

Shanghai Liangxin Electrical Co., Ltd.**(NDG3-500/630/800 Product Specification)**

(IPD-ENG-DEV-T20 A1 2016-09-23)

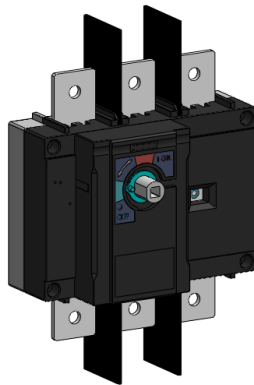
Prepared by	刘东辉	Date	2023.10.08
Reviewed by	樊聪	Date	2023.10.08
Countersigned by	丁莹莹	Date	2023.10.08
Approved by	胡琪	Date	2023.10.08

Revision History					
Version	Revision Reason/Content	Implementation Date	Prepared by	Reviewed by	Approved by
0	New addition	20160325	Yu Yanyan	Ding Fei	Shi Wei
1	1. Rated working current of the main technical parameters in Item 4: The rated working current of AC22B 660/690V is changed to 500A; 2. Operating torque in the main technical parameters changed to 18 in Item 4.	20151109	Yu Yanyan	Ding Fei	Shi Wei
2	Update of the external dimension diagram; addition of related accessories of the inside-cabinet handle; template update	20181128	Wang Jili	Zhang Jiazheng	Zhou Bo
3	Addition of AC-800V related parameters	20190704	Wang Jili	Zhang Jiazheng	Zhou Bo
4	Handle model addition	20200421	Zheng Lei	Fu Chuantao	Wang Jili
5	Increase minimum load	20231008	Liu Dong Hui	Fan Cong	Hu Qi

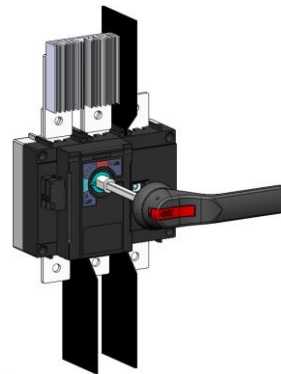
1. Applicable Scope and Purpose

The NDG3 series disconnect switches are applicable to electric systems with a rated voltage not higher than DC1000V or AC800V and a rated current not higher than 500A, 630A and 800A. They can be connected and disconnected at a low frequency to safely isolate various low-voltage circuits in the photovoltaic field.

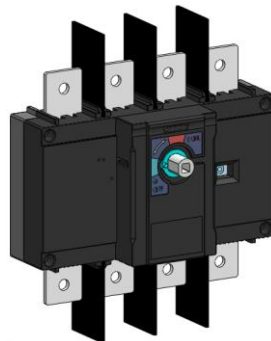
2. Picture of the Product (The picture below is for reference only; please subject to the kind)



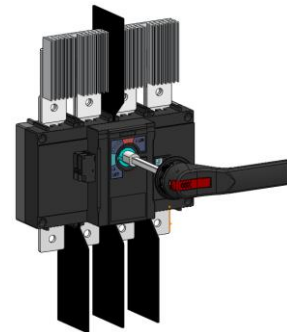
NDG3-500/630/800 3-pole basic type



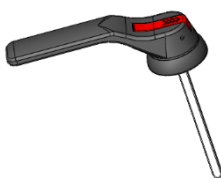
NDG3-500/630/800 3-pole with accessories



NDG3-500/630/800 4-pole basic type



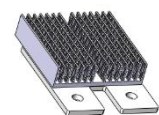
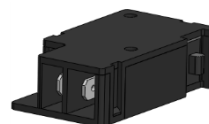
NDG3-500/630/800 4-pole with accessories



Handle outside a cabinet:
G3-800



Handle outside a cabinet:
G3A-800



3. Specification and Model Description

3.1 NDG3-500/630/800 model interpretation

ND G 3 - □ / □ □

1 2 3 4 5 6

SN	Code name	Code description
1	Enterprise code	ND "Nader"
2	Product code	G Isolating switch
3	Design SN	3
4	Rated current (A)	500, 630, 800
5	Number of poles	3: Three poles 4: Four poles
6	Current Type	Uncoded: Normal product Z: DC PV product
7	Handle type	P: Handle outside a cabinet. Specifications of handle outside a cabinet shall be selected additionally, such as SB1-200/G3-800. K: Inside-cabinet handle.

