



HGL, HGLi Series Disconnecter User Manual



Standard: GB/T 14048.3

Please carefully read this User Manual before installing and operating the product, and keep this manual properly for future reference

HGL, HGLi Series Disconnecter

1 Scope of Application

HGL and HGLi series disconnecters (hereinafter referred to as disconnecters) is used in the AC 50Hz power distribution equipment with rated operating voltage up to 690V and with conventional thermal current up to 3150A in the industrial enterprises for infrequent connection and disconnection of circuit and for electrical isolation.

The disconnector features with artistic appearance, novel and simple shape, simple structure, convenient operation and complies with the GB/T 14048.3 standard, and it is the best choice for similar products!

2 Normal Working Conditions

2.1 Ambient air temperature: The upper limit value does not exceed +40 °C, the lower limit value is not less than -5 °C, and the mean value does not exceed +35 °C within 24 h;

2.2 The altitude at the installation site does not exceed 2000 m;

2.3 Atmospheric conditions: The relative humidity of the atmosphere air does not exceed 50% at the ambient air temperature ± 40 °C, and a higher relative humidity is allowed at a lower temperature; for example, the relevant humidity is 90% at 20 °C. It is considered to take measures to eliminate the condensations occurred on the surface of the product due to temperature changes;

2.4 Pollution degree: Level 3;

2.5 Installation category: Class III, Class IV;

2.6 Installation conditions: Installed vertically in a place where there is no severe shaking, shock vibration, and rain and snow attack; the installation site should be free from explosive hazard medium, and there should be no gas or dust in the medium that is sufficient to cause corrosion to the metal and damage to the insulation.

3. Structure Introduction

3.1 The disconnector adopts the accelerated opening and closing mechanism that can release instantaneously with energy storage via spring and the contact structure with double breakpoints connected in parallel that can be connected and disconnected simultaneously. By combining with the arc separation structure of the base, it can realize a good arc extinguishing effect, greatly improving the electrical and mechanical performances of the disconnector.

3.2 The disconnector is made of glass fiber reinforced unsaturated polyester molding compound and has a manual operating handle, providing high dielectric performance, protection capacity, and reliable operation safety.

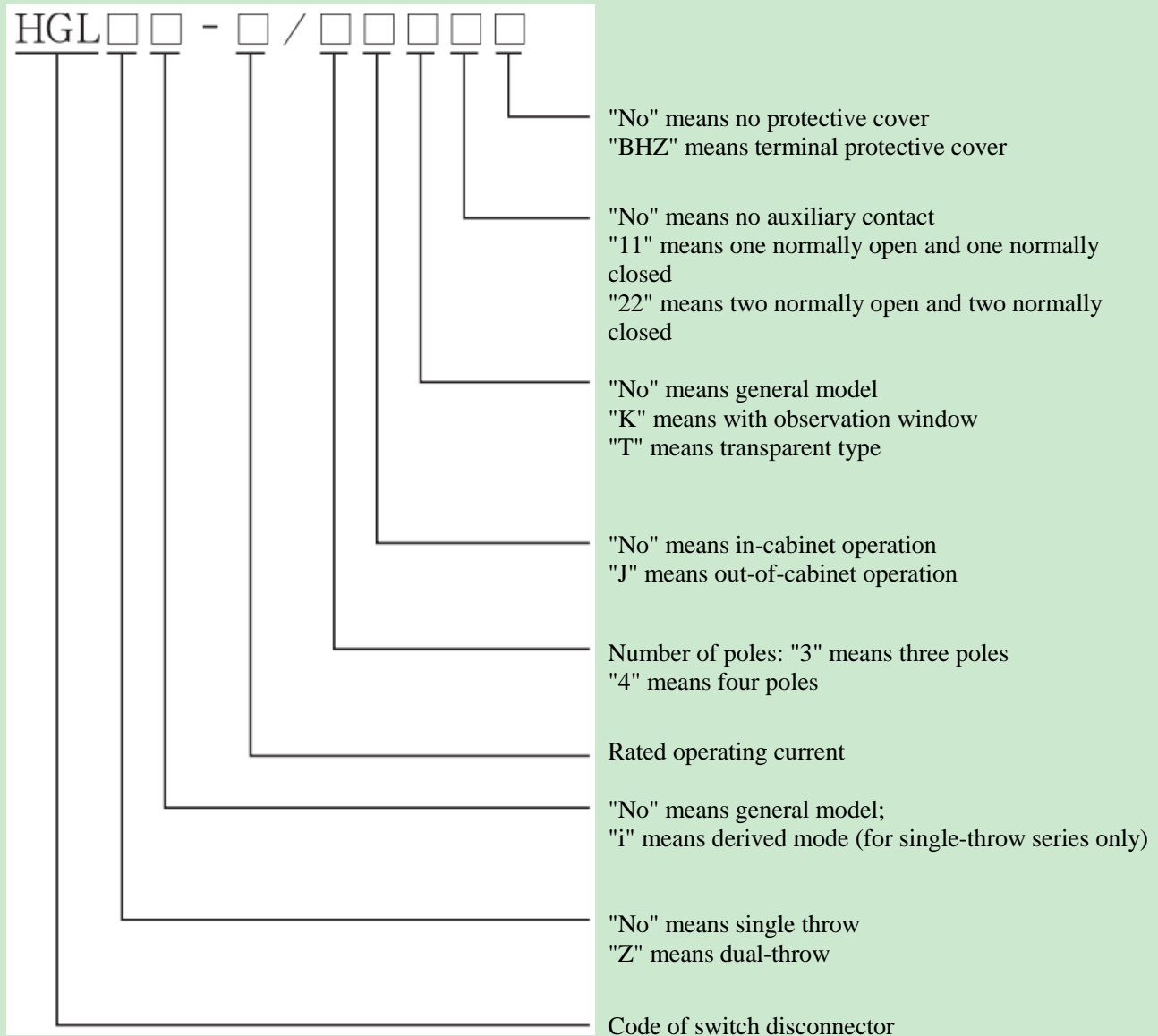
3.3 There are 3-pole and 4-pole disconnectors.

3.4 There is a mark window on the front side of the disconnector to indicate the Open/Closed state of the contact; a rear observation window can be provided as required to directly observe the Open/Closed state of the contact to ensure the reliability and safety of the operation of the disconnector.

3.5 The operating handle can be directly installed on the disconnector for operation (referred to as in-cabinet operation), and can also be operated outside the door of the distribution cabinet through the extended shaft (referred to as out-of-cabinet operation) to ensure convenient operation.

3.6 The handle can be locked at the OFF position "0" through two or three locks to prevent mis-operation.

4 Model Meanings



5. Main Technical Parameters

The main technical parameters of the SWITCH disconnecter are listed in Table 1

Table 1

Conventional thermal current I_{th} (A)		63 (40, 32, 25, 16)	100 (80)	160	250	400	630	1000	1250	1600	2000	2500	3150	
Rated insulation voltage U_i (V)		800		1000										
Rated impulse withstand voltage U_{imp} (kV)		12												
Rated operating voltage U_e (V)		AC400, 690												
Rated Frequency (Hz)		50												
Use category		AC-22B												
Rated operating current I_e (A)	AC400V	63	100	160	250	400	630	1000	1250	1600	2000	2500	3150	
	AC690V	40	80	125	200	315	500	800	1000	1250	1600	2000	2500	
Rated making capacity (A)		3I _e												
Rated breaking capacity (A)		3I _e												
Short-time withstand current I_{cw} (kA)	AC400V	2		6	12	20	25	50						
	AC690V	2		6	12	20	25	50						
Mechanical life (times)		8000				5000			3000			1000		
Electrical life (times)		1000				600			500			200		

6 Outline and Installation Dimensions

6.1 HGL, HGLi - 16~63/ 3 (4) disconnector outline and installation dimensions and HGL, HGLi -80 ~ 100 / 3 (4) disconnector outline and installation dimensions see Fig. 1, Fig. 2, Fig. 3, and Fig. 4.

