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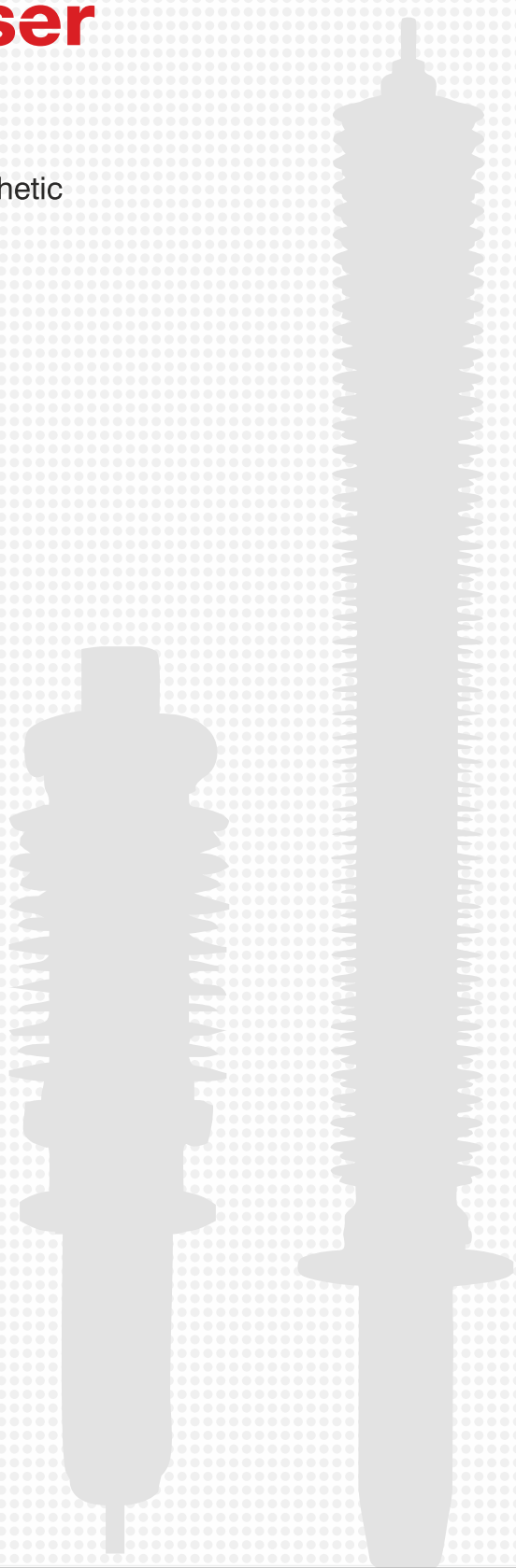
YASH HIGHVOLTAGE

RIP/RIS Condenser Bushings

Insulation : Resin Impregnated Paper / Synthetic
Application : Transformer - Outdoor
Type : Oil to Air
Insulator : Hollow Composite / Silicon
Rated Voltage : 24 kV ~ 245 kV
Rated Current : 400 A to 6300 A
Standard : IEC 60137:2017



Swiss Technology with Indian Reliability

MOSER GLASER
Current and voltage – our passion

MAKE IN INDIA

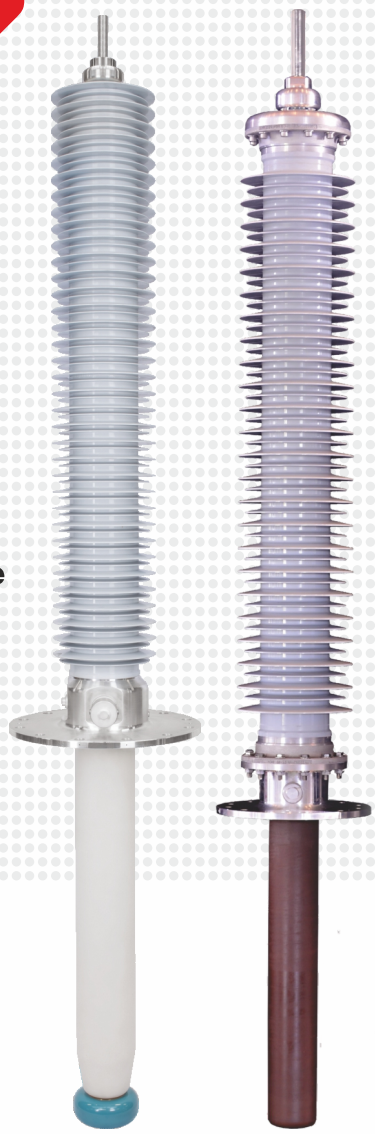
Salient Features

- Oil Free / Partial Discharge Free
- Non-flammable, self-extinguishing when exposed to open fire
- Excellent Seismic / Earthquake performance
- High thermal strength (120 °C)
- Mechanically rigid, yet lightweight and compact, 50% of weight of OIP
- Can be transported, stored and installed at any angle
- Can be energized immediately after installation
- Seals the transformer and reduces downtime in the event of major failures
- Shatter-proof, Hydrophobic silicone sheds

