

OIP-CONDENSER HIGH VOLTAGE BUSHING



NANJING ELECTRIC HV BUSHING CO., LTD.
(NANJING ELECTRIC (GROUP) CO., LTD.)



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COMPANY INTRODUCTION

Nanjing Electric HV Bushing Co., Ltd. is a wholly-owned subsidiary of Nanjing Electric (Group) Co., Ltd., it was established in 1936 and it's the first high voltage porcelain factory in China history. The first 110kV transformer bushing was developed in 1958, affiliated factory and HV bushing business division were set up successively. In Aug. 2012, it was officially registered as 'Nanjing Electric HV Bushing Co., Ltd.', and it committed to be international leading brand owned and creative HV busing solution supplier.

The company-owned "LD" brand was resisted in 1937 and now it's the famous registered brand in Jiangsu Province. It covers the area of 330 thousand square meters and floor area of 140 thousand square meters, with registered capital over 300 million RMB and 1007 employees. The company owns national-level laboratory (Nanjing Electric Testing Center) and Jiangsu High Voltage Insulator Engineering Technology Research Center, specializing in the production of electrical products for power transmission and transformation projects. The market share of the company's main products is in a leading position in the domestic insulator and arrester industry. Since the company's first domestic production of condenser bushing in 1958, the company has accumulated more than 60 years of manufacturing experience and has formed a solid foundation for our company's production of condenser bushings. At present, more than 200,000 high voltage bushings of various types have been produced for the power transmission and transformation industry, accounting for about 50% of total number of the current online operations in China.

In recent years, with the advancement of science and technology, the power system has put forward requirements for miniaturization, oil-free, maintenance-free and high reliability of high-voltage electrical products. In order to meet the needs of product upgrade in the new period, we actively explored new materials and new processes for bushing products on the basis of existed bushings production technology. In 2001, we successfully developed the world's first RIF dry type condenser core. With this technology, RIF dry type bushing series were developed, recognized and widely used by more and more customers.

The company has strong technical force, advanced production equipment, complete testing methods, fast information exchange and perfect service system. Our mission is to make electrical energy transmission more secure, stable, reliable and efficient. With the corporate spirit of entrepreneurship, integration, innovation, and excellence, we are committed to becoming a happy home for employees to break through themselves and create value, and become a favorite company of customers, suppliers and all sectors of society. Illustrate illustrious virtue and improve living condition, pursue self-improvement and perfectionism.