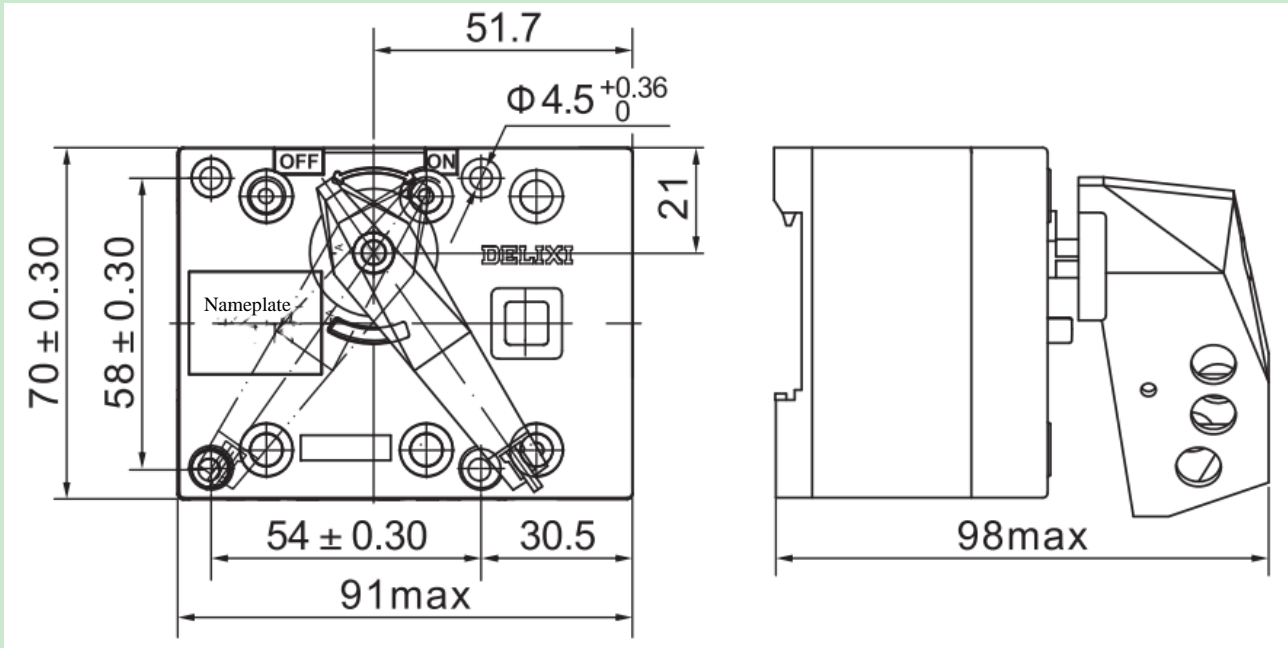


Fig. 1: Outline and installation dimensions of HGL, HGLi-16 ~63/3 disconnector

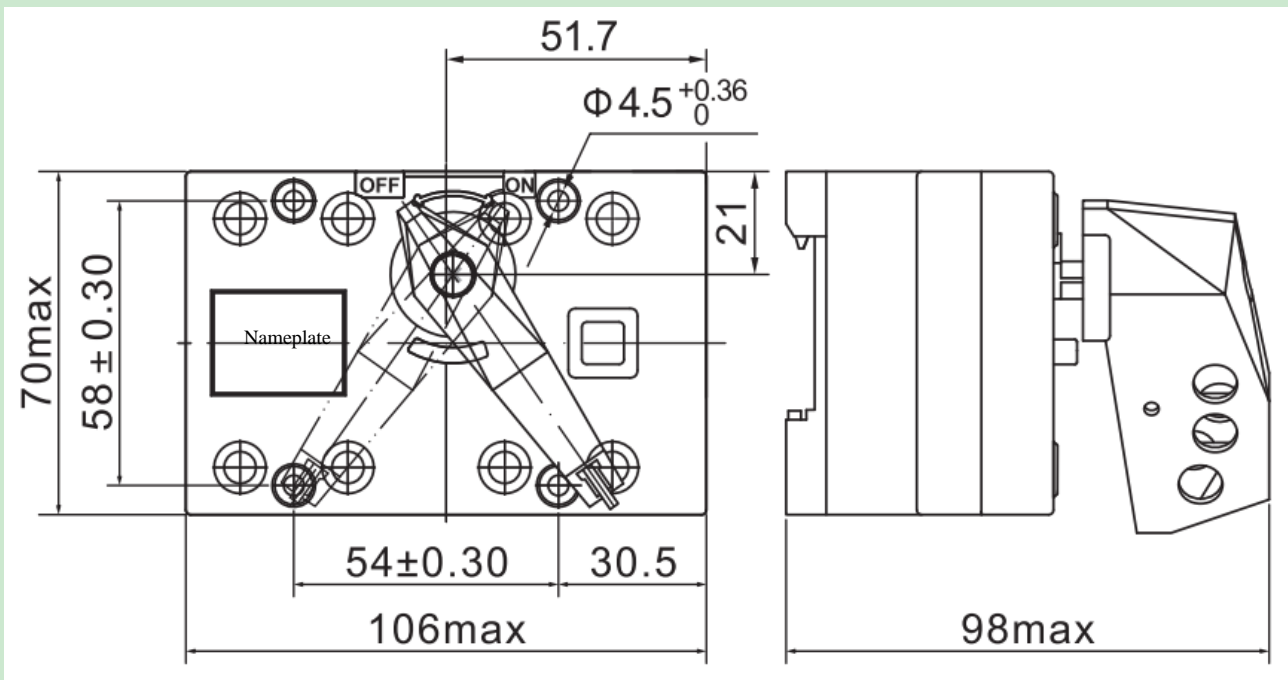


Fig. 2: Outline and installation dimensions of HGL and HGLi-16 ~63/4 disconnectors

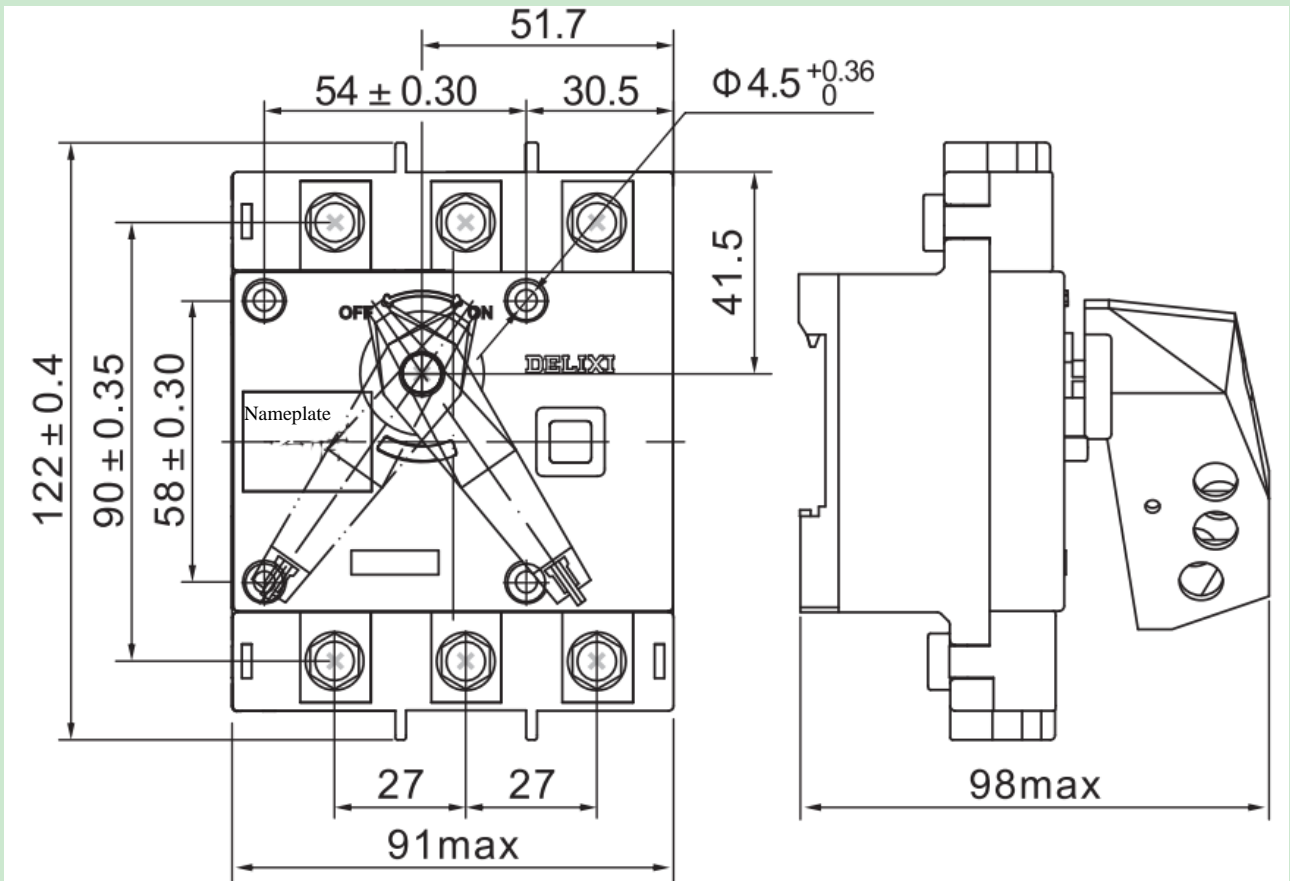


Fig. 3: Outline and installation dimensions of HGL and HGLi-80 ~ 100/3 disconnectors

