

Shanghai Liangxin Electrical Co., Ltd.

# NDGP2-2000 Product Specification

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

**Product Name:**        **Disconnecting Switch**

**Product Model:**      **NDGP2-2000**

**Date:**                **2019-08-12**

Prepared by	<u>Fan Jianyu</u>	Date	<u>2019-08-12</u>
Reviewed by	<u>Wang Jili</u>	Date	<u>2019-08-12</u>
Approved by	<u>Zhou Bo</u>	Date	<u>2019-08-12</u>

Revision History					
Version	Revision Reason/Content	Implementation Date	Prepared by	Reviewed by	Approved by
A0	New addition	2018-03-05	Zhang Jiazheng	Wang Jili	Zhou Bo
A1	Modification notes	2019-08-12	Fan Jianyu	Wang Jili	Zhou Bo

1. Applicable Scope and Purpose

The NDGP2-2000 disconnecting switch is applicable to the low-voltage power distribution or motor network with the AC 50/60HZ, the rated working voltage of AC400V and AC690V and the rated working current of 1250~2000A for infrequent connecting and breaking of the circuit as well as line isolation.

Products are widely used in power transmission and distribution and automation systems in construction, power, chemistry and other industries.

2. Picture of the Product



3. Specification and Model Description

<u>ND</u> <u>G</u> <u>P</u> <u>2</u> - <u>2000</u> / <u>3</u> / <u>□</u>						
1	2	3	4	5	6	7
SN	SN name		Code			
1	Enterprise code		ND-Nader low-voltage apparatus			
2	Product code		G - Disconnecting switch			
3	Derived code		P-Utilization category: AC-22, 21			
4	Design SN		2-Design SN			
5	Frame current		2000- 2000A			
6	Number of poles		3-3P			
7	Auxiliary switch type		No code-Without auxiliary switch F1-With an auxiliary switch (one normally open; one normally closed) F2-With two auxiliary switches (two normally open; two normally closed)			

#### 4. Main Technical Parameters

##### 1) Electrical characteristics

- ▲ Rated insulation voltage  $U_i$ : AC 1000V
- ▲ Rated impulse voltage  $U_{imp}$ : 12kV
- ▲ Rated working voltage  $U_e$ : AC400V, AC690V
- ▲ Rated working current: AC-21B At  $U_e$ : 690V,  $I_e$ : 2000A;  
AC-22B At  $U_e$ : 690V,  $I_e$ : 1250A;  
 $U_e$ : 400V,  $I_e$ : 1600A.
- ▲ Rated short-time withstand current  $I_{cw}$ : 60kA kA/1s
- ▲ Rated short circuit making capacity  $I_{cm}$  (peak value): 110kA
- ▲ Allowable load  
2000A under the ambient temperature of 40°C  
1980A under the ambient temperature of 45°C  
1960A under the ambient temperature of 50°C  
1940A under the ambient temperature of 55°C
- ▲ Auxiliary switch 380V AC-15 6A

##### 2) Operating performance

- Electrical life: 100 times
- Mechanical life: 2,000 times
- ▲ Operating torque: 38Nm