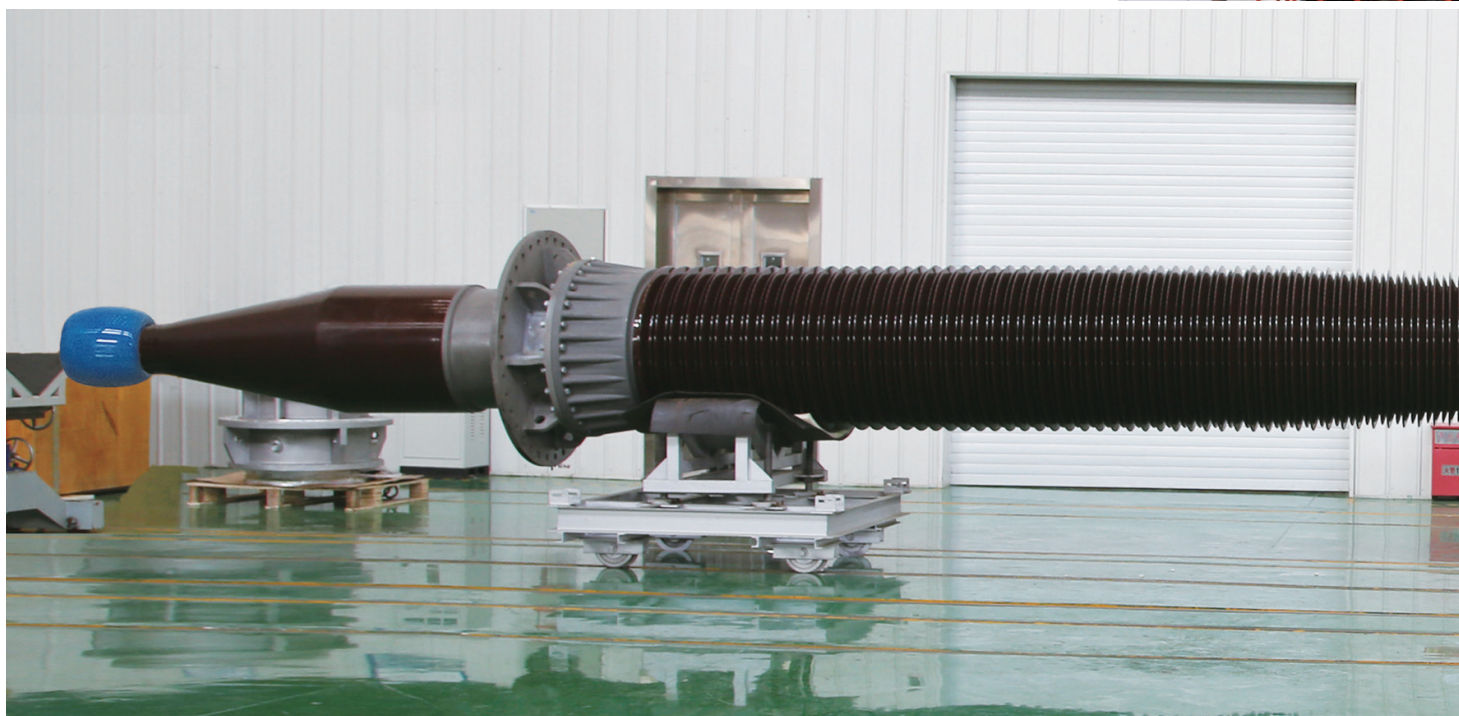
LABORATORY OVERVIEW

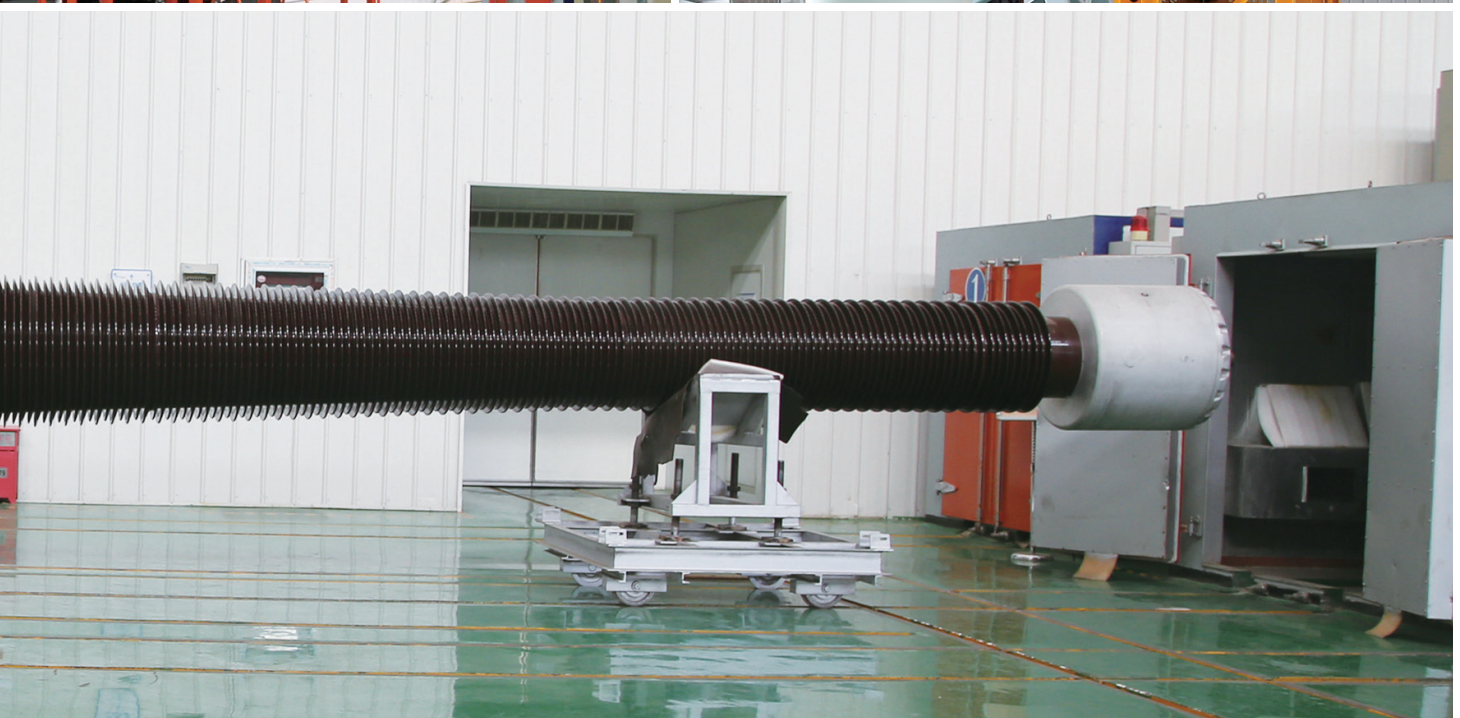
Nanjing Electric Testing Center has 5 professional testing laboratories that can perform all type tests of high voltage bushing and insulator. It is a national-level testing center certified by the National Accreditation Commission, especially the UHV laboratory, which can conduct all electrical performance tests of AC 1000kV and DC ± 1100 kV UHV products. It is the first in the industry in terms of testing capability.