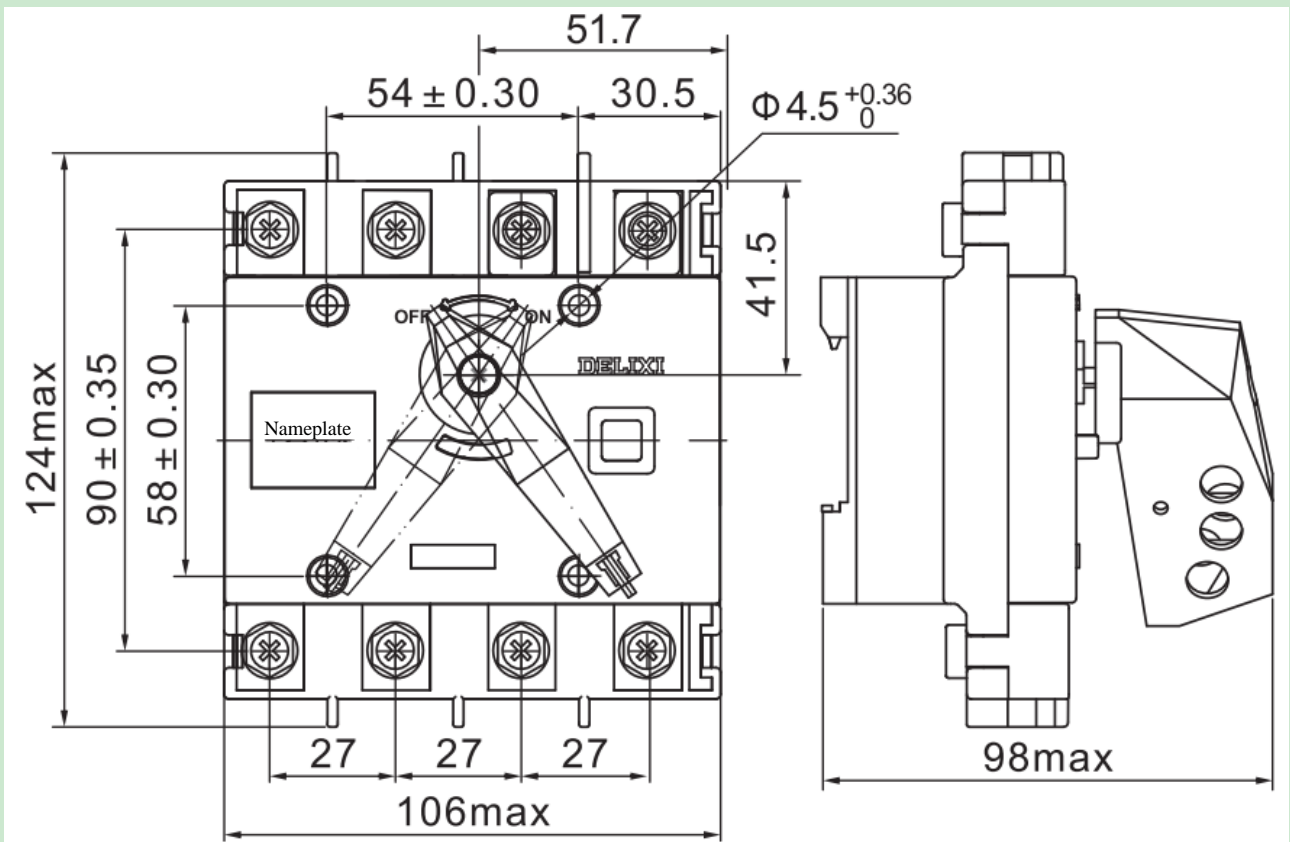
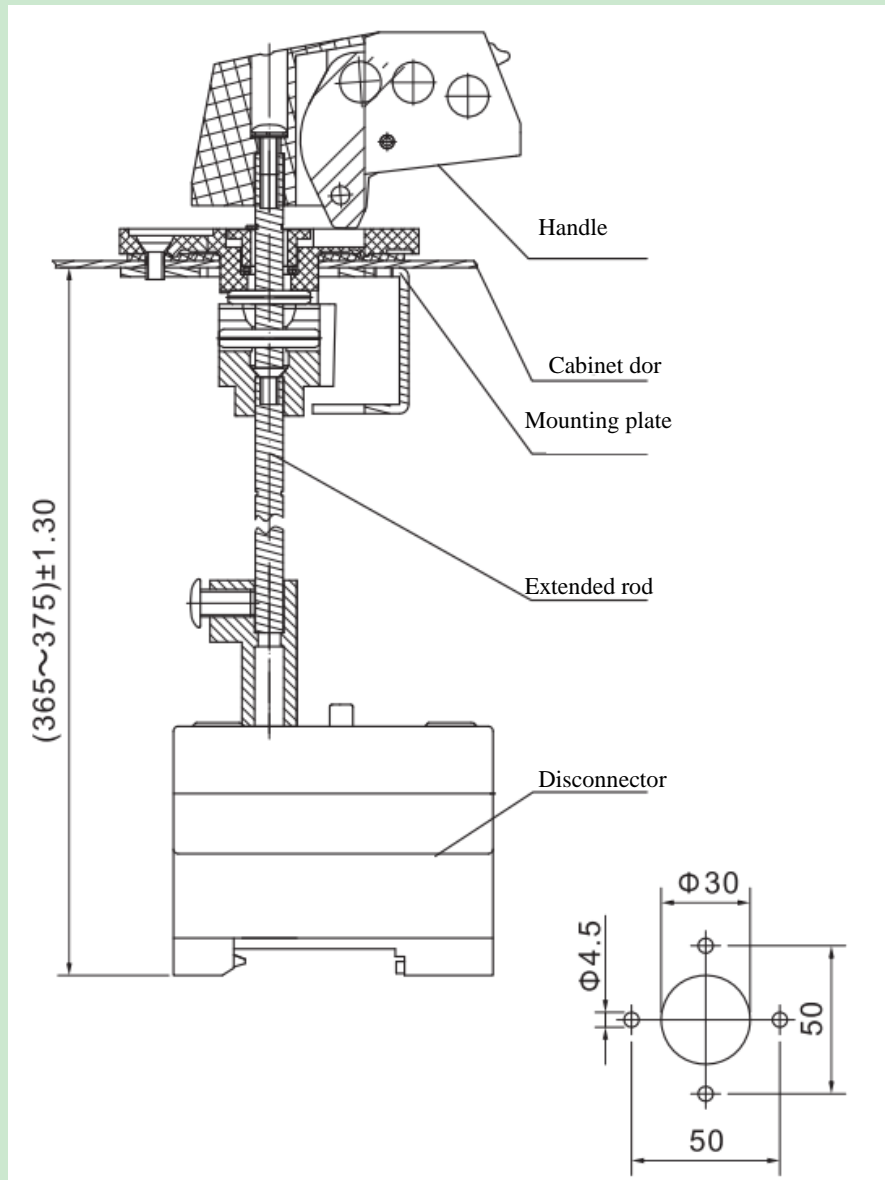


Fig. 4: Outline and installation dimensions of HGL and HGLi-80~100 disconnectors

6.2 Out-of-cabinet operating handle sees Fig. 5



Note: The standard length of the connecting rod is 275 mm.

Fig. 5 Sizes of holes on the panel of out-of-cabinet handle

6.3 The installation dimensions of HGL and HGLi -160~630 series disconnectors are illustrated in Fig. 6, Fig. 7, and Table 2

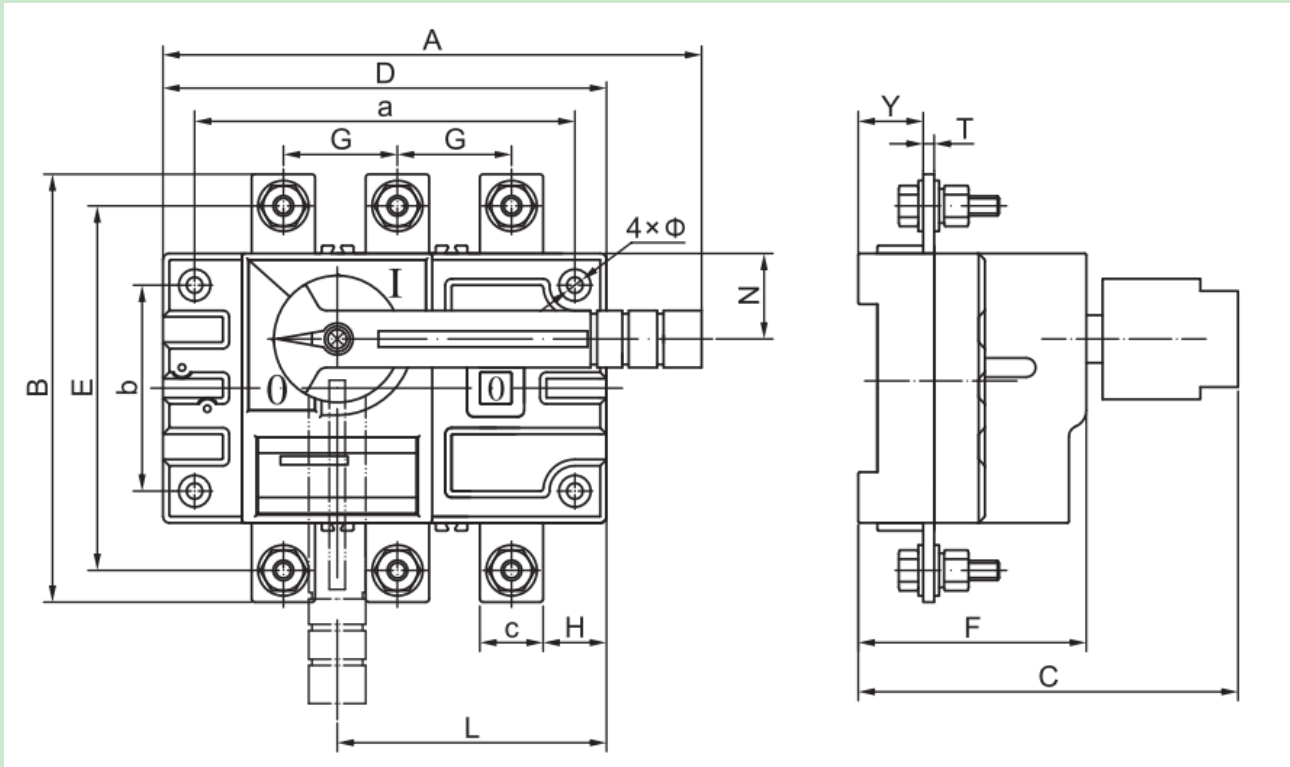


Fig.6. Installation dimensions of HGL and HGLi-125 ~630 switch disconnector in cabinets

