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HD17系列刀形隔离器

HD 17 Series Knife Isolator

使用说明书
Operating Manual



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6.5 隔离器的触头应经常检查，清理灰尘和油污等物，保证良好接触。

The contacts of the isolator should be inspected regularly to remove the dust, oil, etc. to ensure good contact.

7. 订货须知

Ordering instruction

订货时必须作如下说明：

The following instructions must be made when ordering:

7.1 产品名称及型号。

Product name and model;

7.2 电流等级。

Current rating;

7.3 订货数量及交货日期。

Order quantity and delivery time.

1. 适用范围

Scope of application

HD17系列刀形隔离器(以下简称隔离器)其额定工作电压为交流50Hz、400V，直流230V，约定发热电流1600A及以下的配电路中作电源隔离之用，带灭弧室的产品在规定的条件下可用来接通或分断交流电路。

The rated working voltage of HD17 series knife isolator (hereinafter referred to as the isolator) is AC 50Hz, 400V and the DC 230V and is used for the power isolation in the distribution circuits with conventional thermal current of 1600A and below and the product with interrupter could be used to switch on and off the AC circuit under the specified conditions.

注：1. 带有灭弧室的产品在规定的条件下，如用来接通和分断直流电路，用户应与制造厂协商。

Note: 1. The product with the interrupter could be used to switch on and off the DC circuit under the specified conditions. The user could consult with the manufacturer.

2. 2000A、2500A、3200A规格由用户与制造厂协议供货。

2. The specifications of 2000A, 2500A and 3200A are available. The user could consult with the manufacturer.

本系列隔离器的正常工作条件：

The normal working conditions of this series of isolators:

1.1 周围空气温度不超过+40°C，而在24小时周期内的平均温度不超过+35°C，周围空气温度一般情况下不低于-5°C；（贮运过程中的环境温度不能低于-25°C）。

The ambient air temperature does not exceed +40°C, but the average temperature in the 24-hour period does not exceed +35°C, and the ambient air temperature is not lower than -5°C in general; (The ambient temperature during storage and transportation cannot be lower than -25°C).

1.2 海拔高度一般不超过2000m，用于更高海拔时请与制造厂协商。

The altitude generally does not exceed 2000m. For higher altitudes, please consult with the manufacturer.

1.3 大气相对湿度在周围空气温度为+40°C时不超过50%，在较低温度可以有较高的相对湿度，最湿月的平均最大相对湿度90%。

The atmospheric relative humidity does not exceed 50% when ambient air temperature is +40°C. The relative humidity may be higher at lower temperatures, and the average maximum relative humidity of the wettest month is 90%.

1.1 环境中无持久性的导电性污染，例如有导电尘埃或雨雪所造成的污染。

There is no persistent conductive pollution in the environment, such as conductive dust or pollution caused by rain and snow.

1.2 隔离器的安装类别为IV类。

The installation category of the isolator is Class IV.

1.3 隔离器应垂直安装在无显著摇动和冲击振动的地方。

The isolator should be installed vertically in places where there is no significant vibration and shock.

2. 结构特征

Structure

2.1 各种操作方式的隔离器中，100-400A采用单刀片，630-1600A采用双刀片，触头压力均有二侧加装片状弹簧来取得，刀片与外部导线联接的触头皆镀锡，加强表面保护和改善与导线联接的接触电阻。

Among the isolators with various operating modes, the 100-400A applies the single blade and 630-1600A applies the double blades and the contact pressure is obtained by attaching leaf springs on both sides and the contact between the blade and the external wire is tin-plated to strengthen the surface protection and improve the contact resistance with the wire connection.

2.2 杠杆传动式的隔离器，供切断额定工作电流者，皆采用灭弧室，以保证分断电路的安全可靠，灭弧室系有绝缘纸板和钢栅片拼铆而成，灭弧室的安装，扣住在弹簧卡子的支架上，安装和拆卸均极方便，不同

buckled on the bracket of the spring clip and is very convenient for installation and disassembly. The different types of isolators adopt a unified type of drive mechanism. The drive mechanism has the clear disconnection and closing indicators and the reliable installation devices. Each terminal of the isolator has a clear mark for identification. The power terminals are U1, V1, and W1, and the load terminals are U2, V2, and W2, respectively.

2.3 中央正面杠杆传动式的隔离器，为了便于开关板上的设计和安装，100-1000A的纵向安装尺寸皆相同。

For the central front level drive isolator, the vertical installation sizes of 100-1000A are the same in order to facilitate the design and installation of the switch board.