In addition to undertaking the product inspection tasks of the enterprises in Nanjing Electric Science and Technology Industrial Park, Nanjing Electric Testing Center also cooperates with well-known laboratories in the industry and international laboratories to carry out product inspection and test research, and provides socialized testing services for some domestic enterprises.

OIP BUSHING PRODUCTION LINE INTRODUCTION

With the production capacity of megavolt, the OIP bushing production line is equipped with a complete set of advanced production equipment including core winding machines (whole rolls and strip rolls), automatic vacuum oil impregnated system and automatic spare parts cleaning system. Among them, the condenser core winding workshop and assembly workshop are all sealed workshops with high purity, constant temperature and humidity, especially the winding workshop is designed and built with reference to the national standard GB50472-2008 "Design Specification for Clean Factory of Electronic Industry". The production line has a total annual production capacity of 8000 products of various voltage levels, which can continuously and reliably provide high quality bushing products for power users.







OIP BUSHING DEVELOPMENT HISTORY

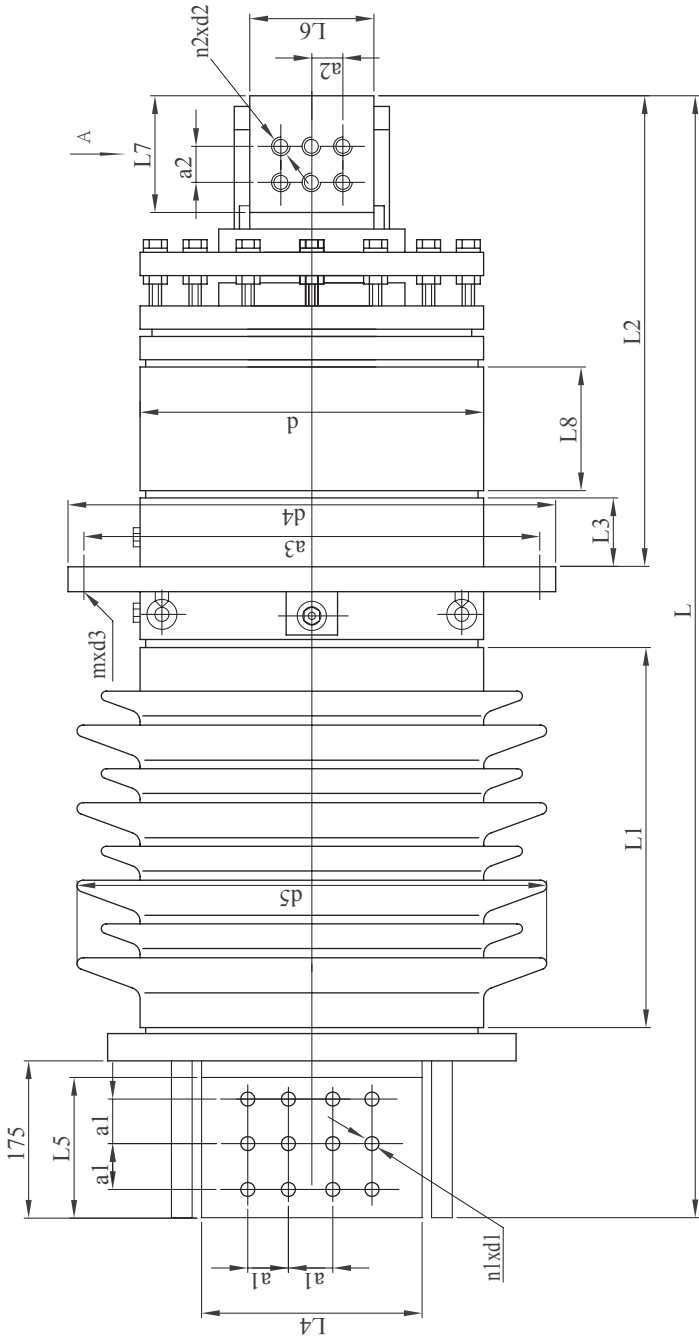
1958	China's first OIP Condenser Bushing
1978	China's first 500kV Condenser Bushing
2001	China's first 690kV AC,DC Wall Bushing
2004	China's first 800kV UHV Transformer Bushing
2006	China's first 800kV UHV Wall Bushing
2007	China's first 1100kV UHV Transformer Bushing
2008	China's first 1100kV UHV AC,DC Wall Bushing
2013	China's first 1100kV Oil-SF6 Bushing
2015	Transferred to new plant, the production capacity of OIP condenser bushing ranks the first in China
2017	First domestically produced Megavolt AC transformer bushing was put into operation in UHV project