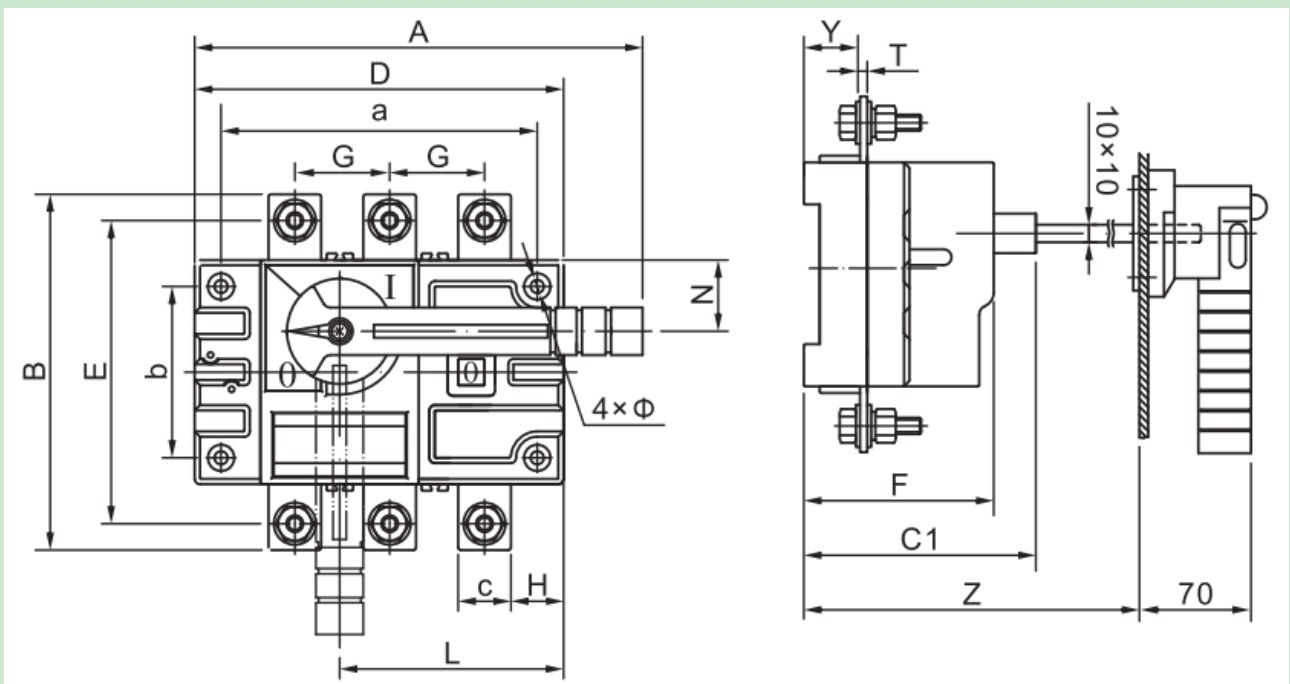
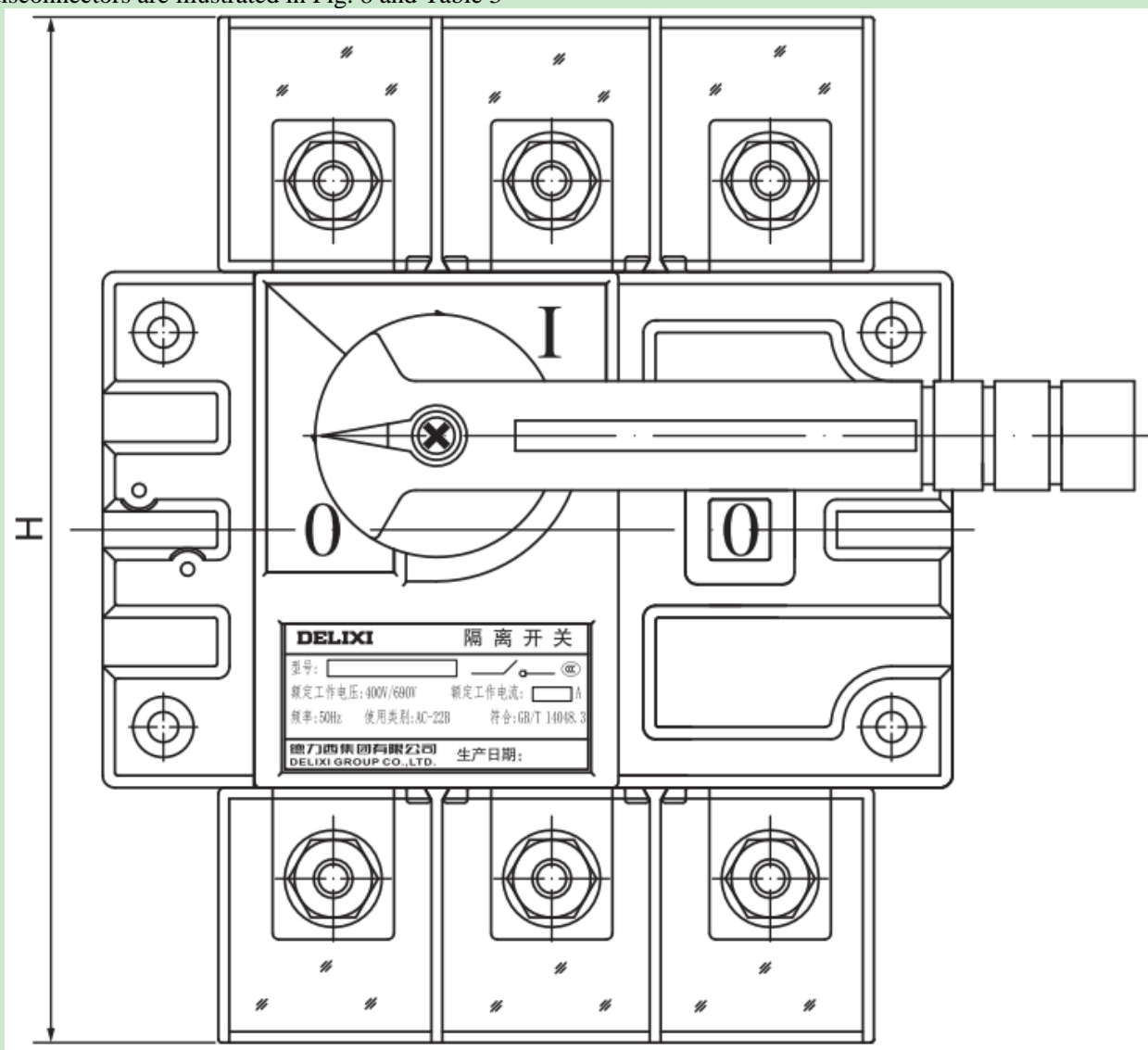


Fig.7 Installation dimensions of HGL, HGLi-125 ~630/J switch disconnector out of cabinet

Table 2

Model & Model	A	B	C	C1	D	E	F	G	H	L	N	Z	a	b	c	T	Y	Φ
HGL、HGLi-125/3	170	135	120	92	140	115	72	36	19.5	85	27	302~330	120	65	20	3.5	21.5	5
HGL、HGLi-125/4	200	135	120	92	170	115	72	36	19.5	85	27	302~330	150	65	20	3.5	21.5	5
HGL、HGLi-160/3	170	135	120	92	140	115	72	36	19.5	85	27	302~330	120	65	20	3.5	21.5	5
HGL、HGLi-160/4	200	135	120	92	170	115	72	36	19.5	85	27	302~330	150	65	20	3.5	21.5	5
HGL、HGLi-250/3	180	170	136	98	180	140	85	50	24.5	115	35	308~340	160	90	25	3.5	21.5	6.2
HGL、HGLi-250/4	230	170	136	98	230	140	85	50	24.5	115	35	308~340	210	90	25	3.5	21.5	6.2
HGL、HGLi-400/3	230	240	175	135	230	206	116	65	31	145	50	345~425	210	140	32 (400)	5 (400)	31	7
HGL、HGLi-630/3		220																
HGL、HGLi-400/4	290	240	175	135	290	206	116	65	31	145	50	345~425	270	140	40 (630)	6 (630)	31	7
HGL、HGLi-630/4		260																

6.4 The installation dimensions of the protective covers of the HGL and HGLi -160~630 series switch disconnectors are illustrated in Fig. 8 and Table 3



Note: The other dimensions are consistent with HGL and HGLi-160 ~630 disconnectors.

Fig. 8: Installation dimension drawing of HGL, HGLi-160~630BHZ disconnector (with terminal protection cover)

Table 3

Model & Model	H
HGL、HGLi-160/3	169
HGL、HGLi-160/4	169
HGL、HGLi-250/3	200
HGL、HGLi-250/4	200
HGL、HGLi-400、630/3	270
HGL、HGLi-400、630/4	270