2.4 隔离器的安装板采用DMC不饱和聚酯树脂玻璃纤维增强模塑料。

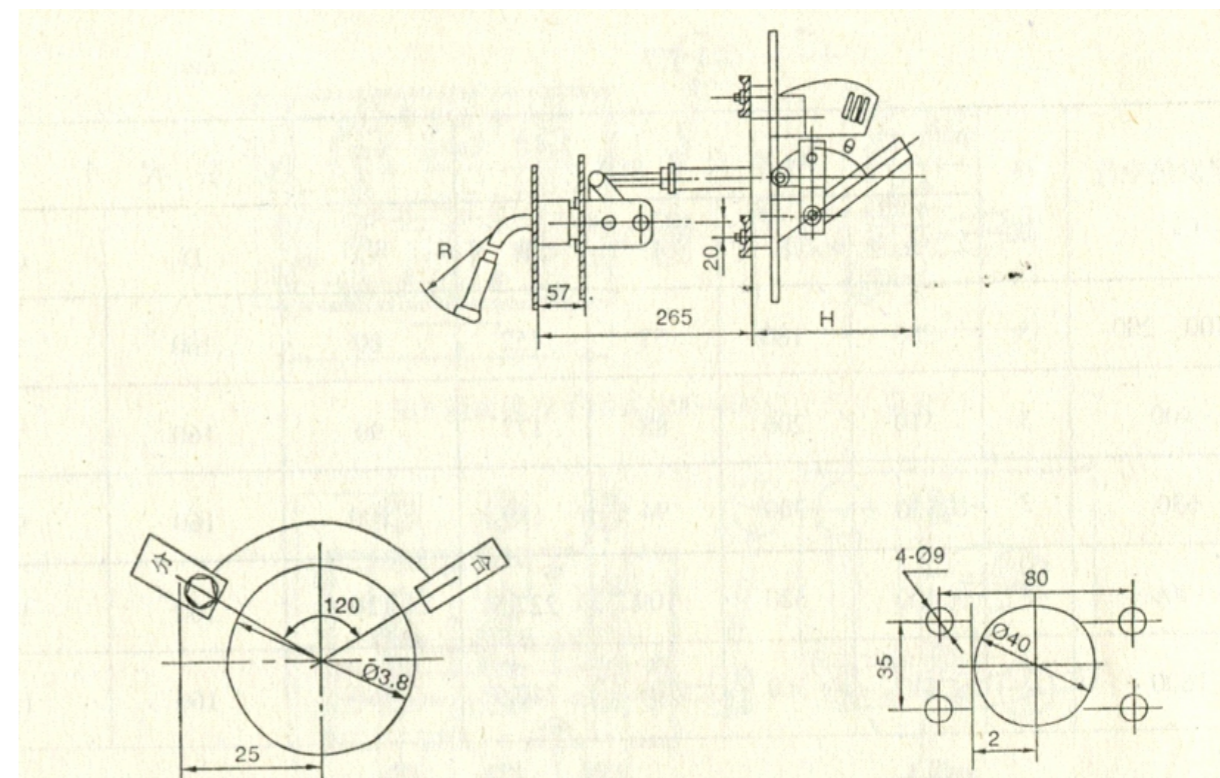
The isolator mounting plate uses DMC unsaturated polyester resin glass fiber reinforced molding compound.

3 型号含义

Model meaning

HD 17X -□/□□□□

- “8”表示前接线；“9”表示后接线
"8" indicates the front wiring; "9" indicates the rear wiring
- “0”表示不带灭弧室；“1”表示带灭弧室
"0" means no interrupter; "1" means with interrupter
- 操作方式 “1”表示中央手柄式；
Operation mode "1" indicates central handle;
- “2”表示侧方正面杠杆操作机构式；
"2" indicates the front lateral lever operating mechanism;
- “3”表示中央正面杠杆操作机构式；
"3" indicates the front central lever operating mechanism;
- “4”表示侧方操作手柄式；
"4" indicates the lateral handle;
- 极数，“1”为1极；“2”为2极；“3”为3极；“4”为4极
Number of poles, "1" is 1 pole; "2" is 2 poles; "3" is 3 poles; "4" is 4 poles;
- 约定发热电流（即额定工作电流）(A)
Conventional thermal current (namely rated working current) (A)
- “X”代表旋转操作
"X" indicates rotation
- 设计代号
Design code
- 刀形隔离器
Knife isolator



开关中线
Switch center line
开关柜面板开孔及指示位置图
Switch cabinet panel opening and indication position

开关中线
Switch center line
操作机构安装板开孔位置图
Operating mechanism installation panel opening position

HD17X系列隔离器外形及操作机构安装板开孔图
HD17X series isolator appearance and operating mechanism installation panel opening

6. 使用维护

Use and maintenance

6.1 隔离器要垂直安装后，才能投入正常运行。

The isolator must be installed vertically before it can be put into normal operation.

