

Indoor three-pole disconnectors type OWIII

for 7.2÷36 kV voltage

Catalogue card



1. CHARACTERISTIC FEATURES

- simple construction
- good technical and application parameters
- durability and reliability
- ease of service and maintenance
- does not require spare parts

2. APPLICATION

The indoor three-pole disconnectors are designed for closing and opening electric circuits in currentless states. In open position, they make a safe and visible isolating gap. Earthing switches mounted on disconnectors are meant for short circuiting and earthing electrical grids that have been disconnected from the power supply. They are used in high voltage indoor a/c switchgears.

3. SERVICE CONDITIONS

Disconnectors are adapted to operation in closed compartments in temperate climate conditions, at ambient temperatures from -5°C to +40°C. Installation of apparatus in other environmental conditions requires arrangement with the manufacturer.

4. MODEL DESIGNATION

The designation of particular switch types is constructed in the following way:

OWIII	20	/6	UD	- 2	/160
Type of disconnector	Rated voltage	Rated current	Type of earthing switch	Type of insulator	Pole distance
	7.2 – 7,2 kV 10 – 12 kV 17.5 – 17.5 kV 20 – 24 kV 30 – 36 kV	6 – 630 A 8 – 800 A 10 – 1000 A 12 – 1250 A 16 – 1600 A	UD - lower earthing switch UG - upper earthing switch	1 – porcelain 2 - resin	marked only in cases of pole distance other than typical

5. DESIGN AND OPERATING PRINCIPLE

The OWIII type disconnectors distinguish the sweep movement of the moving contacts. A steel frame is the base of the disconnector, which with the shaft and shaft rotation angle limiter, forms an integral subassembly. On the base support, insulators are mounted, in which the current circuit is placed. An air gap is the interpolar insulation. In disconnectors with a smaller interpolar graduation the air gap is strengthened additionally with insulation plates.

Disconnectors can be opened and closed with operating mechanisms:

- manual type NRWO4/...-3,
- manual type HE,
- motor type UEMC40A_,
- pneumatic type NP9,
- insulating rod.

Disconnectors equipped with manual, motor or pneumatic operating mechanisms can be operate in vertical or horizontal positions, only when started with an insulating rod in the vertical position.

The disconnector construction allows adding of earthing switches. Earthing switches can be mounted on the pivot side (lower earthing switches) or on the opening side (upper earthing switches).

At the base of the disconnector, there is an earth terminal

with M12x40 screw. Between the disconnector shaft and the earthing switch shaft, there is a mechanical interlocking ensuring the proper order of switching.

6. EQUIPMENT

OWIII type disconnectors are equipped with a lever mounted on the shaft used for coupling with the operating mechanism type NRWO4/... -3 and the lever arm being an extension of the operating mechanism lever, used for operating the disconnector with the insulating rod. If HE and UEMC40_ operating mechanisms are used instead of the lever, a bevel gear is applied, allowing connection with the operating mechanism through a connection rod.

Disconnectors can be equipped with an auxiliary switch coupled with the apparatus on the shaft end, opposite to the operating mechanism. The complete auxiliary switch (with coupling parts) is marked as OW3 4 E01 with the execution number, depending on the type of auxiliary contact: PS-3, PS-O or other. The standard number of switch contacts is 12 (6NO + 6NC).

7. TECHNICAL DATA

Technical data of disconnectorshas are tabulated in table 1 on page 3.

8. STANDARDS

Disconnectors meet the requirements of standards: PN-EN 60694:2004, IEC 60694:2002 and PN-EN 62271-102:2005, IEC 62271-102:2001.

9. SPARE PARTS

The apparatus for the exploitation period, i.e. 1000 operations, does not require spare parts. At the request of the user, parts damaged as a result of random events can be supplied. Ordered parts can be mounted exclusively with knowledge and consent of ABB.

10. ORDERS

In the order the following should be given: name and type of disconnector, nominal insulation voltage, nominal current and apparatus symbol. Disconnector operating mechanisms should be ordered separately with the exception of NP9 type operating mechanism, which is mounted by the producer.