6.5 The operating handle in the cabinet is illustrated in Fig. 9
250A and below in-cabinet

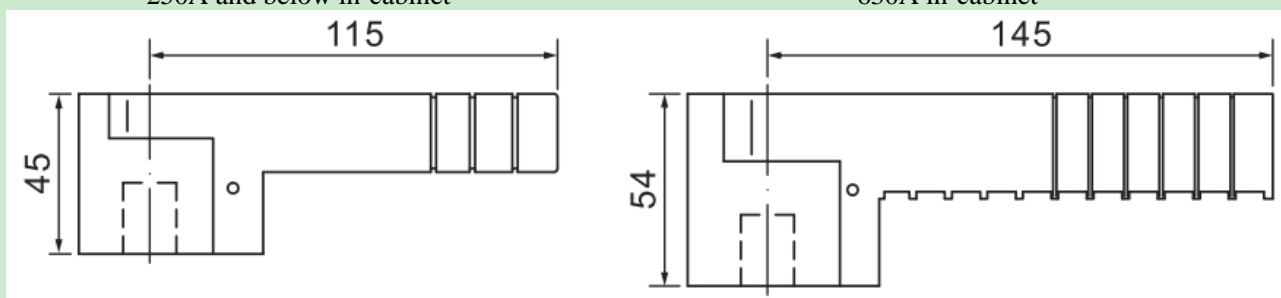


Fig. 9: Dimensions of the handle in cabinet

6.6 The operating handle outside the cabinet is illustrated in Fig. 10

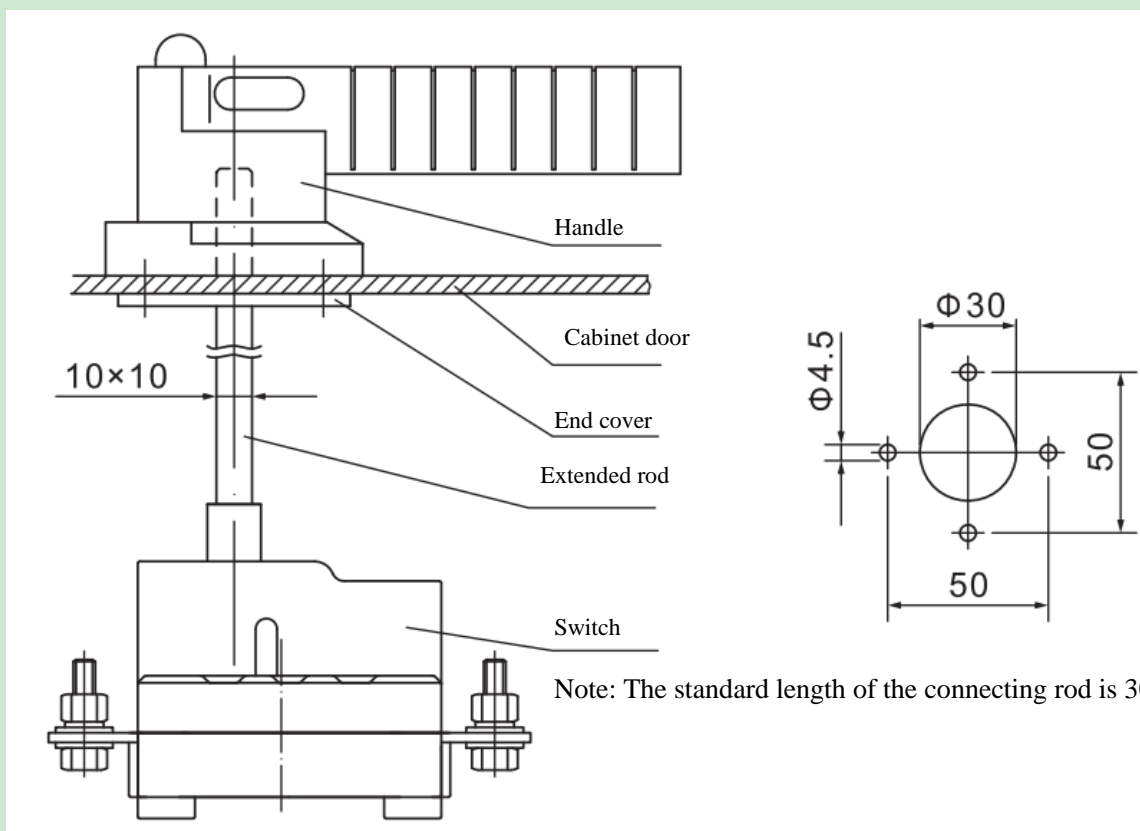


Fig. 10: Size of hole on the panel of the handle outside cabinet

6.7 The outline and installation dimensions of HGL-800T series switch disconnector and the outline and installation dimensions of the switch disconnector are illustrated in Fig. 11 and Table 4.

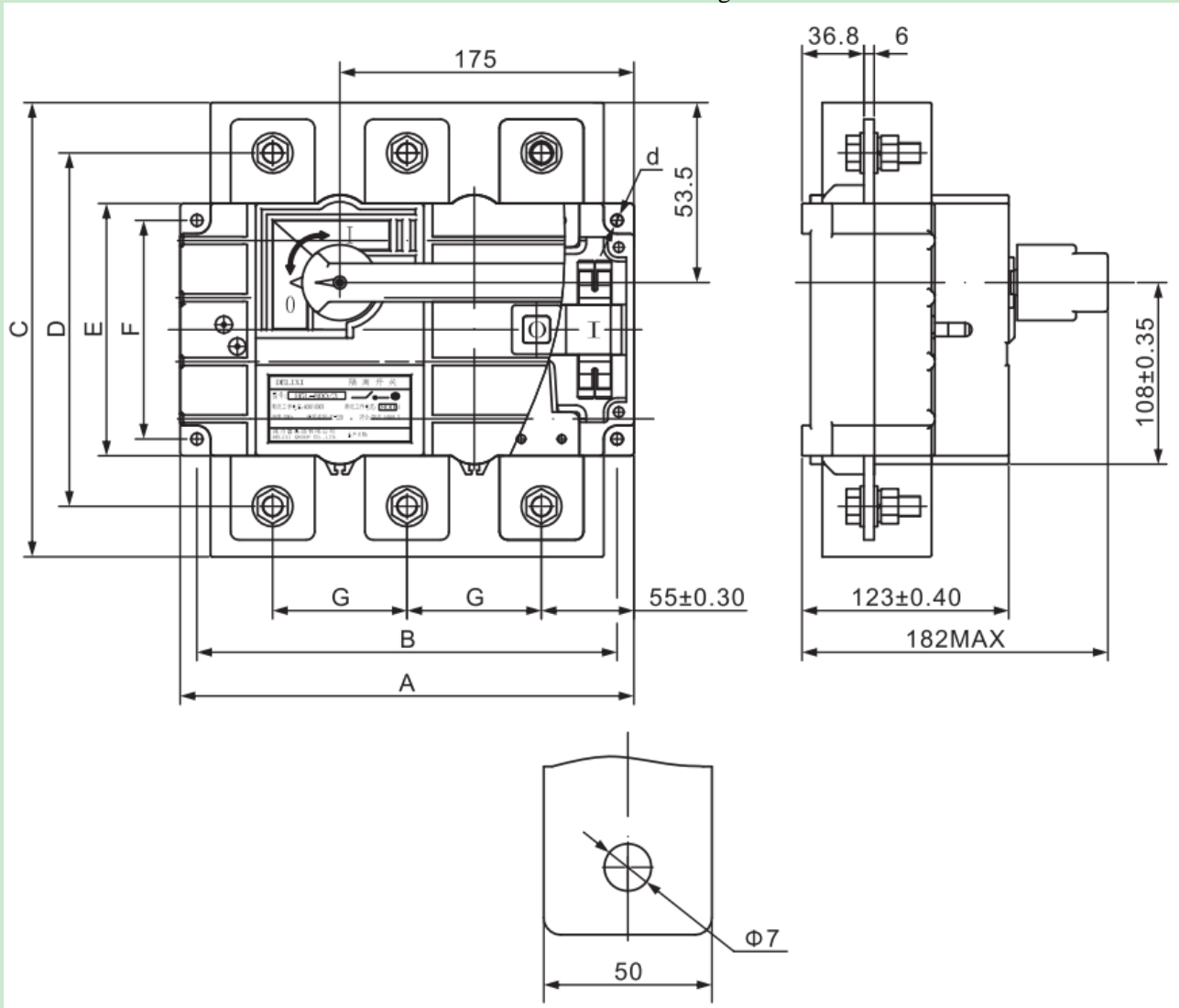


Fig. 11: HGL-800T/3, 4 series switch disconnector installation dimensions

Table 4: HGL-800T series switch disconnector dimensions table

Product model	A	B	C	D	E	F	G	d
HGL - 800T / 3	270	250	270	210	150	130	80	7
HGL - 800T / 4	350	330	270	210	150	130	80	7

6.8 The installation dimensions of HGL, HGLi – 1000 (800) ~ 1600 series switch disconnector are illustrated in Fig. 12 and Table 5.

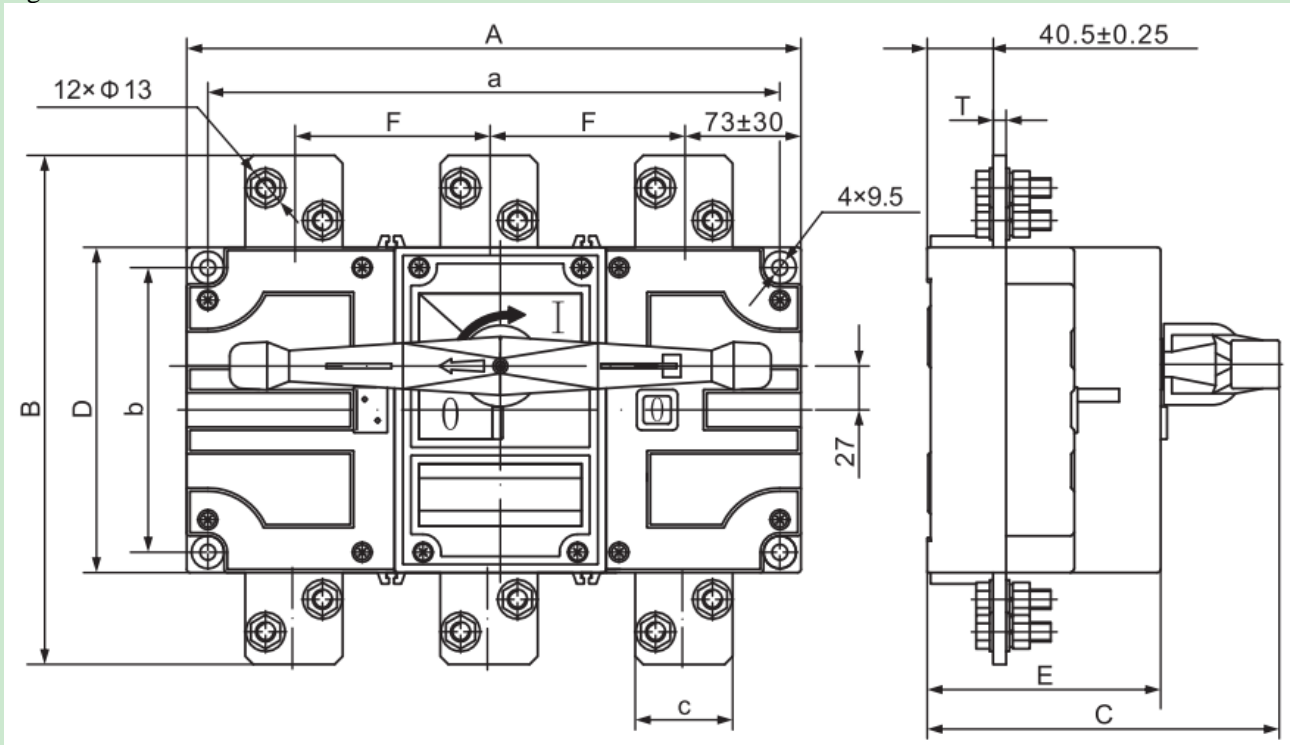
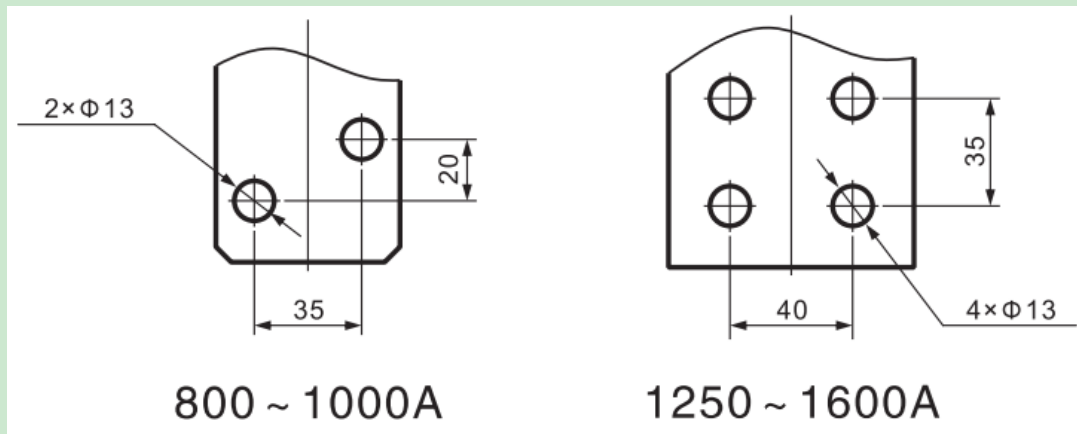


Fig. 12: Installation dimension drawings of HGL, HGLi - 1000 (800) - 1600 series switch disconnector



6.9 The installation dimensions of HGL, HGLi – 1000 (800) ~ 1600 series switch disconnector out of the cabinet are illustrated in Fig. 13 and Table 5.