6.2 中央手柄式隔离器其分闸位置为手柄打开90°的位置。

The breaking position of central handle isolator is where the handle is opened by 90°.

6.3 安装隔离器的传动机构时，隔离器触头的三相不同步性应调整在2mm以内，以保证产品的电性能。

When installing the isolator drive mechanism, the three-phase asynchronicity of the isolator contact should be adjusted within 2mm to ensure the electrical performance of the product.

6.4 使用隔离器的接地装置时需清除装置表面的氧化层，以保证可靠接地。

When using the isolator grounding device, remove the oxide layer on the surface of the device to ensure reliable grounding.

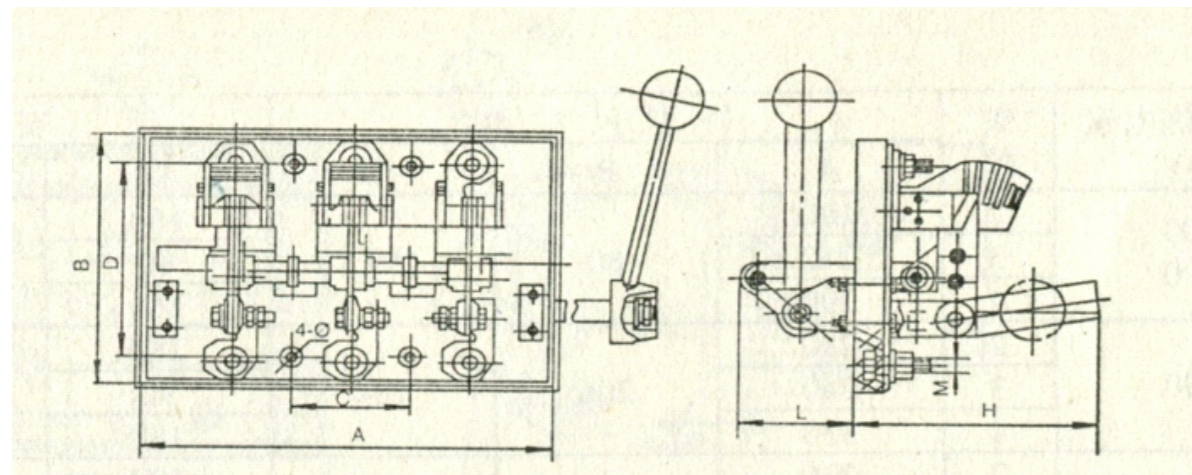


图9 侧面操作手柄式 (100-400A) (尺寸见表7)

Fig. 9 Lateral handle (100-400A) (Dimension in Table 7)

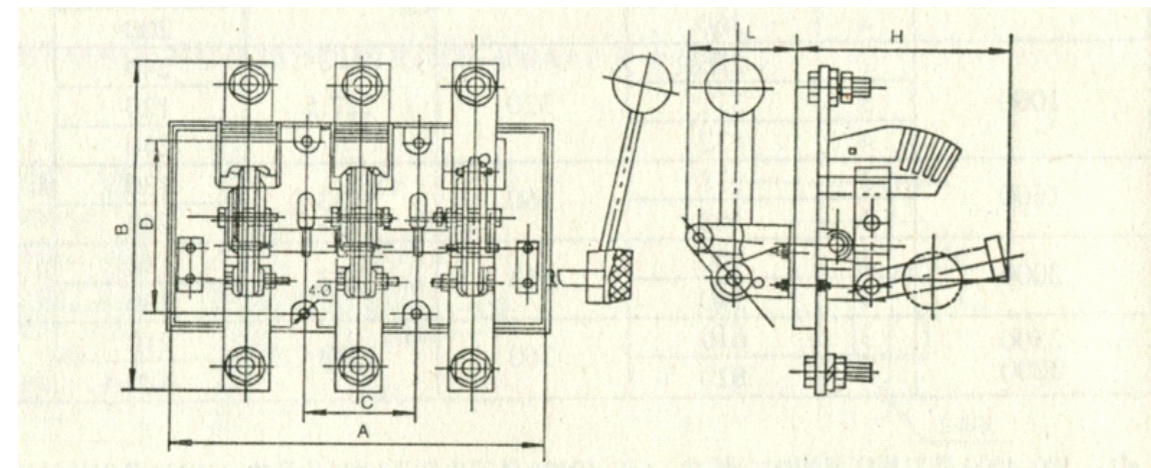


图10 侧面操作手柄式 (630-1600) (尺寸见表7)

Fig. 10 Lateral handle (630-1600) (Dimension in Table 7)

表7 mm

约定发热电流 Conventional thermal current (A)	极数 Number of poles	外形尺寸 max Dimension max				安装尺寸 Installation dimension		
		A	B	L	H	C	D	Φ
100,200	3	280	180	77	152	80	160	7
400	3	310	206	88	177	90	160	7
630	3	330	300	94	189	100	160	9
1000	3	400	320	109	227.5	120	160	9
1600	3	440	360	109	240.5	180	160	11

4. 主要技术数据

Main technical data

4.1 隔离器的额定短时耐受电流如表1所示。

The rated short-time withstand current of the isolator is shown in Table 1.