11. EXAMPLE OF ORDER

1. An example of the order for the disconnector type OWIII for 24 kV, 630 A with resin insulators, equipped with a lower earthing switch:

“Indoor three-pole disconnector 24 kV 630 A type OWIII 20/6UD-2”.

2. An example of the order for the disconnector type OWIII for 24 kV, 630 A with porcelain insulators, equipped with upper earthing switch, with a NP9 pneumatic operating mechanism mounted on the left side.

“Indoor three-pole disconnector 20 kV 630 A type OWIII 20/6UG-1 + NP9 on the left side”

12. DIMENSIONAL DRAWINGS

- OW3/10.01,
- OW3/11.01,
- OW3/12.01,
- OW3/13.01,
- OW3/14.01.

Table 1. Technical data

Disconnecter for 7.2 and 12 kV

Type		OWIII7.2/6-1 OWIII7.2/6UD-1 OWIII7.2/6UG-1	OWIII10/6-1 OWIII10/6UD-1 OWIII10/6UG-1	OWIII10/6-2 OWIII10/6UD-2 OWIII10/6UG-2	OWIII10/6-2/125 OWIII10/6UD-2/125 OWIII10/6UG-2/125	OWIII10/8-1 OWIII10/8UD-1 OWIII10/8UG-1	OWIII10/10-1 OWIII10/10UD-1 OWIII10/10UG-1	OWIII10/8-2 OWIII10/8UD-2 OWIII10/8UG-2	OWIII10/10-2 OWIII10/10UD-2 OWIII10/10UG-2	OWIII10/12-1 OWIII10/12UD-1 OWIII10/12UG-1
Rated voltage		7.2	12							
Rated frequency		50 Hz								
Power frequency withstand voltage [kV]	phase-to-earth and between phases	20	28							
	across the open switch distance	23	32							
Lightning impulse withstand voltage (1.2/50µs) [kV]	phase-to-earth and between phases	60	75							
	across the open switch distance	70	85							
Rated continuous current [A]		630	630			800	1000	800	1000	1250
Rated peak withstand current [kA]		40	80	63	40	80	80	63	63	80
Rated short-time withstand current [kA]	1 s	16	31.5	25	16	31.5	31.5	25	25	31.5
Weight of disconnector/ weight of disconnector with earthing switch [kg]		24/32	31/39	25/35	23/31	31/39	31/39	25/35	25/35	50/59
Maximum distance of first support at rated peak current [mm]		400	600		400	600				