KEY PERFORMANCE

Railway Traction Transformer Project:	More than 2,000pcs of bushings were put into operation in over 60 railway projects including Harbin-Dalian line, Beijing-Shanghai line, Shanghai-Kunming line, Luoyang-Zhangjiajie line, Zhengzhou-Xi'an line, Guiyang-Guangzhou line, Wuhan-Shiyan railway and Mongolia-China railway etc.
DC Project:	More than 200pcs of 550kV DC grid side bushings were put into operation in DC projects like Gehu, Xiluodu, Nuozhadu, Guanyinyan and Xizhe etc.
UHV Project:	Nearly 200pcs of 800kV high voltage bushings were put into operation in 750kv UHV projects including Datang, Wucaiwan of Xinjiang, Beiyi Tianchi Energy and SPIC etc.
Export Project:	More than 5,000pcs of bushings were put into operation in over 20 countries including Russia, India, Zimbabwe, France, Congo, Mexico, Chile, Pakistan, Uganda and Bangladesh etc.
DC wall bushing:	1000kV DC wall bushings were used in the laboratories of State Grid Wuhan High Voltage Research Institute, China Southern Power Grid Corporation Power Grid Technology Research Center and China Electric Power Research Institute.
High altitude project:	More than 200pcs of high-voltage and low-voltage bushings were put into operation in Tibet, including Liuwu, Tibet Ali Power Supply Company Ali-Tibet Central Networking at Jilong-central Tibet Station etc.

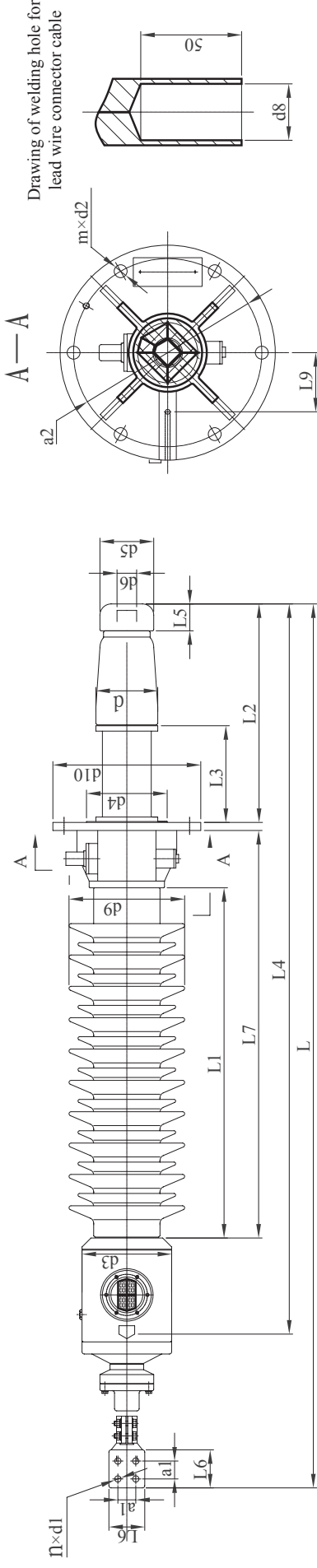
40.5kV/10000A ~ 40000A Heavy-Current OIP Condenser Transformer Bushing