	额定工作电压 Rated working voltage Ue(V)	约定发热电流 Conventional thermal current Ith(A)	额定短时耐受电流有效值 Rated short-time withstand current effective value (kA)	标准功率因数 Standard power factor	电流峰值与有效值之比 Ratio of current peak to effective value	通电时间 Power-on time (s)
交流 AC	400	100	10	0.5	1.7	1
		200	12	0.3	1.7	
		400	20	0.3	2.0	
		630	20	0.3	2.0	
		1000	25	0.25	2.1	
		1600	35	0.25		

4.2 带有灭弧室的隔离器其接通分断能力如表2。

The connecting and breaking capacity of isolator with interrupter is shown in Table 2.

额定工作电压 Rated working voltage Ue(V)	约定发热电流 Conventional thermal current Ith(A)	使用类别 Using	额定接通和分断能力 Rated connecting and breaking capacity						断通次数 On-Off times
			接通 Connecting			分断 Breaking			
			I/le	U/Ue	Cosφ	I/le	U/Ue	Cosφ	
400	100	AC-20	1	1	0.7	1	1	0.7	接通和分断各5次 On-Off 5 times each
	200				0.8			0.8	
	400								
	630								
	1000								

4.3 额定限制短路电流

Rated conditional short-circuit current

额定工作电流630A及以下规格的隔离器串接RT20或RT16 (或NT) 熔断器保护的额定限制短路电流为50kA。

The rated conditional short-circuit current of the isolator with rated working current of 630A and below connected with RT20 or RT16 (or NT) fuse in series is 50kA.

注: 额定工作电流630A以上规格与制造厂协商。

Note: Consult with the manufacturer about the specifications with rated working current of above 630A.

4.4 隔离器的机械操作性能分别为10000次 (100A、200A、400A) 和5000 (630A、1000A)。

The mechanical performance of the isolator is 10,000 times (100A, 200A, 400A) and 5,000 times (630A, 1000A) respectively.

5. 外型及安装尺寸

Appearance and installation dimension

见图1-图10, 表3-表7。

Refer to Figure 1-10 and Table 3-7.

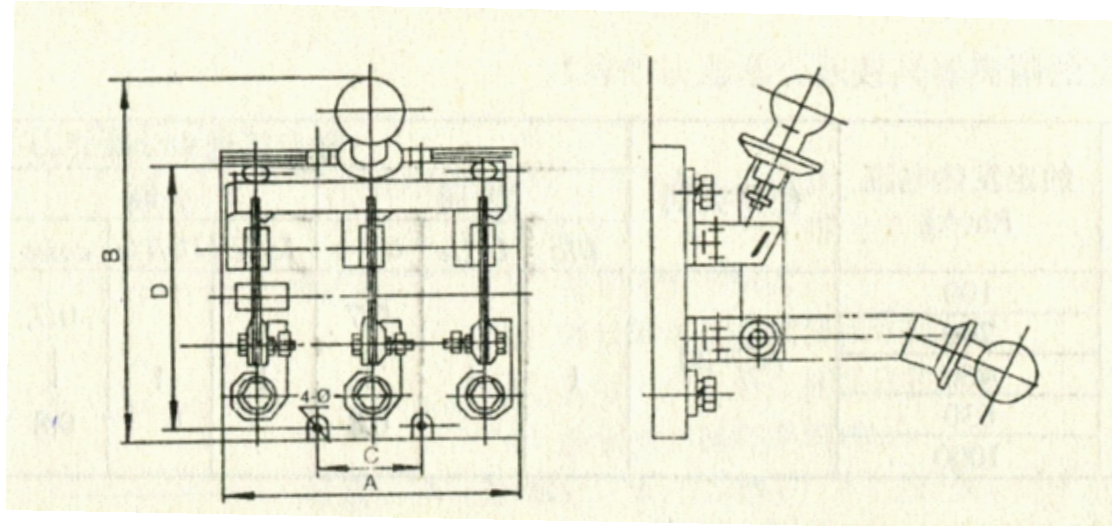


图1 中央手柄式板前接线 (100-400A) (尺寸见表3)