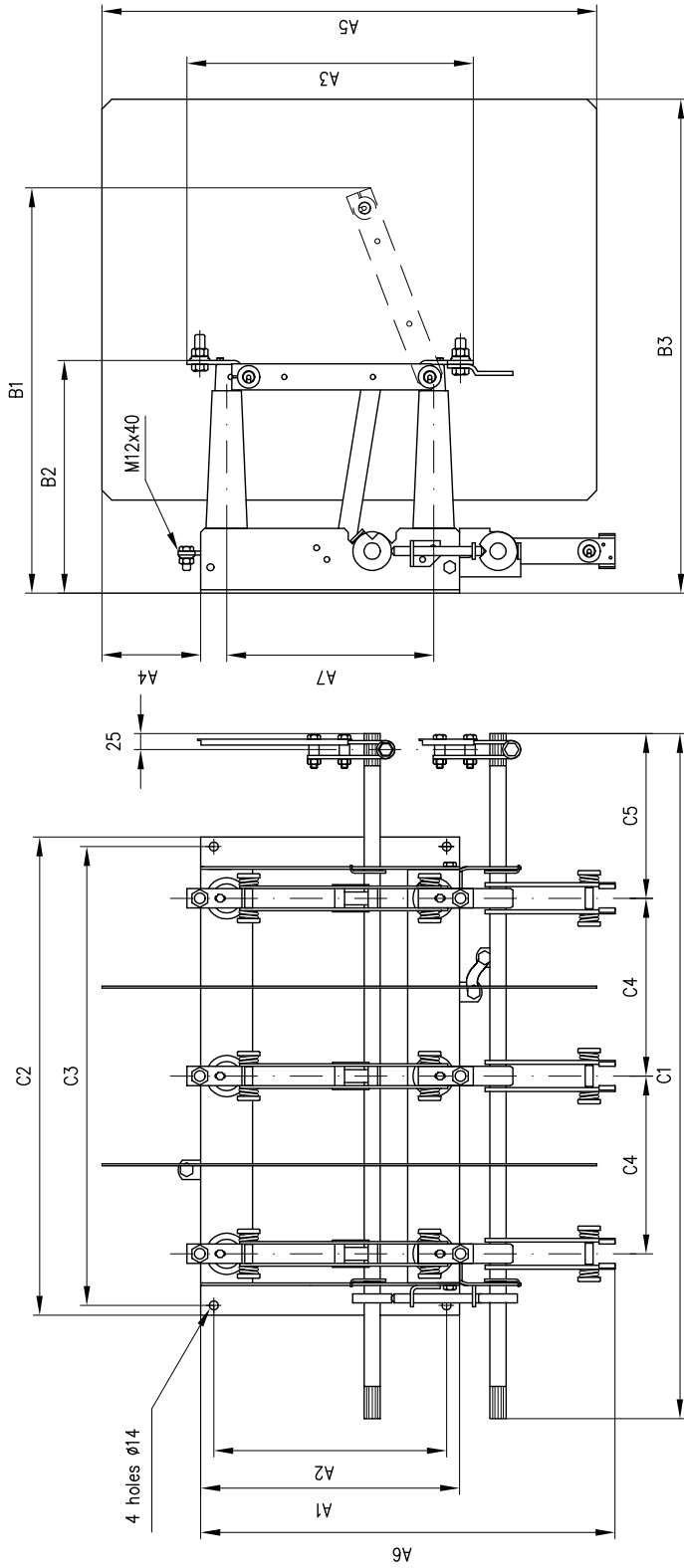
Disconnectors for 17.5 and 24 kV

Type		OWIII17.5/6-1 OWIII17.5/6UD-1 OWIII17.5/6UG-1	OWIII17.5/12-1 OWIII17.5/12UD-1 OWIII17.5/12UG-1	OWIII20/6-1 OWIII20/6UD-1 OWIII20/6UG-1	OWIII20/6-2 OWIII20/6UD-2 OWIII20/6UG-2	OWIII20/6-2/160 OWIII20/6UD-2/160 OWIII20/6UG-2/160	OWIII20/8-1 OWIII20/8UD-1 OWIII20/8UG-1	OWIII20/10-1 OWIII20/10UD-1 OWIII20/10UG-1	OWIII20/8-2 OWIII20/8UD-2 OWIII20/8UG-2	OWIII20/10-2 OWIII20/10UD-2 OWIII20/10UG-2	OWIII20/12-1 OWIII20/12UD-1 OWIII20/12UG-1
Rated voltage		17.5		24							
Rated frequency		50 Hz									
Power frequency withstand voltage [kV]	phase-to-earth and between phases	38		50							
	across the open switch distance	45		60							
Lightning impulse withstand voltage (1.2/50µs) [kV]	phase-to-earth and between phases	95		125							
	across the open switch distance	110		145							
Rated continuous current [A]		630	1250	630			800	1000	800	1000	1250
Rated peak withstand current [kA]		40	40	50	63	40	50	50	63	63	80
Rated short-time withstand current [kA]	1 s	16	16	-	25	16	-	-	25	25	31.5
	3 s	-	-	20	-	-	20	20	-	-	-
Weight of disconnector/ weight of disconnector with earthing switch [kg]		46/56	68/78	48/58	39/49	38/47	48/58	48/58	39/49	39/49	70/81
Maximum distance of first support at rated peak current [mm]		400		700		500	700				