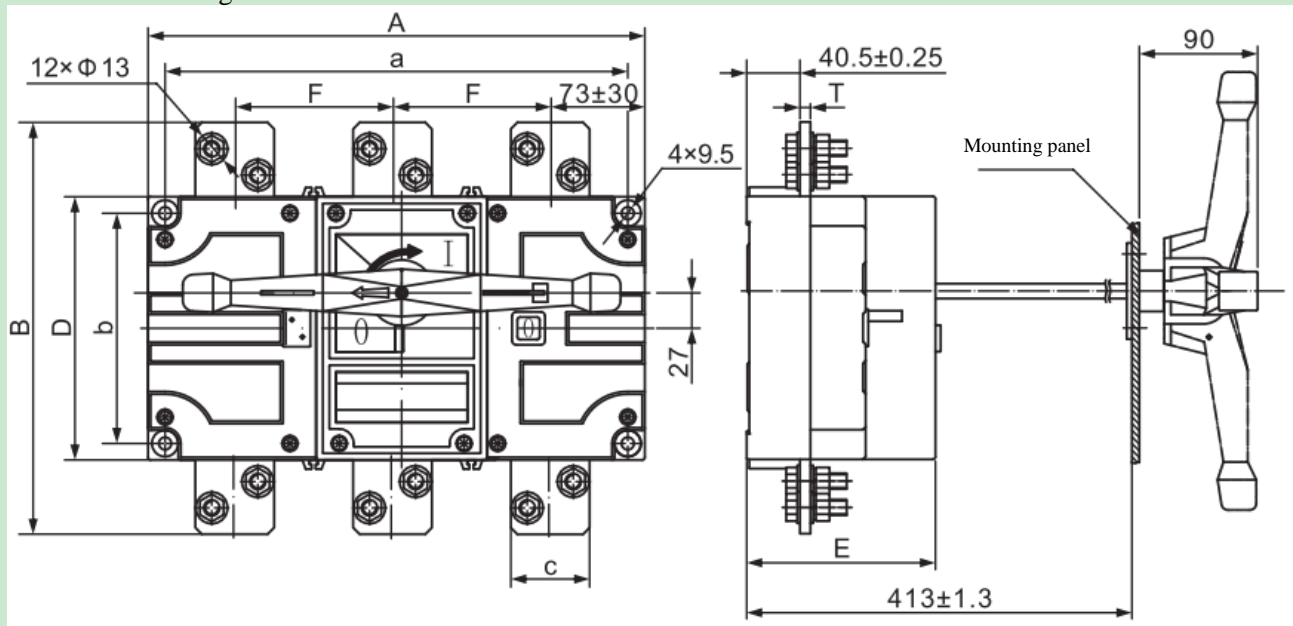


Fig. 13 Installation dimension drawings of HGL, HGLi – 1000 (800) ~ 1600 series switch disconnector out of the cabinet

6.10 The size of the mounting hole of the operating handle out of the cabinet are illustrated in Fig. 14 and Fig. 15

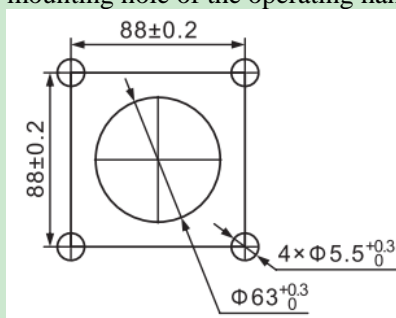


Fig. 14 Dimension drawing of the mounting hole of the operating handle out of the A type cabinet

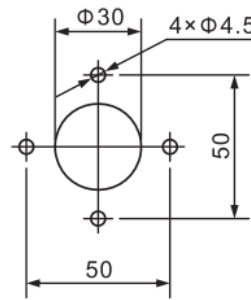


Fig. 15 Dimension drawing of the mounting hole of the operating handle out of the B type cabinet

Note: The standard length of the connecting rod is 300 mm.

Table 5: HGL, HGLi – 1000 (800) ~ 1600 series switch disconnector dimensions table

Model & Spec.	A	B	C	D	E	F	a	b	c	T
HGL、HGLi-1000(800)/3	378	313	222	200	144	120	352	175	60	8
HGL、HGLi-1000(800)/4	490	313	222	200	144	120	465	175	60	8
HGL、HGLi-1250/3	378	356	222	200	144	120	352	175	80	8
HGL、HGLi-1250/4	490	356	222	200	144	120	465	175	80	8
HGL、HGLi-1600/3	378	356	222	200	144	120	352	175	80	10
HGL、HGLi-1600/4	490	356	222	200	144	120	465	175	80	10

6.11 The installation dimensions of HGL, HGLi – 2000 ~ 3150 series switch disconnector are illustrated in Fig. 16 and Table 6.

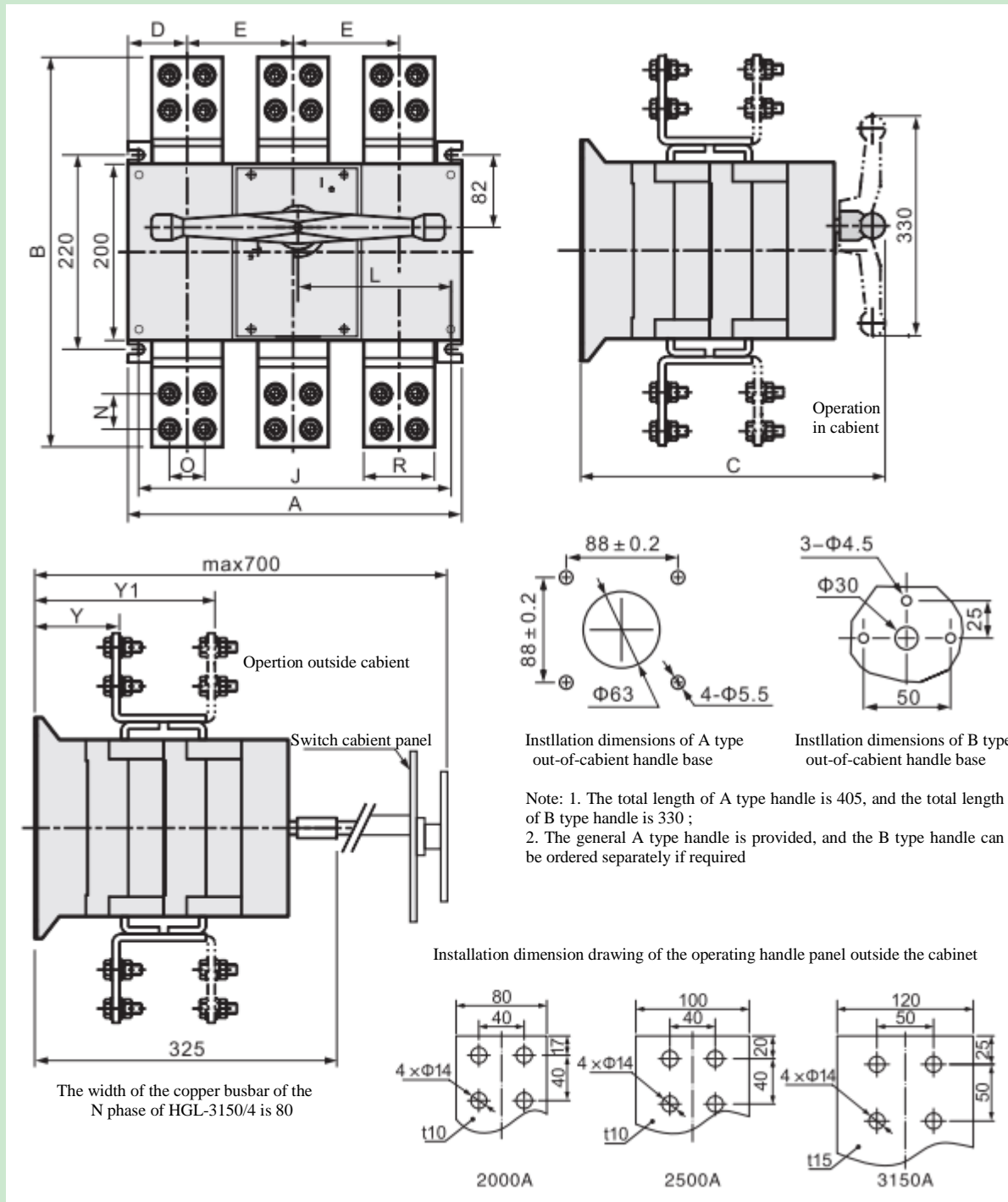


Fig. 16: Installation dimension drawings of HGL, HGLi-2000 ~ 3150 series switch disconnector