Fig. 1 Central handle board front wiring (100-400A) (Dimension in Table 3)

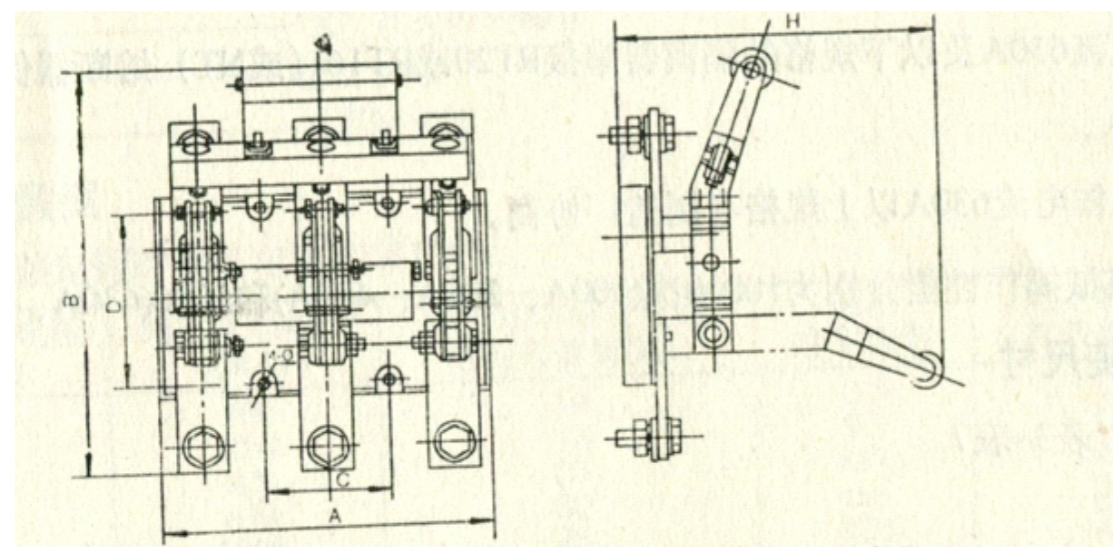


图2 中央手柄式板前接线 (630-1600) (尺寸见表3)

Fig. 2 Central handle board front wiring (630-1600) (Dimension in Table 3)

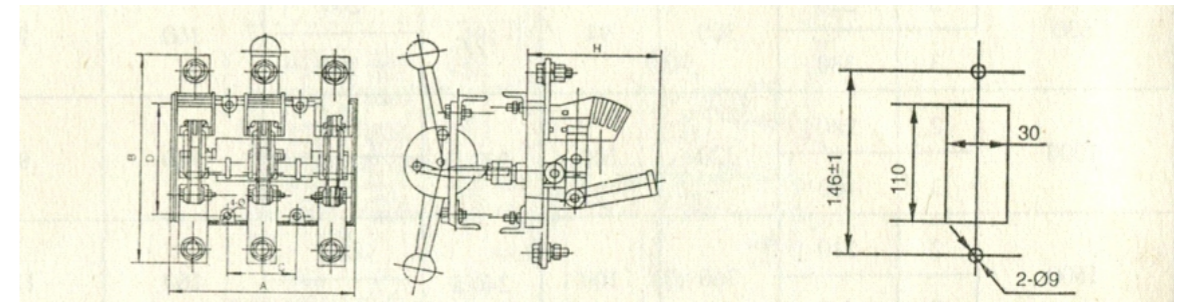


图8 中央正面杠杆操作机构式 (630-1600A) (尺寸见表6) 手柄开孔图

Fig. 8 Front central lever operating mechanism (630-1600A) (Dimension in Table 6)

手柄开孔图

表6 mm

Table 6

约定发热 电流 Conventional thermal current (A)	极数 Number of poles	外形尺寸 max Dimension max			安装尺寸 Installation dimension		
		A	B	*H	C	D	Φ
100 200	2	190	80	159.5	160	160	7
	3	210			80		
	4	290			160		
400	2	210	206	184	180	160	7
	3	240			90		
	4	330			180		
630	2	236	300	189	200	160	9
	3	260			100		
	4	360			200		
1000	2	276	320	227.5	240	160	9
	3	312			120		
	4	432			240		
1600	3	338	360	244	130	160	11
	4	468			260		
2000	3	400	443	253	140	223	11
	4	540			260		
2500 3200	3	610	360	233	210	160	11
	4	820			420		

*H:100-400A是刀片打开90°时的尺寸, 630-1000A是刀片打开80°时的尺寸, 1600A是刀片打开60°时的尺寸。

* H: for 100-400A, it is the dimension when the blade is opened 90°; for 630-1000A, it is the dimension when the blade is opened 80°; for 1600A, it is the dimension when the blade is opened 60°.