3.2 Model interpretation of handle outside a cabinet:

SB 1 - □ / G3-800

1 2 3 4

SN	SN description	Code description
1	Function code	Handle
2	Design SN	1
3	Square Shaft Code	88: Shaft length 88mm 200: Shaft length 200mm 275: Shaft length 275mm 400: Shaft length 400mm 650: Shaft length 650mm
4	Applicable switch model	G3-800: suitable for NDG3(A)-500, 630, 800 G3-800: suitable for NDG3(A)-315, 400, 500, 630, 800, NDG3A-250H

Note: Installation dimensions of G3-800 and G3A-800 cabinet doors are 37.5*37.5 and 28*40;

3.3 Auxiliary contact models interpretation

F 1 - □ □ / G3-800

1 2 3 4 5

SN	SN description	Code description
1	Function code	Auxiliary contact
2	Design SN	1

3	Pairs of contacts	11: One NO, One NC
4	Auxiliary switch quantity	A: One for each unit B: Two for each unit
5	Applicable switch model	G3-800: suitable for NDG3(A)-500, 630, 800, 1000, and 1250

3.4 Short-circuit block model interpretation

MX 1 / G3-800

1 2 3

SN	SN description	Code description
1	Function code	Short-circuit block
2	Design SN	1
3	Applicable switch model	G3-800: suitable for NDG3(A)-500, 630, 800

4. Main Technical Parameters

4.1 Main parameters of the disconnecting switch

CCC, TUV and CE certification parameters are as follows:

Parameter name	Category/unit		Description of the specific parameters		
Rated current In	A		500	630	800
Agreed thermal current Ith	A		800		
Number of poles	Number of		3, 4		
Insulation voltage Ui	V		1000		
Rated impulse withstand voltage Uimp	kV		12		
Rated operating current Ie (A)	AC-21B	800V	500	630	630
	AC-22B	380/400/415V	500	630	800
		660/690V	400	500	500
	AC-23B	380/400/415V	400	500	/
		660/690V	315	315	/
	DC-21B	750V	500/3	630/3	800/3
		1000V	500/4	630/4	800/4
Rated short-time withstand current, Icw	kA 1s		AC: 16 kA DC: 10 kA		
Rated short-circuit making capacity Icm	kA		AC: 32 kA DC: 17 kA		

Mechanical life	Times	5000		
Electrical life	Times	200 times for 630A and below, 100 times for 630A and above		
Operating torque	N.m	18		
Wiring screw tighten torque	N.m	10		
Wiring copper bus cross-section	mm ²	2 pieces, 30×5	2 pieces, 40×5	2 pieces, 50×5
Installation mode		M6 screw installation		
Weight (Kg)	3P	4.8		
	4P	6		

- Applicable standards: Products conform with GB/T 14048.3; IEC 60947-3; EN 60947-3.
- Frequency: 50/60Hz;
- Certificates: CCC, TUV, and CE.

4.2 Main parameters of the auxiliary switch

- Electrical parameters

Rated working voltage:	AC250V	DC250V	DC125V
Rated working current:	16A	0.3A	0.6 A

- Rated insulation voltage: AC1000V
- Agreed thermal current: I_{th}: 16A
- Rated frequency: 50/60Hz
- Minimum Load: DC30V 0.1A
- Utilization category: AC-15, DC-13
- Protection class: IP20
- Electrical life: 20000 times
- Standard certification: GB/T 14048.5, comply with ROHS

5. Normal Working Environment

1) The ambient air temperature for normal operation ranges in -40~+70℃; when the ambient air temperature is above +70℃, the user should negotiate with the manufacturer.