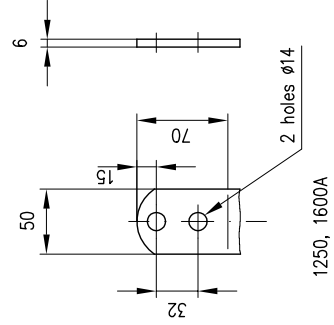
Disconnectors for 36 kV

Type		OWIII30/6-2 OWIII30/6UD-2 OWIII30/6UG-2	OWIII30/12-2 OWIII30/12UD-2 OWIII30/12UG-2	OWIII30/16-2 OWIII30/16UD-2 OWIII30/16UG-2
Rated voltage		36		
Rated frequency		50 Hz		
Power frequency withstand voltage [kV]	phase-to-earth and between phases	70		
	across the open switch distance	80		
Lightning impulse withstand voltage (1.2/50µs) [kV]	phase-to-earth and between phases	170		
	across the open switch distance	195		
Rated continuous current [A]		630	1250	1600
Rated peak withstand current [kA]		50	80	80
Rated short-time withstand current [kA]	1 s	-	31.5	31.5
	3 s	20	-	-
Weight of disconnector/ weight of disconnector with earthing switch [kg]		78/90	90/104	90/104
Maximum distance of first support at rated peak current [mm]		1000		

OW3/11.01 - Three-pole indoor disconnecter, type OWIII with lower earthing switch

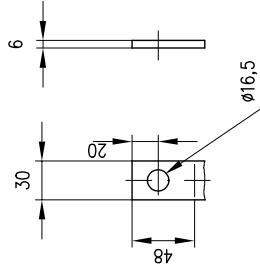


Earthing clamp:
material: steel
coating: tin



1250, 1600A

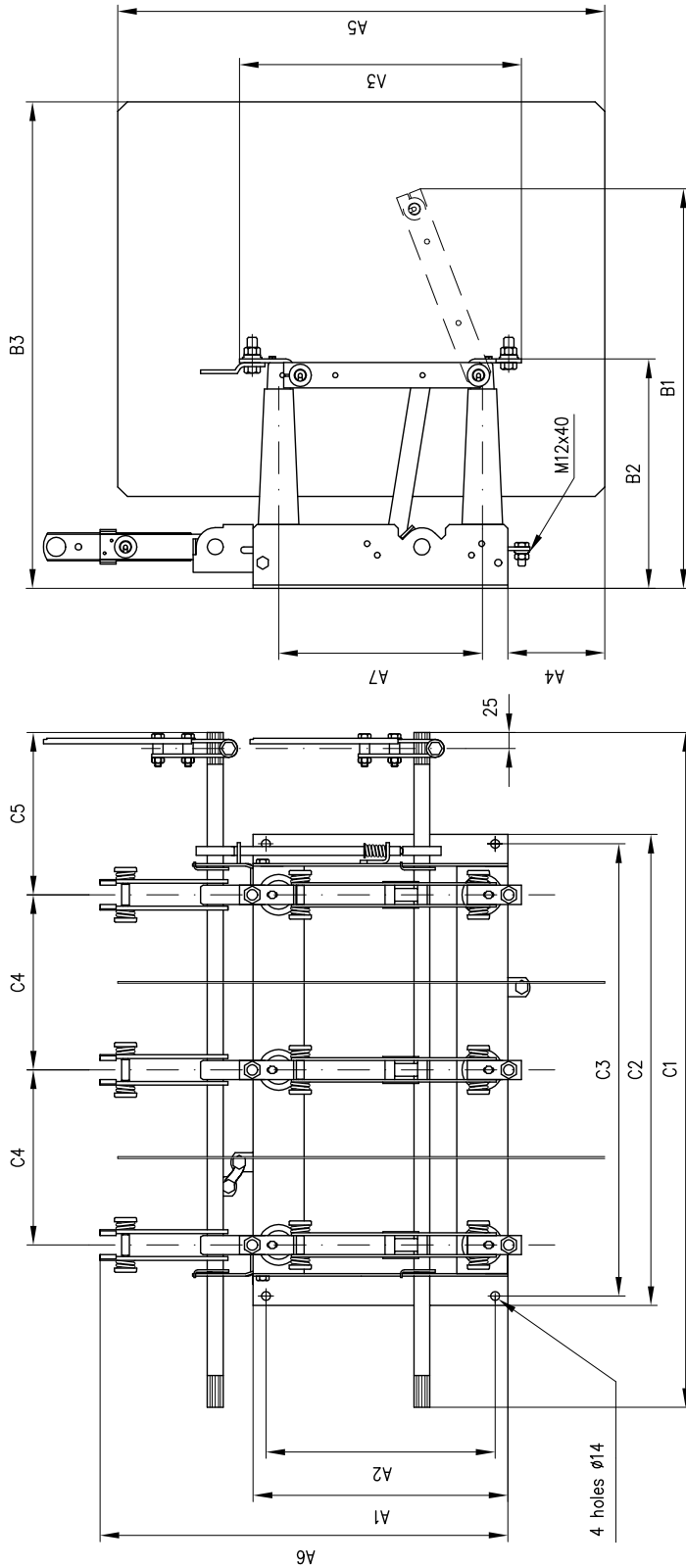
Terminals:
material: copper
coating: silver