##### (3) Connection capacity

- ▲ Maximum copper bar width: 80mm
- ▲ Terminal tightening torque: 35-45Nm

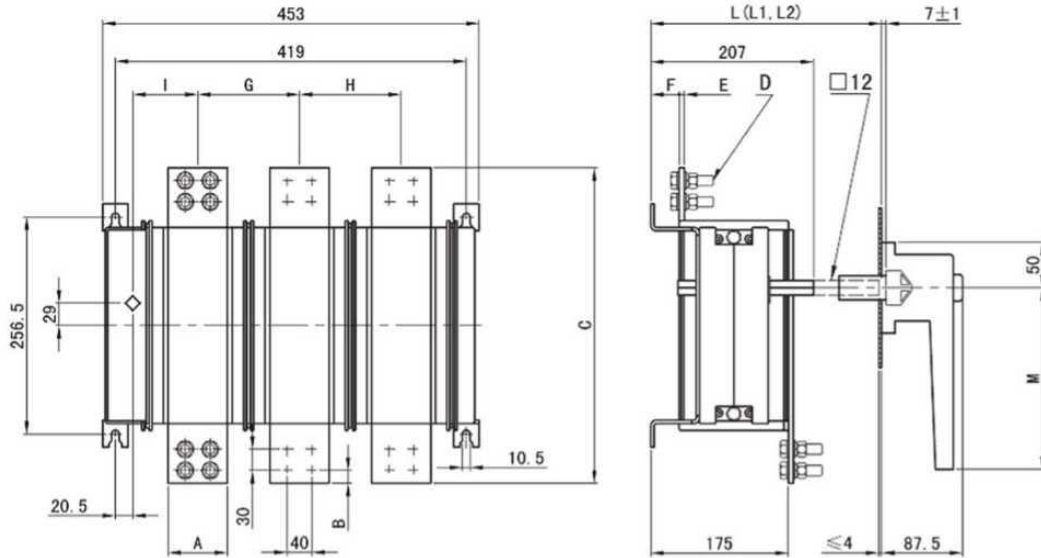
#### 5. Normal Working Environment

- ▲ Altitude:  $\leq 2000\text{m}$ ;
- ▲ Ambient temperature: -25°C~+55°C; the average within 24h shall not be more than +35°C; in case the ambient temperature is above 40°C consider reducing the capacity for use;
- ▲ Pollution level: 3;
- ▲ When the highest temperature is +40°C, the relative humidity of air should not exceed 50%; a high relative humidity is allowed under a low temperature, e.g. 90% under 20°C. Special measures should be taken to address occasional condensing due to temperature fluctuation;
- ▲ Installation category: III and IV:
- ▲ The product should be installed free from obvious shaking, impact and vibration as well as snow and rain. The installation site should be free from dangerous explosive media without corrosive to metal, insulation damaging gas and dust.

#### 6. Tripping Characteristics

None

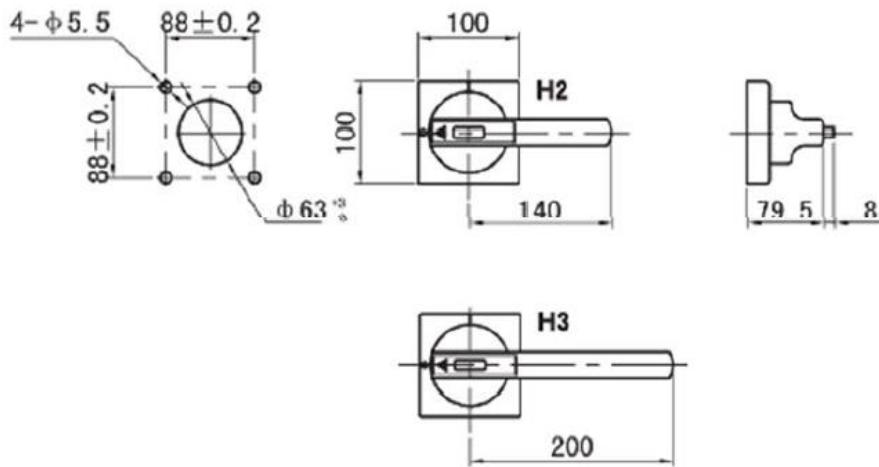
#### 7. Product Dimension and Installation Dimensions



Model	A	B	C	D	E	F	G	H	I	L*	L1*	L2*	M
NDGP2-2000	70	20	392	M10	10	48	120	120	80	270~415	416~515	516~580	200

## 8. Handle Outline and Installation Dimensions

### (1) H-type handle and mounting hole size



Note: H-type handle of NDGP2-2000 disconnecting switch is applicable to H3 handle.