Type	Product.no	Rated voltage	Rated current	Total length of bushing	Upper wiring board				Upper porcelain sleeve				Flange				Total length of oil impregnated part	Maximum diameter in oil	Length of lower porcelain sleeve	Lower terminal board				Weight		
					Number of wiring board	Each wiring board			Effective insulation distance	Nominal creepage distance	type of shed	Maximum diameter of shed	Outer diameter of flange plate	Center distance of installation hole	Hole number	Hole diameter				Oil earthed length	Panel surface	Hole number	Hole distance		Hole diameter	
		L4×L5	n1	a1		d1	L1	S									d5	d4	a3					m		d3
BRW-40.5/16000	353017Z1	40.5	16000	1133	4	238×150	12	40	14	450	1256	大小伞	480	480	8	20	30	418	355	155	2	130×120	6	40	M12	250
BRW-40.5/20000	353016D	40.5	20000	1245	8	180×140	9	40	14	450	1418	大小伞	490	520	8	20	30	435	360	150	2	140×140	6	40	M12	275
BRW-40.5/25000	353407	40.5	25000	1100	4	300×130	18	40	14	450	1510	大小伞	640	680	16	24	30	400	490	155	2	350×100	12	50/70	M12	500

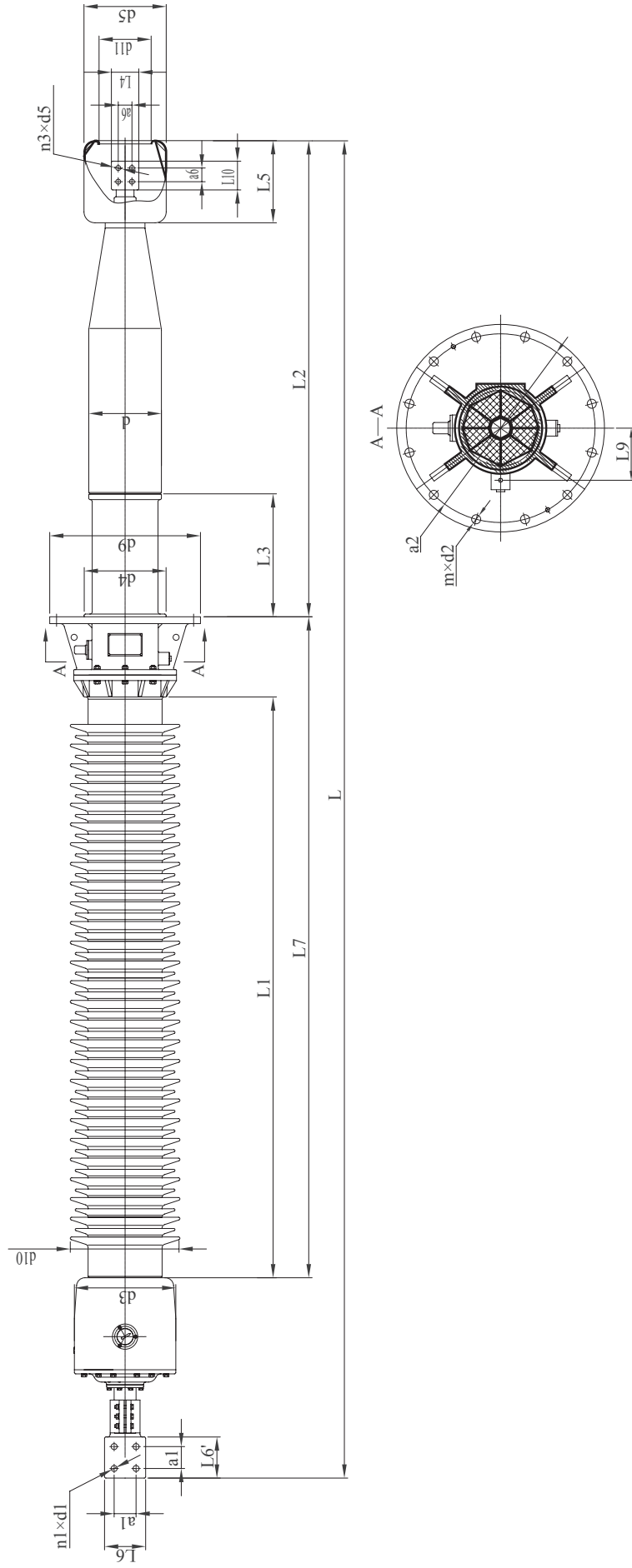
72.5kV ~ 170kV Draw Type OIP Condenser Transformer Bushing