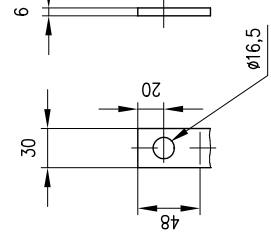
630, 800, 1000 A

TYPE	DIMENSION															
	A1	A2	A3	A4	A5	A6	A7	B1	B2	B3	C1	C2	C3	C4	C5	
OWIII 7,2/6UD-1	300	260	354	-	-	541	220	455	248	-	700	510	480	160	190	
OWIII 10/6,8,10UD-1	300	260	354	-	-	541	220	455	248	-	780	590	560	200	190	
OWIII 10/6,8,10UD-2	300	260	355	-	-	541	220	455	263	-	780	590	560	200	190	
OWIII 10/6UD-2/125	300	260	355	93	485	541	220	455	263	494	630	440	410	125	190	
OWIII 10/12UD-1	335	295	463	-	-	541	255	472	250	-	780	590	560	200	190	
OWIII 17,5/6UD-1	400	360	454	-	-	736	320	654	353	-	930	610	580	210	255	
OWIII 17,5/12UD-1	435	395	563	-	-	736	355	677	355	-	990	670	640	240	255	
OWIII 20/6,8,10UD-1	400	360	454	-	-	736	320	654	353	-	1060	740	710	275	255	
OWIII 20/6,8,10UD-2	400	360	455	-	-	736	320	654	360	-	1060	740	710	275	255	
OWIII 20/6UD-2/160	400	360	455	153	705	736	320	654	360	764	830	510	480	160	255	
OWIII 20/12UD-1	435	395	563	-	-	771	355	677	355	-	1060	740	710	275	255	
OWIII 30/6UD-2	550	510	594	-	-	967	460	875	456	-	1460	950	920	360	370	
OWIII 30/12UD-2	565	525	716	-	-	982	460	925	460	-	1460	1020	990	390	370	
OWIII 30/16UD-2	565	525	716	-	-	982	460	925	460	-	1460	1020	990	390	370	

OW3/12.01 - Three-pole indoor disconnecter, type OWIII with upper earthing switch