### (2) Installation instructions for H-type handle

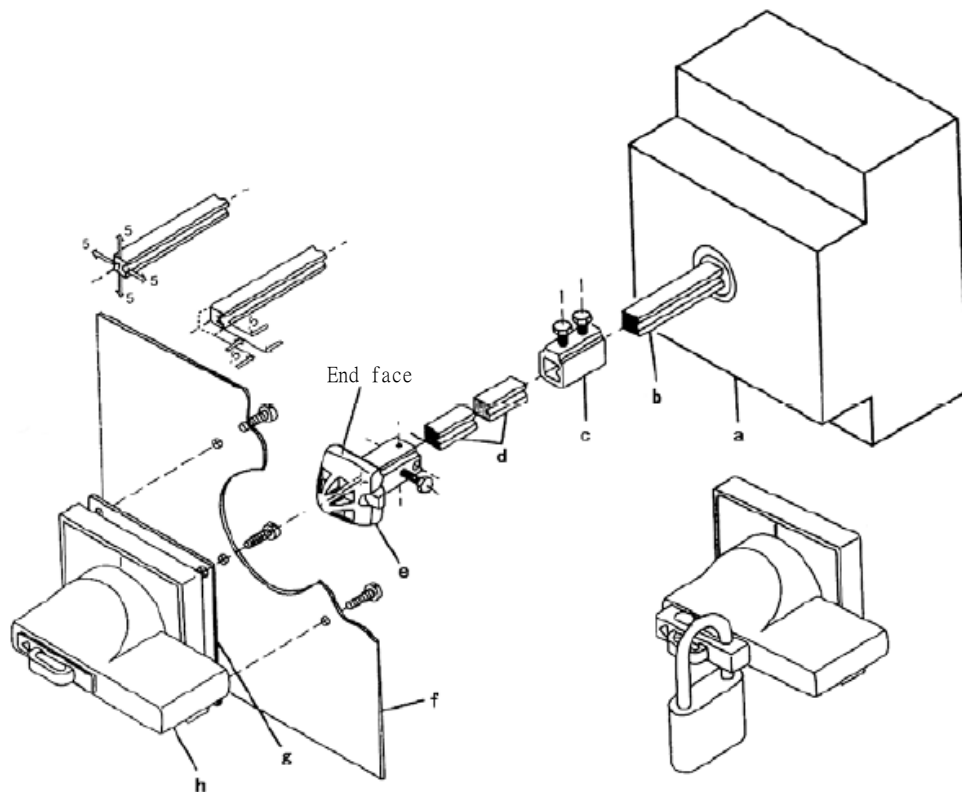
- 1) The switch body is generally installed in a complete set of equipment, and its operating handle is fixed on the panel for use.
- 2) The panel operating handle has an IP65 protection class. The H-type handle does not have the door interlocking function by default, but the user can request the door interlocking function when ordering as needed (Note: all the B-type handles have the door interlocking function).
- 3) The switch can meet the requirements of different installation depths. L is the installation depth normally given at the factory, and the remaining reachable installation depths are shown in L1-L2.

## 4) Installation sequence

From the switch body to the operating handle installed outside the panel, the installation sequence is shown in Figure 1. The installation of the switch and the handle should ensure that both end faces of the handle base and coupling shown in Figure 1 are in a horizontal position and facing upwards. (Generally, c and d are not provided when the switch leaves the factory. They are prepared for special situations where the installation depth is deeper than the installation depth in the sample.)