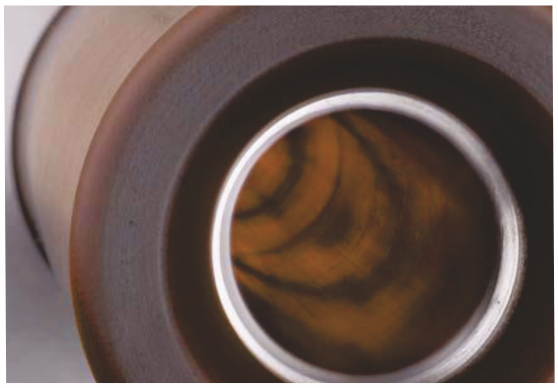
100 Years of Swiss Innovation

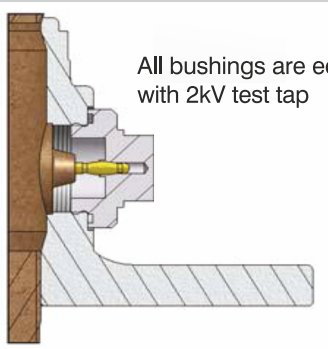
- A better connection maker, MOSER GLASER company (MGC) researched a way to increase the dielectric characteristics of the high voltage equipments. As a result MGC invented in 1958, the Resin Impregnated Paper Technology (RIP), and have since supplied thousands of RIP bushings upto 300 kV voltage class globally
- YASH HIGHVOLTAGE LTD. localised the manufacturing of RIP bushings under technology transfer from MOSER GLASER in 2016, and has executed more than 1500 RIP bushings from India for many discerning end users and OEMs
- For RIP/RIS bushings, the condenser core is built with resin impregnated paper (RIP) or resin impregnated synthetic (RIS) insulation respectively. The insulation is built directly on the conductor (rod or tube based on the current requirement) and consists of high quality crepe paper wound on the conductor in case of RIP bushings, or special grade synthetic fabric in case of RIS bushings. Conductive grading layers are embedded during the paper/synthetic wrapping to form a capacitive core for the best electromagnetic field control. This guarantees the highest operational and human safety
- Wound core is then dried under vacuum and is impregnated with special grade resin. Thus the temperature class of RIP/RIS bushings is class B (i.e. permissible temperatures of max. 120 deg C). After the condenser core is completely impregnated with resin and completely cured, the core is machined to suit the design requirements
- The test tap lead and test tap terminal are moulded with special grade resin system between the mounting flange and condenser core. The special resin forms a high strength bond between the flange and RIP/RIS condenser core. Mounting flange is made of high strength aluminium alloy. The mounting flange and condenser core joint is leak tested using very fine helium leak detector
- Hollow composite (Silicone) insulator is then assembled on the air end side with metal cap on top, along with special sealing rings, and the bushing assembly is fixed firmly. The annular space between RIP/RIS condenser core and Hollow core insulator is evacuated and completely filled with special grade insulation foam which dries after curing, and this forms a completely dry composite RIP/RIS bushing solution.
- The bushings are then completely routine tested in accordance with IEC 60137:2017

Fully type tested product range at accredited Laboratories



RIP Condenser Core (Active Part)



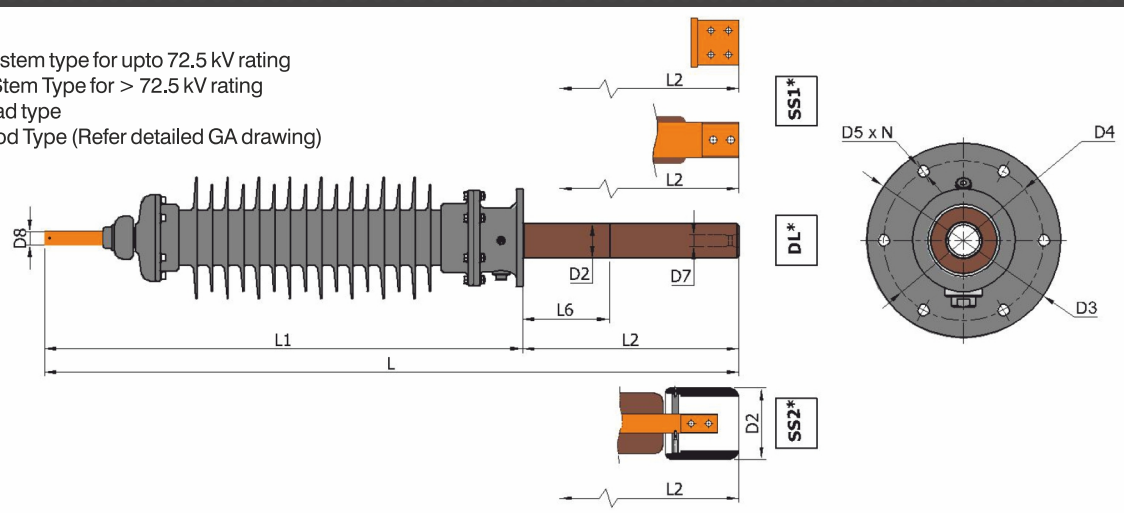


All bushings are equipped with 2kV test tap

Table 1 - Standard dimensions of RIP/RIS bushings rated 24kV - 245kV, current upto 3150A (All dimensions are in mm)