表5 mm

Table 5

约定发热电流 Conventional thermal current (A)	极数 Number of poles	外形尺寸 max Dimension max				安装尺寸 Installation dimension		
		A	B	L	*H	C	D	Φ ?
100 200	2	200	180	77	159.5	160	160	7
	3	280				80		
400	2	220	206	88	184	180	160	7
	3	310				90		
630	2	230	300	94	189	200	160	9
	3	330				100		
1000	2	280	320	109	227.5	240	160	9
	3	400				120		
1600	2	310	360	109	240.5	266	160	11
	3	440				180		

*H是刀片打开90°时的尺寸。

* H is the dimension when the blade is opened 90°.

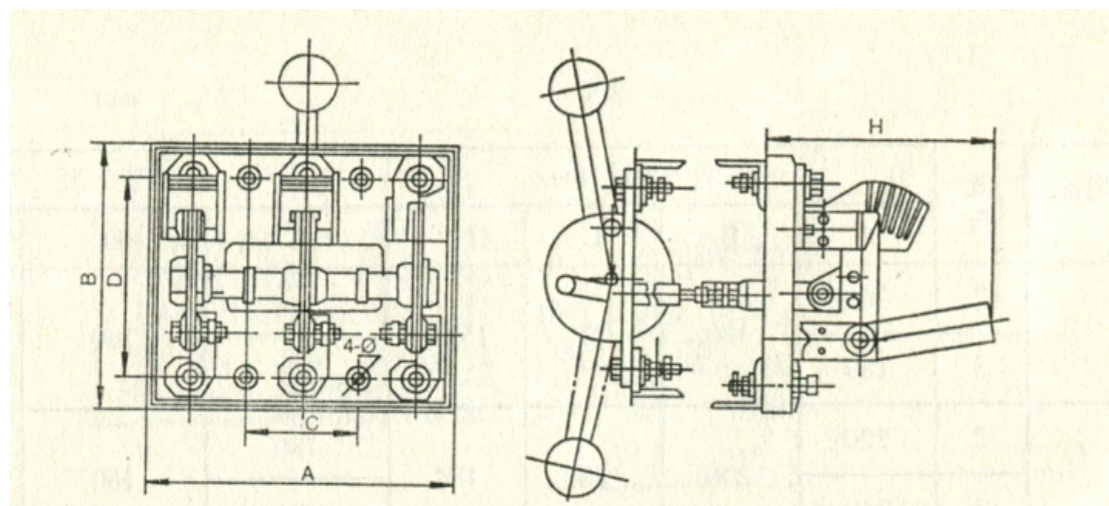


图7 中央正面杠杆操作机构式 (100-400A) (尺寸见表6)

Fig. 7 Front central lever operating mechanism (100-400A) (Dimension in Table 6)

 表3 mm
 Table 3

约定发热电流 Conventional thermal current (A)	极数 Number of poles	外形尺寸 max Dimension max			安装尺寸 Installation dimension		
		A	B	*H	C	D	Φ
100 200	1	100	202.5	205	70	140	7
	2	150			120		
	3	190			70		
400	1	110	263	270	80	190	7
	2	190			160		
	3	210			80		
630	1	136	352.5	324	100	140	9
	2	236			200		
	3	260			100		
1000	1	156	368	353	120	140	9
	2	276			240		
	3	312			120		
1600	3	338	375	365	130	140	11
4000	1	270	458	410	222	195	11

*H是刀片打开90°时的尺寸。

* H is the dimension when the blade is opened 90° .