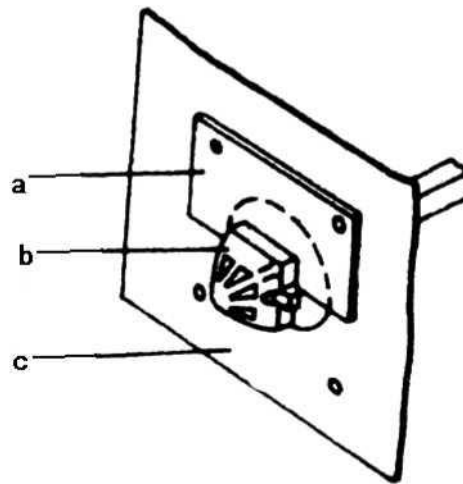
## 5) Adjustment of shaft depth

The b.c.d.e in Figure 1 can be fixed with bolts after depth adjustment. The adjustment order should generally be b, c, d, e. The requirements for depth adjustment is that the spacing between the bottom surface of the coupling and the outer surface of the panel should be  $7\pm 1\text{mm}$  (see the adjustment sample supplied for details). The spacing adjustment can be performed between the outer surface of the panel and the bottom surface of the coupling with the adjustment sample pad, as shown in Figure 2.



a—Switch;      b—Shaft;      c—Shaft sleeve;      d—Extension shaft;  
e—Coupling;    f—Panel;      g—Handle gasket;    h—Operation handle;

Figure 1 Switch Installation Sequence



a——Adjustment sample    b——Coupling;    c——Panel.

Figure 2 Shaft Depth and Alignment Adjustment with Adjustment Sample

6) Alignment of shaft and handle rotation center

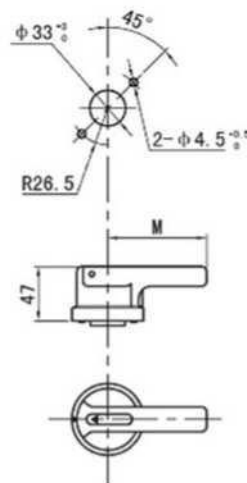
The structure of the coupling allows the shaft center and the handle rotation center to have an error of  $\pm 5\text{mm}$  on the upper and lower, left and right sides of the plane parallel to the panel. As long as the error is less than 5mm, it can operate normally. Samples can be used for adjustment, as shown in Figure 2. Note that the two small round holes on the top of the sample should be aligned with those on the panel, and the coupling should fall into the notch of the sample with the upper end surface in a horizontal position.

7) Fixed operating handle

After adjusting the shaft depth and alignment, the operation handle can be fixed with self-tapping screws (4 supplied with the handle) from the inside of the panel.

The product is placed in the front direction. When the exposed shaft mounting slot notch on the product faces downwards, the product is closed and opened when the notch face to the right. The slot notch only points downward and to the right. Do not confuse them with other directions.

(3) B-type handle and mounting hole size



Note: M=180mm for the B-type handle of the NDGP2-2000 disconnecting switch.

## 9. Packaging and Storage

Vertical installation, the inlet wire mode can adopt the up-in and down-out or down-in and up-out mode.

#### 10. Environmental Compliance

The packaged product should be stored at -500C~+800C, and not be attacked by rain during transportation.

#### 11. List of Accessories and Installation

##### 1) H-type handle accessories list

SN	Name	Unit	Quantity	Remarks
1	Shaft	Piece	1	
2	Coupling (including screws)	Set	1	
3	Handle	Set	1	
4	Self-tapping screw for fixing the handle	A	4	
5	Handle gasket	Block	1	
6	Adjustment sample	Piece	1	
7	Certificate of conformity	Piece	1	
8	User manual	Piece	1	
9	H series handle user manual	Piece	1	

##### B-type handle accessories list

SN	Name	Unit	Quantity	Remarks
1	Shaft	Piece	1	
2	Handle	Set	1	
3	Self-tapping screw for fixing the handle	A	2	
4	Certificate of conformity	Piece	1	
5	User manual	Piece	1	

#### 12. Precautions

- ▲ The default standard handle of the product is the H series handle. If you need the B series handle, please explain. The H and B series handles can be padlocked;
- ▲ If the required installation depth exceeds the normally given range, the required installation depth should be indicated.