50-41	3ΦAC400 V	50kVA	200A	60mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	38mm ²
NDZ-A50-66	3ΦAC400 V	50kVA	200A	60mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	38mm ²
NDZ-A50-61	3ΦAC400 V	50kVA	200A	60mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	38mm ²
NDZ-A70-46	3ΦAC400 V	70kVA	200A	60mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	38mm ²
NDZ-A70-41	3ΦAC400 V	70kVA	200A	60mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	38mm ²
NDZ-A70-66	3ΦAC400 V	70kVA	200A	60mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	38mm ²
NDZ-A70-61	3ΦAC400 V	70kVA	200A	60mm ²	20ℓ/min	20.5mm [3/4"]	19mm	1.5kW	13mm [1/2"]	12.7mm	12mm	38mm ²

Model	Power Source				Cooling Water			Air			Installation	
	Voltage	Capacity	Corcuit Breaker	Cable	Flow Rate	O.D. for Hose Insert [Thread Diamater]	Hose I.D.	Compressor Capacity	O.D. for Hose Insert [Thread Diamater]	Hose I.D.	Anchor Bolt	Ground Wire
NDZ-CA0-46	1ΦAC400 V (1ΦAC200 V)	6kVA	20A (30A)	10mm ²	10L/min	13mm [1/2"]	12.7mm	1.5kW	13mm [1/2"]	12.7mm	12mm	14mm ²
NDZ-CA0-41	1ΦAC400 V (1ΦAC200 V)	6kVA	20A (30A)	10mm ²	10L/min	13mm [1/2"]	12.7mm	1.5kW	13mm [1/2"]	12.7mm	12mm	14mm ²

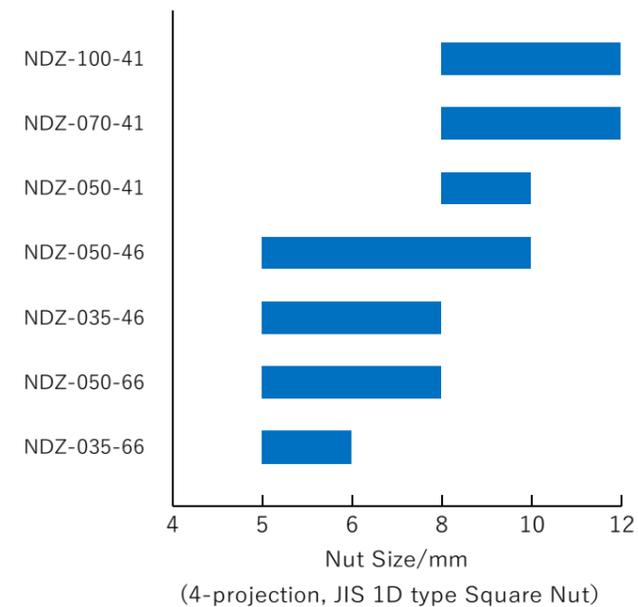
※() for 200V

Weldability

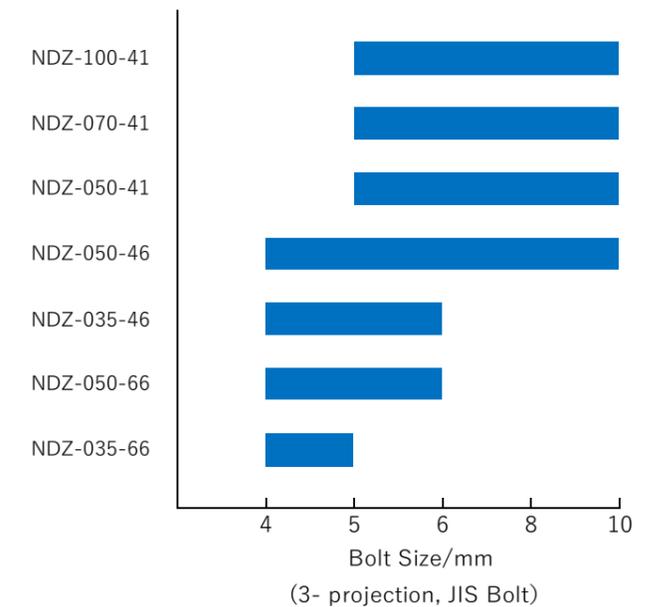
[Spot]



[Nut]



[Bolt]



MEMO

MEMO