工作电流		环温 (°C)		
型号	额定电流 (A)	75	80	85
NDG3-500	500	1.0In	0.90In	0.85In
NDG3-630	630	1.0In	1.0In	0.92In
NDG3-800	800	1.0In	0.90In	0.85In

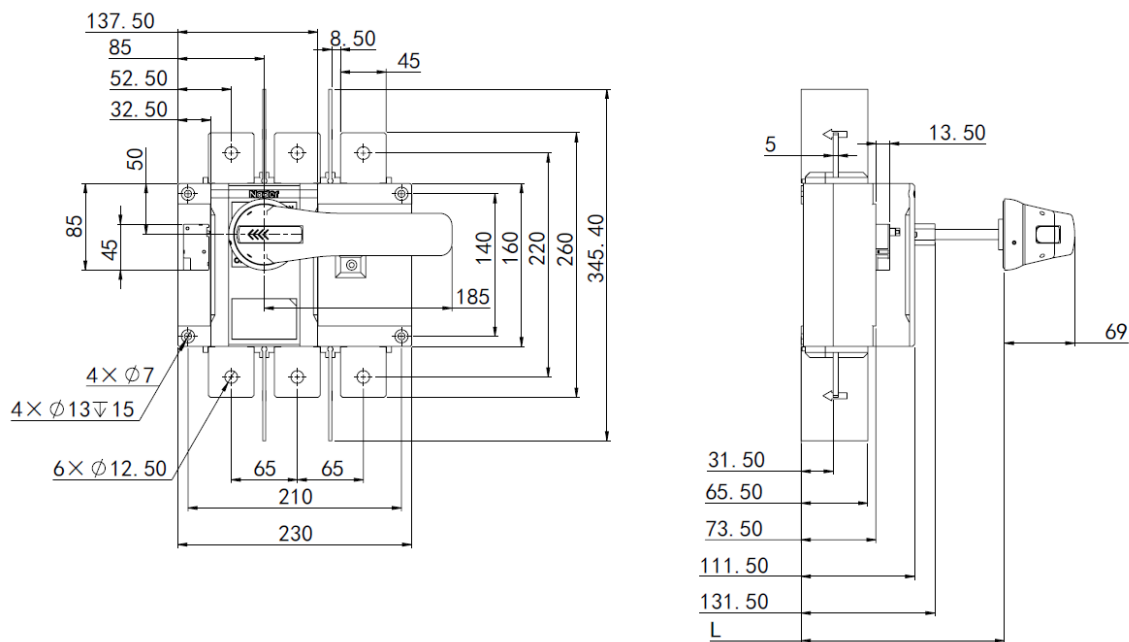
2) Normal installation altitude shall not exceed 3000m, or otherwise negotiating with the manufacturer.

工作电流		海拔		
型号	额定电流 (A)	2000m	3000m	4000m
NDG3-500	500	1.0In	1.0In	0.85In
NDG3-630	630	1.0In	1.0In	1.0In
NDG3-800	800	1.0In	1.0In	0.92In

- 3) The relative humidity at an ambient temperature of +40°C should not exceed 50%. A higher relative humidity is allowed at a lower temperature. For example, it can be 90% at 20°C. Special measures should be taken to address occasional condensing due to temperature fluctuation.
- 4) The product can be disposed in places that are free from explosive media, media corrosive to metal, insulation damaging gas, and conductive dust. The product should be avoided from snow and rain.
- 5) The product is applicable in an environment with pollution class III.
- 6) Installation category of III and IV.
- 7) Protection class: IP20; protection class of handle outside a cabinet: IP65.
- 8) Environmental requirements comply with RoHs directives.

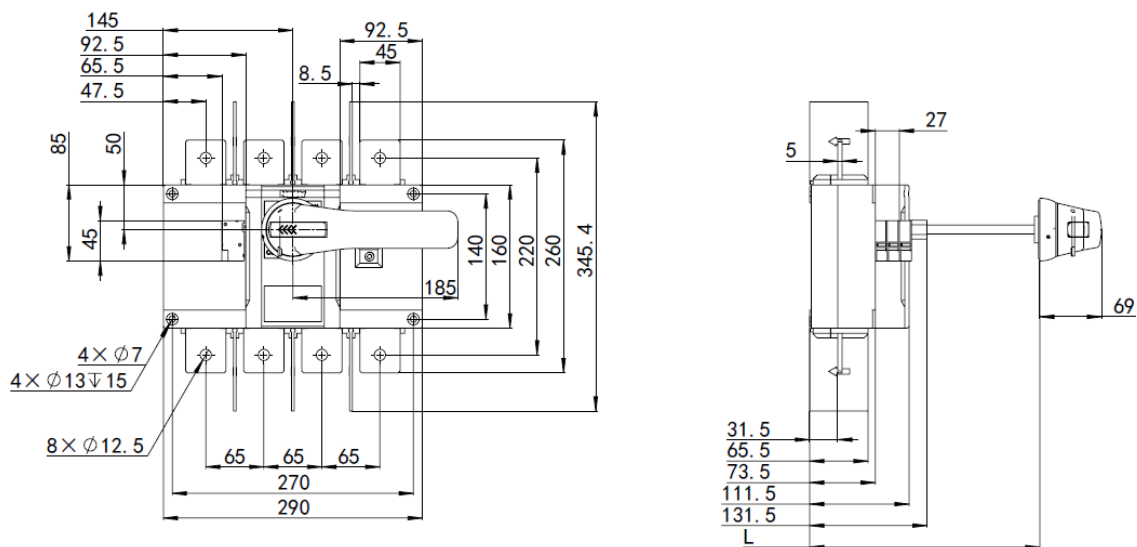
6. Product Outline and Installation Dimensions