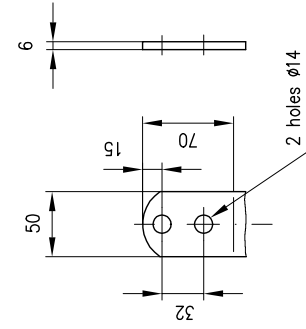


Terminals:
material: copper
coating: silver



630, 800, 1000 A

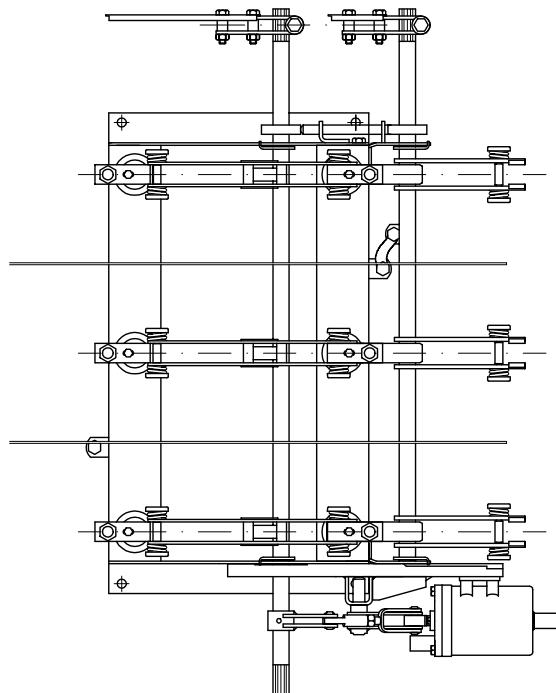
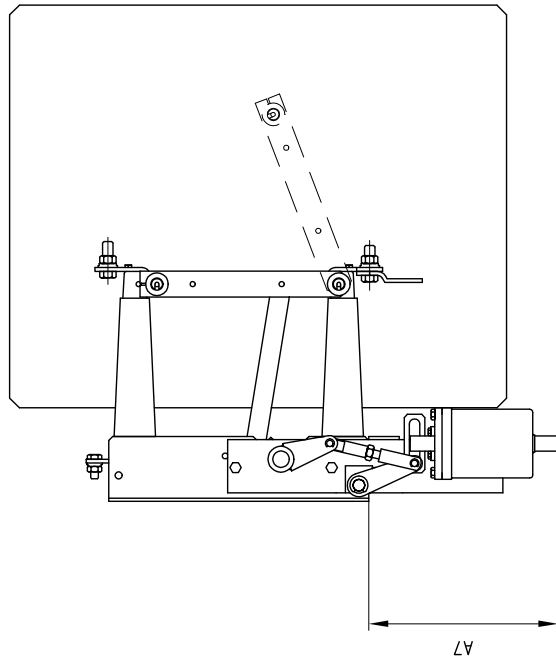
Earthing clamp:
material: steel
coating: tin



1250, 1600A

TYPE	DIMENSION														
	A1	A2	A3	A4	A5	A6	A7	B1	B2	B3	C1	C2	C3	C4	C5
OWIII 7,2/6UG-1	300	260	354	-	-	541	220	455	248	-	700	510	480	160	190
OWIII 10/6,8,10UG-1	300	260	354	-	-	541	220	455	248	-	780	590	560	200	190
OWIII 10/6,8,10UG-2	300	260	355	-	-	541	220	455	263	-	780	590	560	200	190
OWIII 10/12UG-1	335	295	463	-	-	541	255	472	250	-	780	590	560	200	190
OWIII 17,5/6UG-1	400	360	454	-	-	736	320	654	353	-	930	610	580	210	255
OWIII 17,5/12UG-1	435	395	563	-	-	736	355	677	355	-	990	670	640	240	255
OWIII 20/6,8,10UG-1	400	360	454	-	-	736	320	654	353	-	1060	740	710	275	255
OWIII 20/6,8,10UG-2	400	360	455	-	-	736	320	654	360	-	1060	740	710	275	255
OWIII 20/6UG-2/160	400	360	455	519	705	736	320	654	360	764	830	510	480	160	255
OWIII 20/12UG-1	435	395	563	-	-	771	355	677	355	-	1060	740	710	275	255
OWIII 30/6UG-2	550	510	594	-	-	967	460	875	456	-	1460	950	920	360	370
OWIII 30/12UG-2	565	525	716	-	-	982	460	925	460	-	1460	1020	990	390	370
OWIII 30/16UG-2	565	525	716	-	-	982	460	925	460	-	1460	1020	990	390	370

OW3/13.01. Three-pole indoor disconnecter, type OWIII with NP9 operating mechanism



TYPE	DIMENSION	
	A7	
OWIII 10/6-1	OWIII 10/6UD-1	OWIII 10/6UG-1
OWIII 10/6-2	OWIII 10/6UD-2	OWIII 10/6UG-2
OWIII 10/6-2/125		
OWIII 10/16-1	OWIII 10/16UD-1	OWIII 10/16UG-1
OWIII 20/6-1	OWIII 20/6UD-1	OWIII 20/6UG-1
OWIII 20/6-2	OWIII 20/6UD-2	OWIII 20/6UG-2
OWIII 20/6-2/160	OWIII 20/6UD-2/160	OWIII 20/6UG-2/160
OWIII 20/12-1	OWIII 20/12UD-1	OWIII 20/12UG-1
OWIII 30/6-2	OWIII 30/6UD-2	OWIII 30/6UG-2
OWIII 30/12-2	OWIII 30/12UD-2	OWIII 30/12UG-2
OWIII 30/16-2	OWIII 30/16UD-2	OWIII 30/16UG-2