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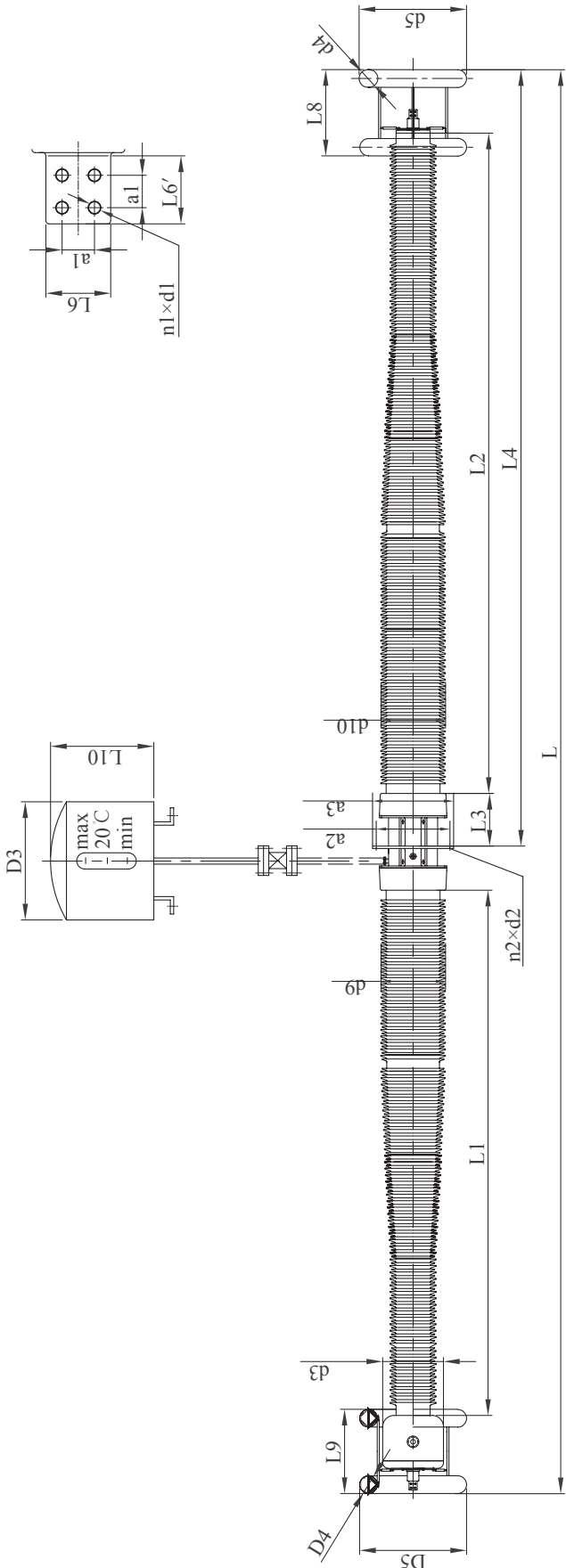