6.1 NDG3-500/630/800 3P outline and installation dimensions (operation handle outside a cabinet: SB1-“A”/G3-800)



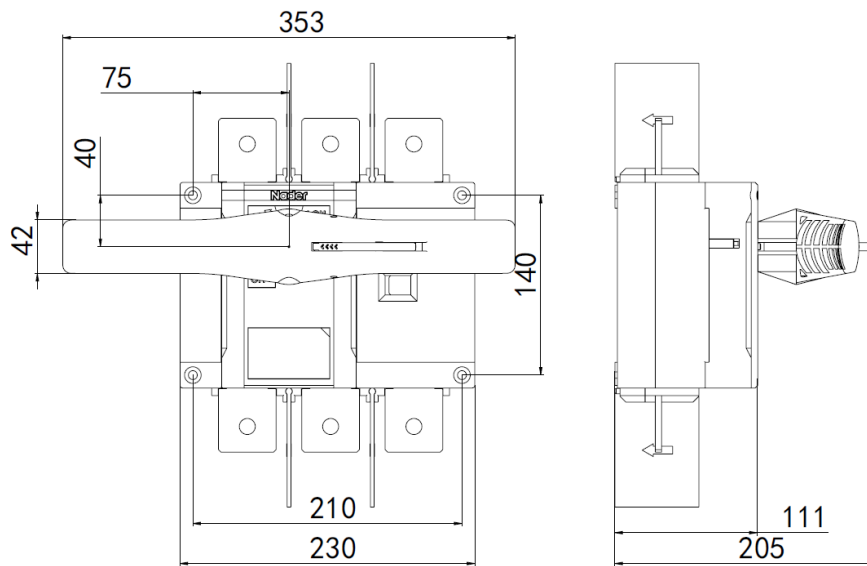
$L = "A" + 56.5$ (unit: mm, A: Square shaft length of handle outside a cabinet)

6.2 NDG3-500/630/800 4P outline and installation dimensions (operation handle outside a cabinet: SB1-"A"/G3-800)

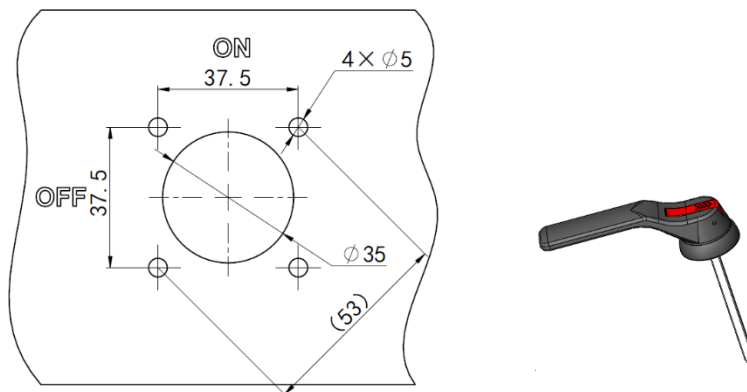


$L = "A" + 56.5$ (unit: mm, A: Square shaft length of handle outside a cabinet)