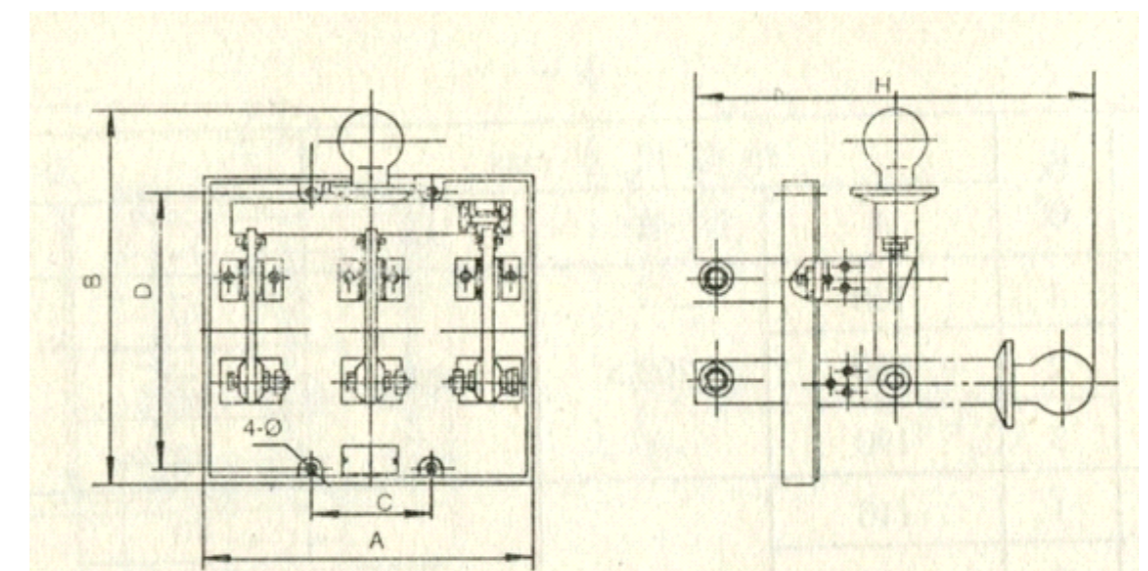


图3 中央手柄式板后接线 (100-400) (尺寸见表4)

Fig. 3 Central handle board rear wiring (100-400A) (Dimension in Table 4)

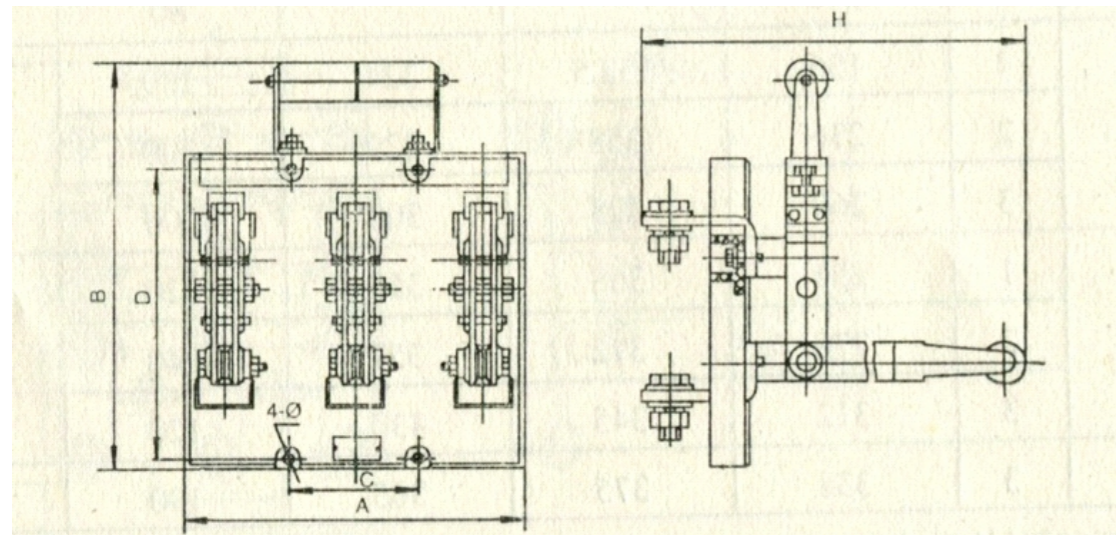


图4 中央手柄式板后接线 (630-1600) (尺寸见表4)
 Fig. 4 Central handle board rear wiring (630-1600) (Dimension in Table 4)

表4 mm
 Table 4

约定发热 电流 Conventi onal thermal current (A)	极数 Number of poles	外形尺寸 max Dimension max			安装尺寸 Installation dimension		
		A	B	*H	C	D	Φ
100 200	1	100	221	272	70	160	7
	2	150			120		
	3	190			70		
400	1	110	267	321	80	190	7
	2	190			160		
	3	220			80		
630	1	136	333	380	100	220	9
	2	236			200		
	3	260			100		
1000	1	156	379	434	120	260	9
	2	276			240		
	3	350			120		
1600	1	190	409	449	130	300	11
	2	290			240		
	3	390			130		

*H是刀片打开90°时的尺寸。
 * H is the dimension when the blade is opened 90° .