Table 6: Dimension table of HGL, HGLi-2000 ~ 3150 series switch disconnectors

Model & Spec.	A	B	C	D	E	L	J	N	O	R	Y	Y1
HGL、HGLi-2000/3	378	440	365	65	120	173.5	352	40	40	80	100.5	200.5
HGL、HGLi-2000/4	493	440	365	60	120	235	467	40	40	80	100.5	200.5
HGL、HGLi-2500/3	378	470	365	65	120	173.5	352	40	40	100	100.5	200.5
HGL、HGLi-2500/4	493	470	365	60	120	235	467	40	40	100	100.5	200.5
HGL、HGLi-3150/3	383	534	365	56	130	173.5	352	50	50	120	94.5	211.5
HGL、HGLi-3150/4	503	534	365	50	130	235	467	50	50	120	94.5	211.5

6.12 The in-cabinet operating handle sees Fig. 17

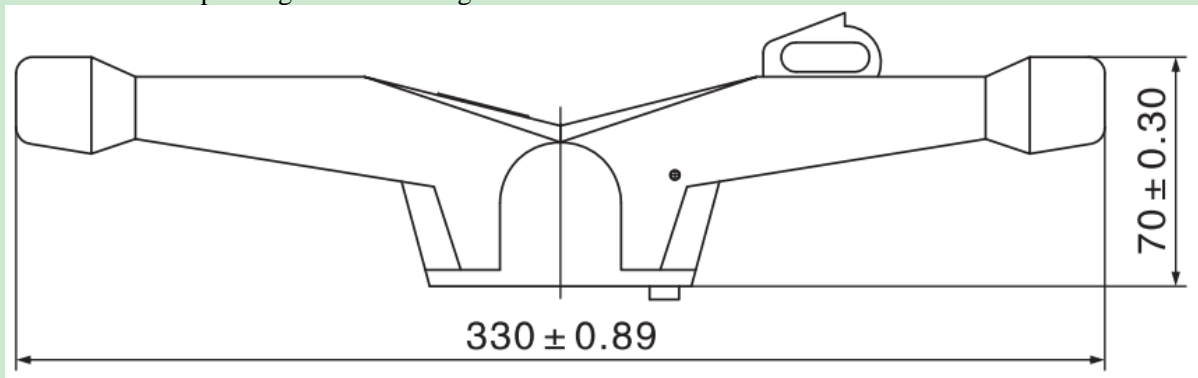
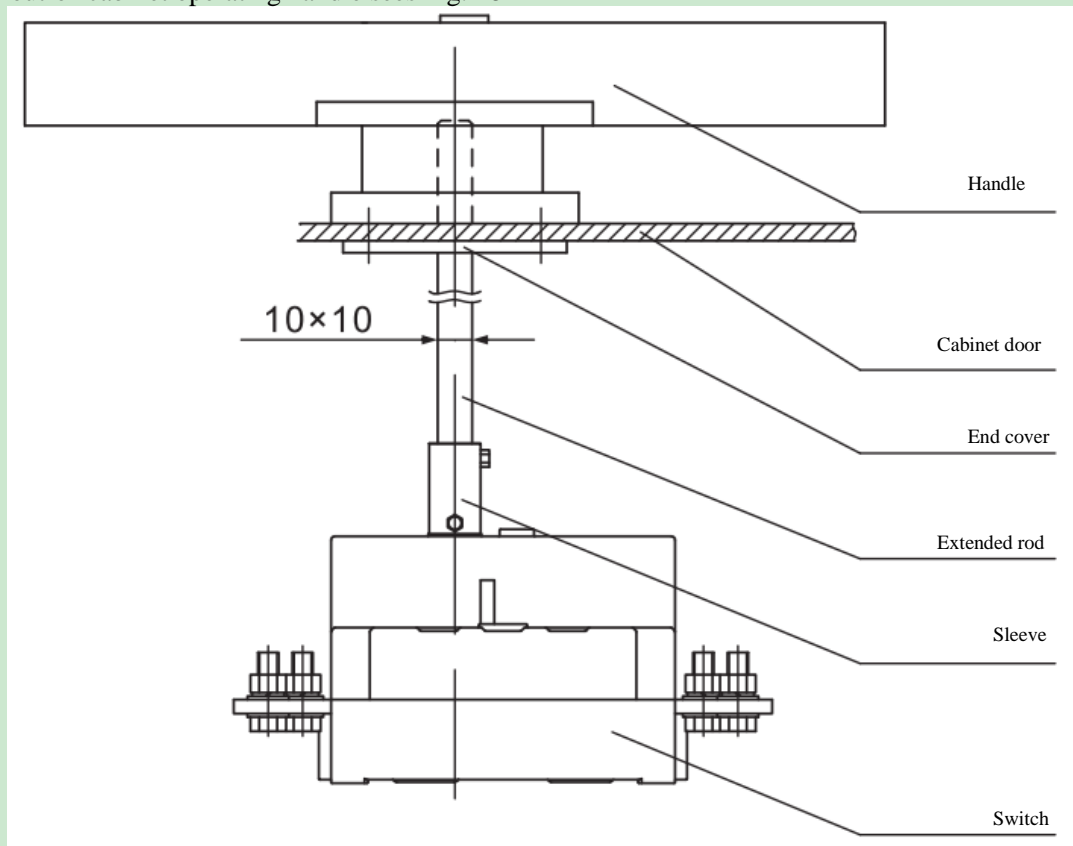


Fig. 17 In-cabinet handle dimensions drawing

6.13 The out-of-cabinet operating handle sees Fig. 18



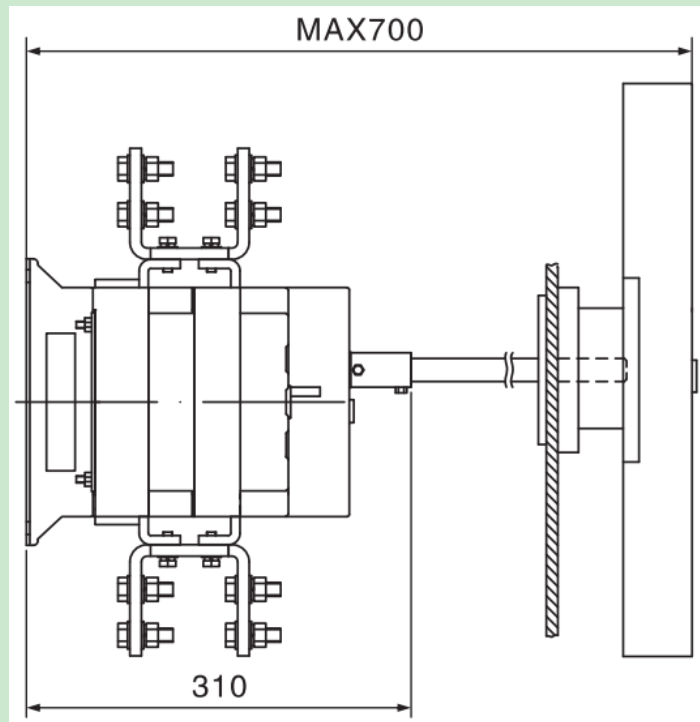


Fig. 18: Out-of-cabinet handle installation diagram

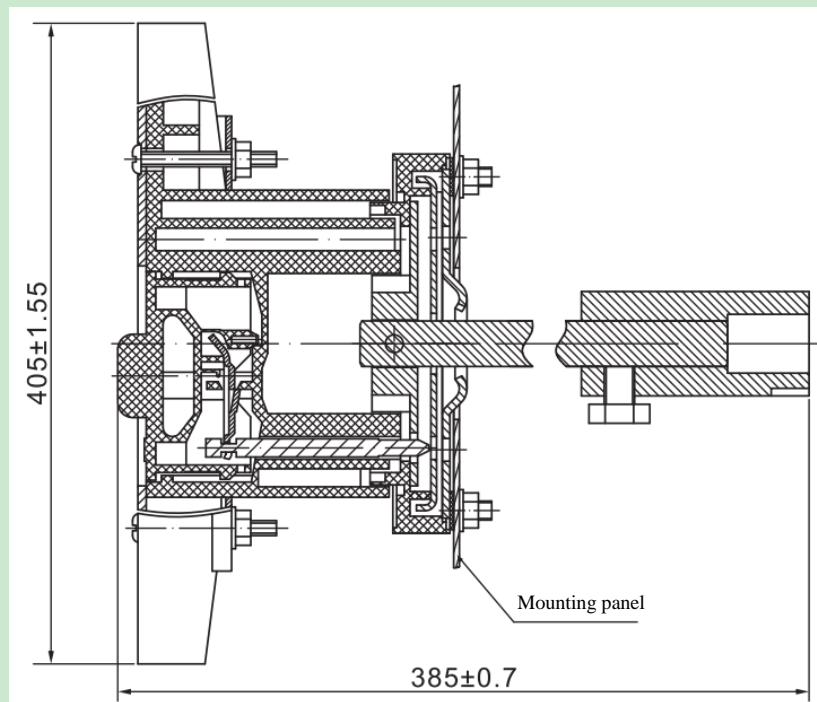


Fig. 19 Dimension drawings of A type out-of-cabinet handle

7 Installation Diagram Description

7.1 Installation instructions for the disconnecter operated in the cabinet

As illustrated in Fig. 20, fix and install the disconnecter on the mounting plate in the disconnecter cabinet vertically, and turn the switch to the "O" position; insert the expansion block into the hole on the square shaft of the disconnecter, assemble the handle sleeve onto the square shaft of the disconnecter, and make the handle in the horizontal position; pass the self-tap screw through the hole on the handle and then tighten it into the expansion block.