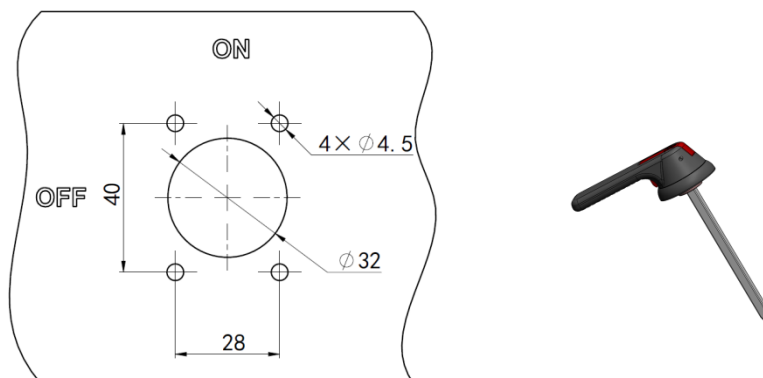
6.3 Outline dimensions of NDG3-500/630/800 inside-cabinet direct operation handle:



6.4 Cabinet door opening dimension diagram of handle outside a cabinet: SB1-"A"/G3-800



6.5 Cabinet door opening dimension diagram of handle outside a cabinet: SB1-"A"/G3A-800



7. Installation Method and Position

Installation method: Isolating switch screws and handle cabinet door installation;

Address: South Shenjiang Road #2000, Pudong New Area, Shanghai

Post code: 201315

Tel.: (021) 68586699

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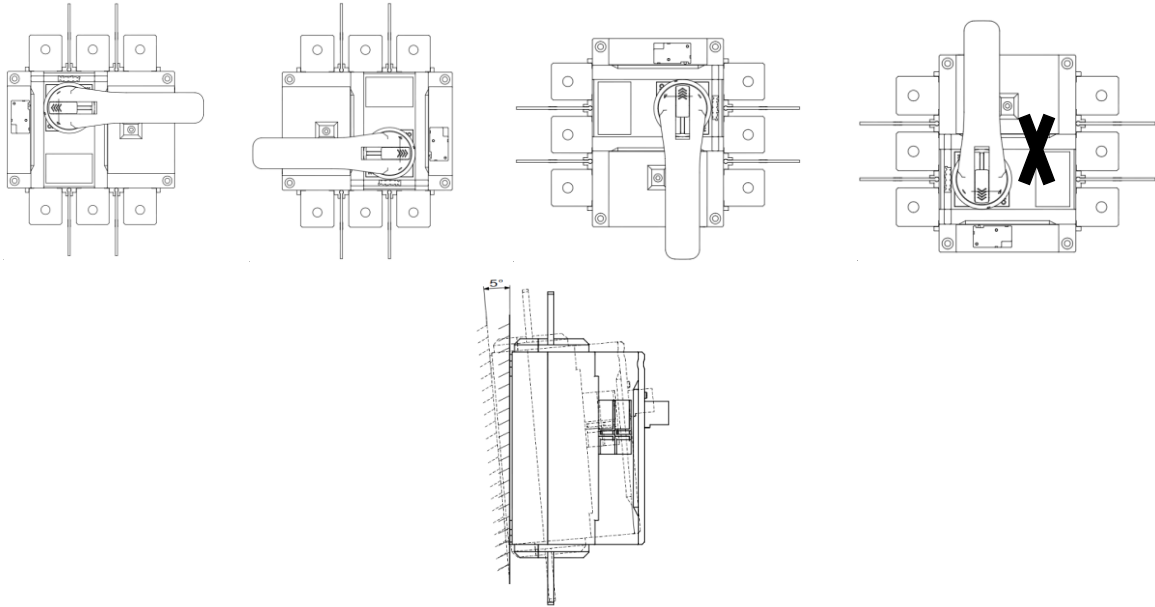
Fax: (021) 23025796

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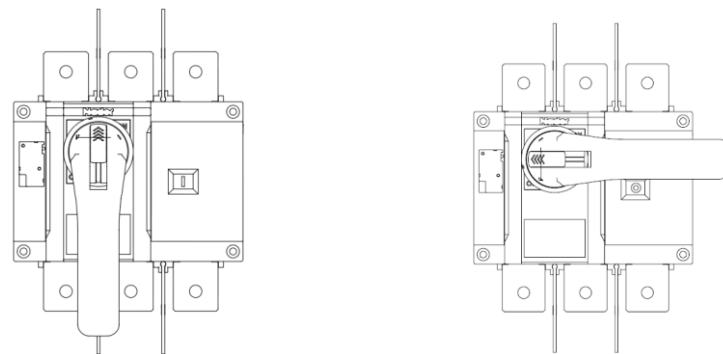
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Installation position: vertical installation and horizontal installation. In case of vertical installation, the contact inspection window shall not position upward, as the 4th method shown in the figure below. The vertical panels installed shall have the inclination no more than 5° with the direction as shown in the figure below;



The inclination for vertical

Status position: This product has two status positions, making position "I/ON" and breaking position "O/OFF", as shown in the figure below.