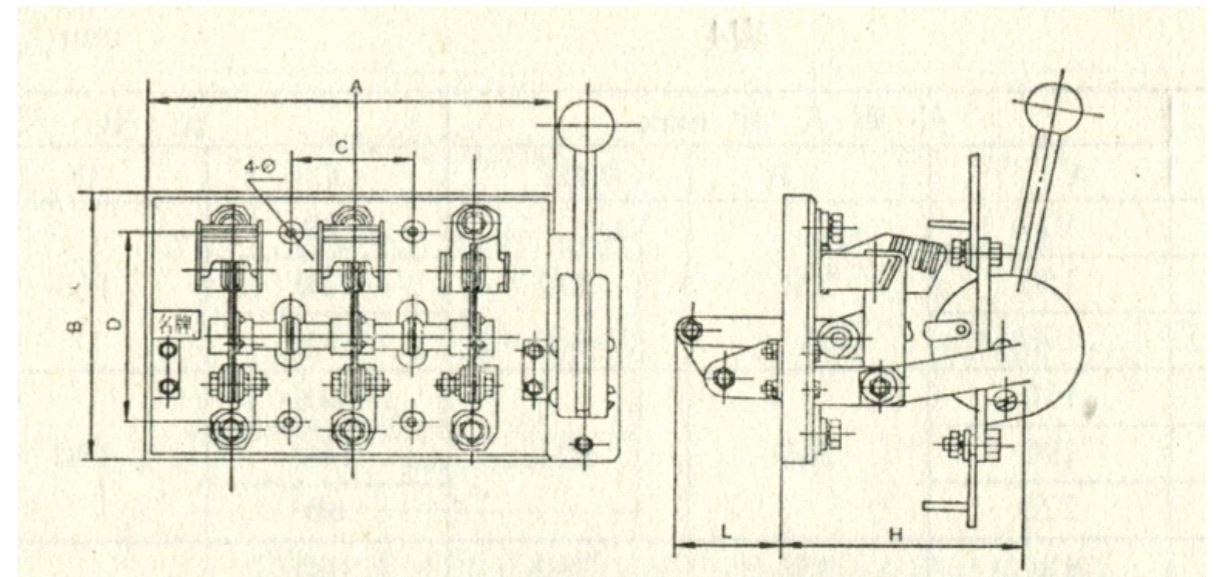


图5 侧方正面杠杆操作机构式 (100-400A) (尺寸见表5)
 Fig. 5 Front lateral lever operating mechanism (100-400A) (Dimension in Table 5)

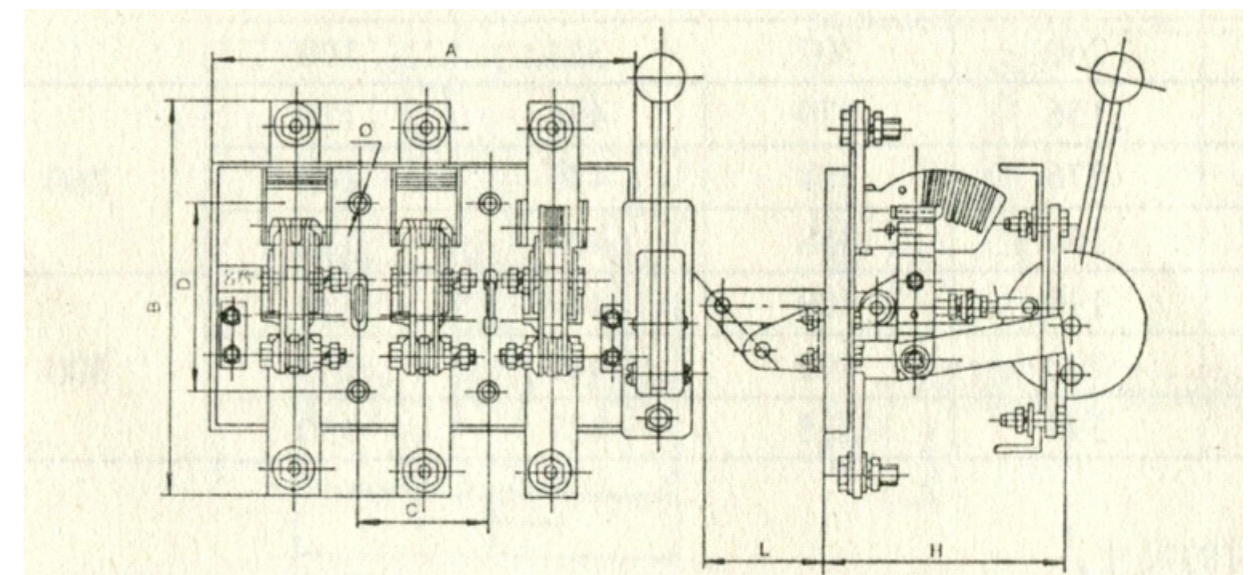


图6 侧方正面杠杆操作机构式 (630-1600A) (尺寸见表5)
 Fig. 6 Front lateral lever operating mechanism (630-1600A) (Dimension in Table 5)