7.2 Installation instructions for the disconnecter operated outside the cabinet

(1) As illustrated in Fig. 21, fix and install the disconnecter on the mounting plate in the disconnecter cabinet vertically, turn the switch to the "O" position, and then measure the distance L from the top of the square shaft of the disconnecter to the inner surface of the cabinet door.

(2) As illustrated in Fig. 22, measure the length $(L+66)$ mm at the end of the bolt of the extended shaft, and saw off the excess part.

(3) As illustrated in Fig. 23, if the cabinet door interlock (that is, when the disconnecter is closed, the cabinet door cannot be open; when the cabinet door is open, the disconnecter cannot be closed), the black cylindrical pin at the bolt end of the extended shaft is pulled out; if the cabinet door interlock is required, it cannot be pulled out. Insert the extended shaft into the bottom of the hole on the square shaft of the disconnecter, and then tighten the fastening screw of the square shaft of the disconnecter.

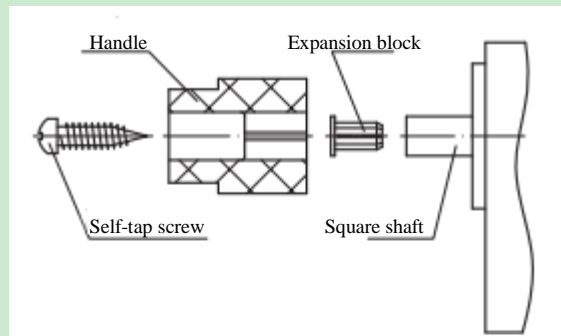


Fig. 20: Disconnecter operated in the cabinet

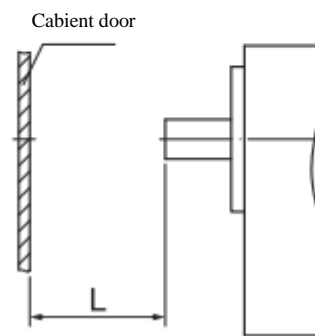


Fig. 21: Disconnecter operated outside the cabinet

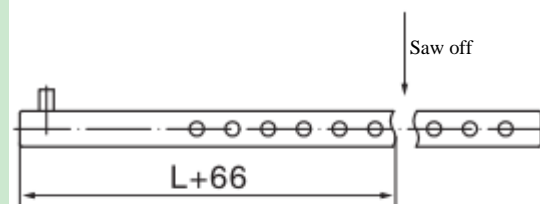


Fig. 22: bolt end of the extended shaft

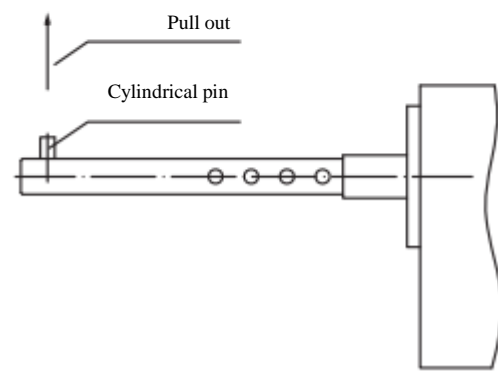


Fig. 23: Diagram

(4) As illustrated in Fig. 24, tap the contact point between the cabinet door and the top of the extended shaft outside the cabinet with a hand hammer to determine the center of the drill hole, drill a $\phi 6$ hole at the center of the drill hole from the inside of the cabinet to the outside, and then ream the hole to $\phi 30$.

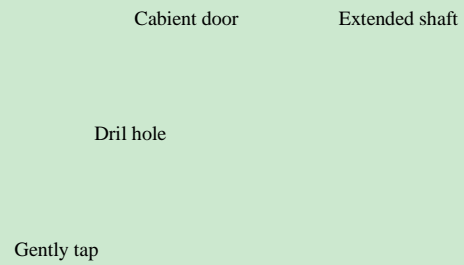


Fig. 24: Diagram

(5) As illustrated in Fig. 25, insert the protruded center part of the end cover of the round disc into the $\phi 30$ hole on the cabinet door; with four small holes on the end cover used for positioning, drill 4- $\phi 4.5$ holes in the left and right horizontal directions and the upper and lower vertical directions, and then knock off the extruded center part of the end cover with a hand hammer.

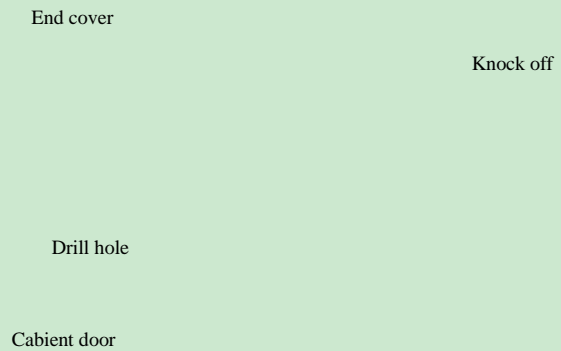
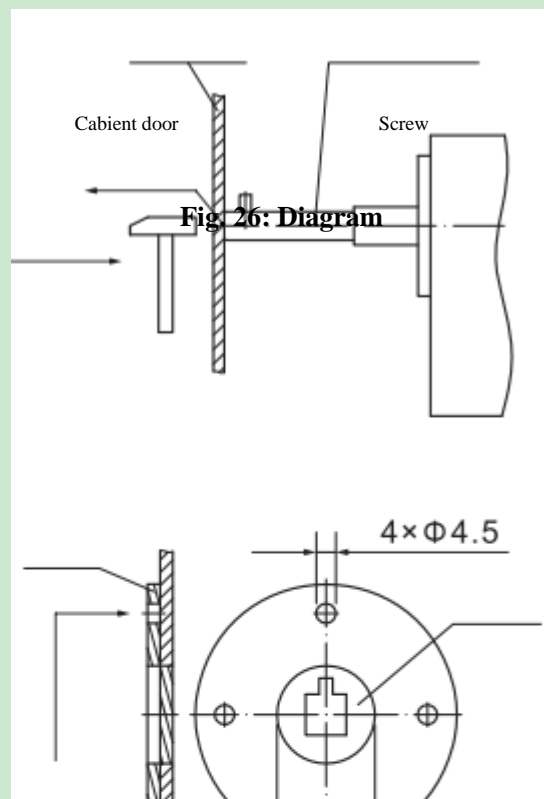
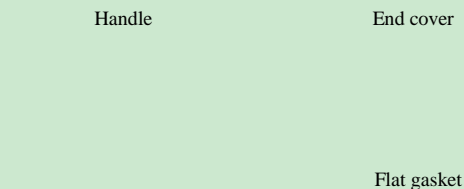


Fig. 25: Diagram

(6) As illustrated in Fig. 26, fix the end cover (installed inside the cabinet door) of the round disc and the handle (installed outside the cabinet door) into the holes on the cabinet door with the machine accessories (two self-tap screws and flat gaskets); when installation, the handle shall be in the horizontal position and indicates to the "O" position.



8 Operation and Maintenance

8.1 The disconnecter should be installed vertically, and the rated current of the disconnecter should be selected according to the capacity of the electrical equipment; before installing the disconnecter, check whether the disconnecter nameplate meets the requirements of use, and confirm that the disconnecter is in the OFF state that is the disconnecter indicates the "O" position.

8.2 The terminal block and the wiring copper busbar of the disconnecter should be wrapped with insulation to prevent the short circuit between phases of the disconnecter.

8.3 If the extended shaft of the disconnecter operated outside the cabinet is noncoaxial with the handle hole on the cabinet, do not pull the extended shaft to prevent damage to the internal parts of the disconnecter, and please adjust the position of the disconnecter until it is coaxial with the hole.

8.4 The operating handle of the disconnecter operated outside the cabinet door and its mechanism shall have interlock protection function: when the disconnecter is closed, the cabinet door cannot be open; when the cabinet door opens, the switch cannot be closed. If the interlock is not required, please flatly grind the cylindrical pin on the extended shaft or the extruded rib of the Al connecting sleeve.

8.5 Rotate the operating handle clockwise to turn on the disconnecter, and rotate the operating handle counter clockwise to turn off the disconnecter. Before each operation, please check the indication status of the disconnecter: when the disconnecter is in the OFF position "O", please turn it clockwise to turn on it only; when the disconnecter is in the ON position "I", please turn it counter clockwise to turn off it only.

8.6 In order to prevent mis-operation by irrelevant personnel, the disconnecter shall be locked with a padlock no matter what position it is in, so that the handle cannot no longer be turned.

8.7 The contact of the disconnecter should be checked frequently, and the debris such as dust and oil dirt shall be removed timely; the friction parts of the operating mechanism shall be filled with oil regularly to flexible operation and prolong the service life.

9. Warranty Description and After-Sales Service

The free repair or replacement will be provided by the company for damage or abnormal operation of the product produced by our company due to poor manufacturing quality under the user's compliance with the conditions of storage and operation within 24 months from the date of the production (refers to the date marked on the product certificate or product) or within 12 months from the date of purchase (refers to the date indicated on the invoice). However, the paid repair or paid replacement is provided for faults caused by one of the following situations even within the warranty period:

- a) Failure to comply with the standards and regulations when operating the product;
- b) Self-modification or improper maintenance;
- c) Irresistible nature disasters such as earthquakes, fires, lightning strikes, and abnormal voltages.

10 Ordering Notice

Please specify the model, specification, voltage level, current level, the number of poles, and quantity of the disconnecter when ordering, and please contact our company's technical department for special orders.

For example: HGL-250/4 400V 20 units.



Product Certificate

Name: Switch Disconnecter

Model: HGL, HGLi series

The product complies with the GB/T 14048.3 standards, and passes the inspection and is allowed to be shipped.

Inspector: Check 03

Inspection date: See product or package

Manufacturer: DELIXI Group Co., Ltd.

Address: No. 155, Zhandong Road, Liushi Town, Yueqing City, Zhejiang Province P.C.: 325604

Tel: (86-577) 6177 8888

Fax: (86-577) 6177 8000

Customer Service Hotline: 400-826-8008

www.delixi-electric.com