Type	Product. no	Rated voltage kV	Rated current A	Main dimension mm																							Weight kg					
				Total length of bushing L	Wiring terminal				Cable lead length L4	Diameter of oil Conservator d3	Distance from oil conservator to middle flange L7	Lead wire connection aperture	Lead wire connection aperture	Upper porcelain sleeve			Flange						Total length of oil integrated part L2	Maximum diameter in oil d	Length of lower porcelain sleeve	Equalizing bal		Inner diameter of contact tube d6				
Hole distance a1	Hole number n1	Hole diameter d1	Panel thickness L6×L6		Panel surface L6×L6	Effective insulation distance L1	Nominal creepage distance S	Maximum diameter of shed d9						Outer diameter of flange plate d10	Center distance of hole a2	Hole number m	Hole diameter d2	Center distance of vent hole L9	Inner diameter of sealing surface d4	Oil earthed length L3	Flange thickness											
BRDLW-72.5/630-4	354411	72.5	630	1885	40	4	14	10	80×80	1505	200	980	M33×1.5	28	850	2248	258	330	280	6	18	82	180	40	18	310	138	210	60	120	35	85
BRDLW-72.5/630-4	35442D	72.5	630	2215	40	4	14	10	80×80	1865	200	980	M33×1.5	28	850	2248	258	330	280	6	18	82	180	400	18	670	138	210	60	120	35	100
BRDLW-72.5/630-4	354444	72.5	630	2535	40	4	14	10	80×80	2255	200	980	M33×1.5	28	850	2248	248	330	280	6	18	82	180	550	18	960	138	320	100	120	35	120
BRDLW-72.5/1250-4	3544222	72.5	1250	1940	50	4	18	16	100×100	1560	220	980	M48×2	46	850	2248	248	400	350	6	24	110	240	40	18	350	170	210	100	140	55	110
BRDLW-72.5/1250-4	354422	72.5	1250	2300	50	4	18	16	100×100	1920	220	980	M48×2	46	850	2248	285	400	350	6	24	110	240	400	18	710	170	210	100	140	55	125
BRDLW-72.5/1600-4	354409	72.5	1600	2450	60	4	18	20	125×125	2030	220	980	M48×2	46	850	2248	285	400	350	6	24	110	240	400	18	820	170	320	100	140	55	130
BRDLW-126/630-4	355085D	126	630	2498	40	4	14	10	80×80	2170	200	1480	M33×1.5	28	1290	3906	300	400	350	6	24	110	240	40	18	450	170	350	60	120	35	155
BRDLW-126/630-4	355077D	126	630	2835	40	4	14	10	80×80	2530	250	1480	M33×1.5	28	1290	3906	300	400	350	6	24	110	240	400	18	810	170	350	60	120	35	108
BRDLW-126/630-4	355414	126	630	2985	40	4	14	10	80×80	2680	250	1480	M33×1.5	28	1290	3906	300	400	350	6	24	110	240	550	18	960	170	350	60	120	35	185
BRDLW-126/1250-4	355434	126	1250	2610	50	4	18	16	100×100	2230	250	1480	M48×2	46	1290	3906	320	400	350	6	24	110	240	70	18	515	200	350	95	155	55	200
BRDLW-126/1250-4	355068D	126	1250	2940	50	4	18	16	100×100	2560	250	1480	M48×2	46	1290	3906	320	400	350	6	24	110	240	400	18	845	200	350	95	155	55	215
BRDLW-126/1250-4	355070D	126	1250	3090	50	4	18	16	100×100	2710	250	1480	M48×2	46	1290	3906	320	400	350	6	24	110	240	550	18	995	200	350	95	155	55	245
BRDLW-126/1600-4	35506823	126	1600	2990	60	4	18	20	125×125	2560	250	1480	M48×2	46	1290	3906	320	400	350	6	24	110	240	400	18	845	200	350	95	155	55	240
BRDLW-145/630-4	355429	145	630	3120	40	4	14	10	80×80	2800	250	1580	M33×1.5	28	1390	4700	320	400	350	6	24	110	240	400	18	1000	170	500	105	120	35	170
BRDLW-145/1250-4	355451Z1	145	1250	3280	50	4	18	16	100×100	2900	250	1680	M48×2	46	1490	5270	360	400	350	6	24	110	240	400	18	995	230	500	95	155	55	340
BRDLW-145/1600-4	355451	145	1600	3300	60	4	18	16	125×125	2900	250	1680	M48×2	46	1490	5270	360	400	350	6	24	110	240	400	18	995	230	500	95	155	55	340
BRDLW-170/630-4	355457	170	630	3435	50	4	18	16	100×100	3050	250	1680	M48×2	46	1490	5270	360	400	350	6	24	110	240	550	18	1145	230	500	95	155	55	340
BRDLW-170/1250-4	355409	170	1250	3435	50	4	18	16	100×100	3050	250	1680	M48×2	46	1490	5270	360	400	350	6	24	110	240	550	18	1145	230	500	95	155	55	340