On position

Off position

8. Packaging and Storage

8.1 Disconnecting switch packaging

SN	Specification	Number of poles	Quantity
1	NDG3-500	3P	1 unit/box
		4P	1 unit/box

2	NDG3-630	3P	1 unit/box
		4P	1 unit/box
3	NDG3-800	3P	1 unit/box
		4P	1 unit/box

8.2 Accessories packaging (maximum packaging)

Name	Quantity
Handle	2 sets/box, 12 box/carton
Auxiliary contact	16 sets/box, 40 boxes/carton
Short-circuit block	2 sets/box, 4 box/carton

8.3 Transportation and Storage

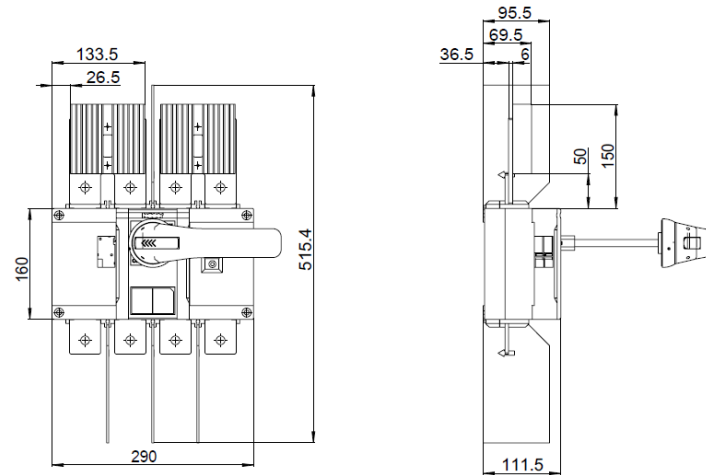
During storage, the influences from rain and snow should be prevented, and warehouse should be in excellent ventilation with the relative humidity less than 80% and the temperature between -40℃ and +85℃. No acidic alkaline or other corrosive gas exists in the ambient air in the warehouse. Under the above conditions, the storage period shall be no more than three years since the manufacturing date.

9. List of Accessories and Installation

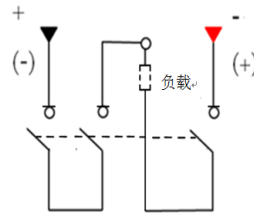
9.1 Optional accessories list

SN	Name	Accessories installation and quantity
1	Handle	Mounted on the cabinet door, connected to the body with square shaft
2	Auxiliary contact	Mounted on the front left of the main switch, up to two units
3	Short bus bar	Mounted on the Terminal board of the main switch, to achieve the connection with the main pole

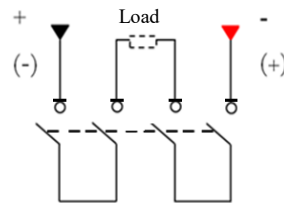
9.2 Appearance and wiring mode of the NDG3-500/630/800 short busbar product



Three-pole string connection mode



Four-pole string connection mode



10. Precautions

- 1) Any quality problem due to disassembly without permission will be the liability of the user;
- 2) Under the energized operation state, do not touch the exposed portion of the uninsulated parts on the circuit breaker with bare hand;
- 3) Reliable cabling is required to prevent the terminals from being burnt out due to abnormal heat at the terminals;
- 4) Connecting wires shall be fastened in the distribution cabinet rack. The switch shall not undertake the weight of the conductor. Before fastening the conductor, it is required to make the plane of the busbar or cable terminal in parallel to that of the wiring terminal of the switch. After the conductor is connected with the wiring terminal of the switch by using the bolts, the switch shall not undertake any mechanical stress.