OW3/14.01. Three-pole indoor disconnecter, type OWIII with auxiliary switch

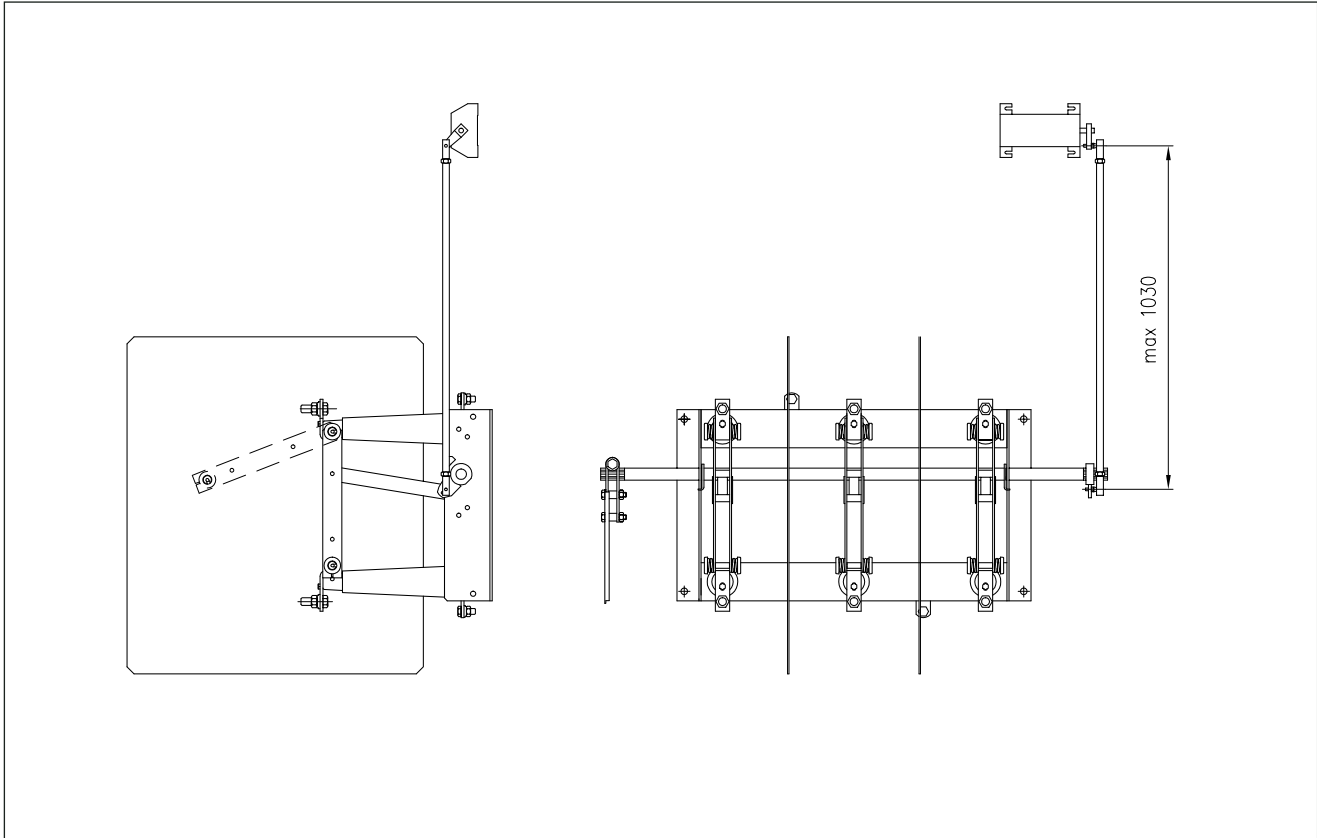


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