252kV ~ 550kV Current Carrying Type OIP Condenser Transformer Bushing

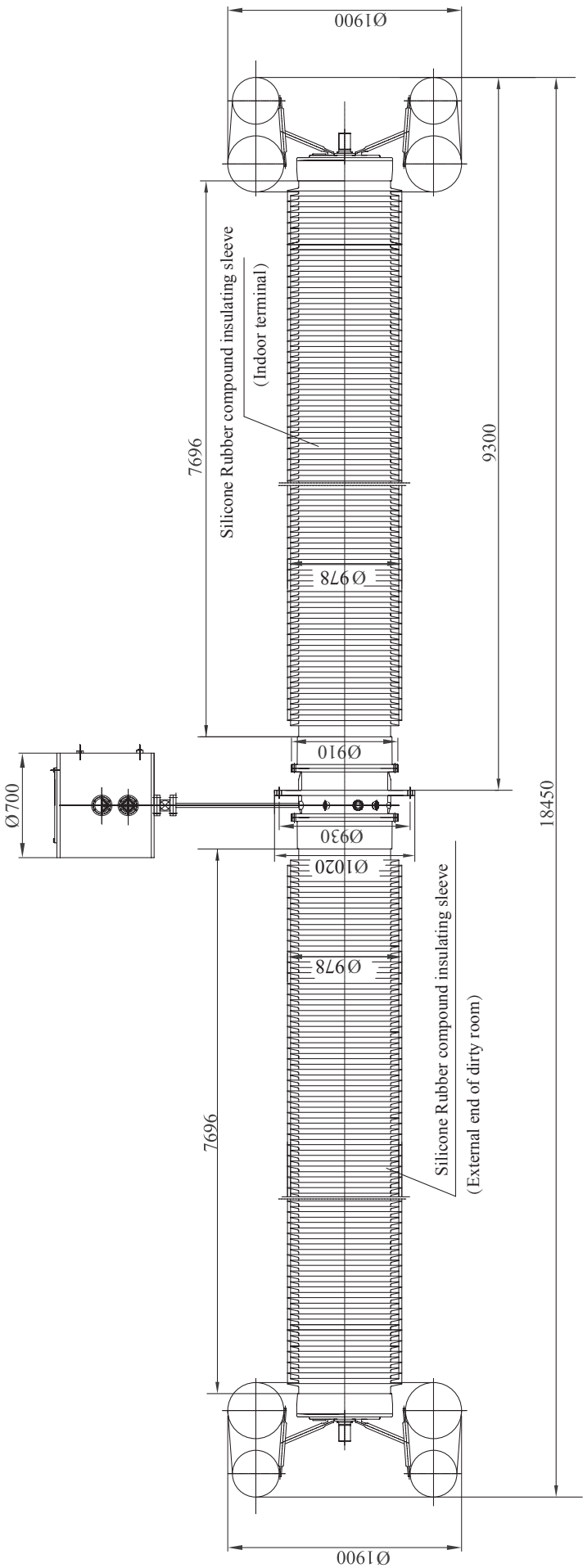


800kV ~ 1000kV OIP Condenser Wall Bushing



Type	Product.no	Rated voltage kV	Rated current A	Main dimension mm																				Weight kg								
				Outdoor pressure equalizer				Two Terminal Terminal				Expander		Diameter of oil Conservator d3		Outdoor porcelain cover			Flange				Indoor porcelain cover				Total length of indoor end L4		Indoor equalizer			
				Maximum outside diameter D5	Pipe diameter D4	Height L9	Hole distance a1	Hole number n1	Hole diameter d1	Panel thickness	Panel surface L6×L6'	Outside diameter D3	Height L10	Effective insulation distance L1	Nominal creepage distance S	最大 爬径 d9	Outer diameter of flange plate a3	Center distance of installation hole a2	Hole number n2	Hole diameter d2	Oil earthed length L3	Effective insulation distance L2	Nominal creepage distance S		Maximum diameter of shed d10	Maximum outside diameter d5	Pipe diameter d4	Height L8				
CRW-800/250-3	379001D	800	250	1320	220	1040	50	4	18	15	100×100	870	700	750	5835	21000	800	1020	930	16	32	650	8155	31000	800	9660	1550	350	1200	9200		
CRW-1000/250-3	379002D	1000	250	1550	350	1200	50	4	18	15	100×100	870	700	750	7035	27000	800	1020	930	16	32	650	7595	29200	800	9100	1550	350	1200	9600		
CRWZ-1000(850)/250-3	379003D	1000	250	1550	350	1200						700	650	580	7150	27000	810	1195	1118	16	39	430	8100	30000	810	9250	1600	400	1120	9450		

AC800kV/DC1000kV Composite Sleeve Oil-SF6 AC/DC Wall Bushing



Bushing Type	± 800kV DC Wall Bushing
Technical Standard	GB/T22674 GB/T4109 IEC62199 IEC62137
Rated Current	3150A
Rated DC Voltage	800kV
Maximum Operating Current (Indoor ≤ 50℃ /Outdoor ≤ 40℃	3150A
Lighting Impulse Withstand Voltage	2400kV
Switch Impulse Withstand Voltage	2000kV (Wet and Dry)
1 Hour Power Frequency Voltage Withstand and Partial Discharge	1025kV Partial Discharge ≤ 10pC
2 Hour Power Frequency Voltage Withstand and Partial Discharge	1350kV Partial Discharge ≤ 10 个
Polarity reversal withstand voltage and Partial Discharge	± 1005kV Partial Discharge ≤ 10 个
Indoor/Outdoor Minimal Creepage	≥ 32000mm
Indoor/Outdoor Bushing Bending load withstand test	5000N



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