Model	Altitude of operation	HSV, kV	BIL, kVp	AC test level, kV	Rated current, Ir Amp	Connection for transformer(*)	Cantilever test load, N	L1- Air end length	L2 - Oil end length	L -Total length	L6 - BCT Space	D2 - Oil side max. diameter	D3 - Outer diameter of flange	D4 - PCD of flange	D5 X N- Mounting holes	D7- Pipe Inside diameter	D8 - Contact diameter
VRL-2480-100	≤1000 meter	24	125	55	800	DL	1250	738	205	943	100	80	225	185	15x6	35.7	M30x2
VRD-2401-100		24	125	55	1250	DR	1250	738	276	1014	100	80	225	185	15x6	35.7	M30x2
VRL-3680-100		36	170	77	800	DL	1250	850	220	1070	100	80	225	185	15x6	35.7	30
VRD-3601-100		36	170	77	1250	DR	1250	850	220	1070	100	80	225	185	15x6	35.7	30
VRS-3602-100		36	170	77	2000	SS1	2000	770	345	1115	100	80	225	185	15x6	-	40
VRS-5203-100		52	250	105	3150	SS1	3150	928	475	1403	100	141	335	290	15x12	-	60
VRS-5203-300		52	250	105	3150	SS1	3150	928	800	1728	300	141	350	300	20x 6	-	60
HCC-5206-300		52	250	105	6300	SS1	5000	955	565	1520	300	190	335	290	22x8	-	-
VRL-7380-100		72.5	325	155	800	DL	2000	1105	400	1505	100	80	225	185	15x6	35.7	30
VRL-7380-300		72.5	325	155	800	DL	2000	1105	600	1705	300	80	225	185	15x6	35.7	30
VRL-7380-600		72.5	325	155	800	DL	2000	1105	900	2005	600	80	225	185	15x6	35.7	30
VRD-7301-100		72.5	325	155	1250	DR	2000	1105	400	1505	100	80	225	185	15x6	35.7	30
VRD-7301-300		72.5	325	155	1250	DR	2000	1105	600	1705	300	80	225	185	15x6	35.7	30
VRD-7301-600		72.5	325	155	1250	DR	2000	1105	900	2005	600	80	225	185	15x6	35.7	30
VRS-7302-100		72.5	325	155	2000	SS1	3150	1070	495	1565	100	109	335	290	15x12	-	60
VRS-7302-300		72.5	325	155	2000	SS1	3150	1070	695	1765	300	109	335	290	15x12	-	60
VRS-7303-300		72.5	325	155	3150	SS1	3150	1030	695	1725	300	141	335	290	15x12	-	60
VRL-14580-300		145	650	305	800	DL	3150	1760	660	2420	300	109	335	290	15x12	35.7	30
VRD-14501-300		145	650	305	1250	DR	3150	1760	660	2420	300	109	335	290	15x12	35.7	60
VRS-14501-300		145	650	305	1250	SS2	3150	1735	800	2535	300	165	335	290	15x12	-	60
VRD-14501-500		145	650	305	1250	SS2	3150	1735	1255	2990	500	165	400	350	24x6	-	60
VRS-14501-300	≤ 1500 m	145	650	305	1250	SS2	3150	2070	800	2870	300	165	335	290	15x12	-	60
VRS-14501-300	≤ 1750 m	145	650	305	1250	SS2	3150	2070	800	2870	300	165	335	290	15x12	-	60
VRS-14501-300	≤ 2300 m	145	650	305	1250	SS2	3150	2040	945	2985	300	165	335	290	15x12	-	60
VRS-14502-300	≤ 1000 m	145	650	305	2000	SS2	3150	1660	865	2525	300	165	335	290	15x12	-	60
VRS-14502-300	≤ 1500 m	145	650	305	2000	SS2	3150	1955	915	2910	300	165	335	290	15x12	-	60
VRL-24580-100	≤ 1000 m	245	1050	505	800	DL	3150	2815	930	3745	100	190	450	400	20x12	50	30
VRL-24580-300	≤ 1000 m	245	1050	505	800	DL	3150	2815	1130	3945	300	190	450	400	20x12	50	30
VRD-24501-100	≤ 1000 m	245	1050	505	1250	DR	4000	2815	930	3745	100	190	450	400	20x12	50	60
VRD-24501-300	≤ 1000 m	245	1050	505	1250	DR	4000	2815	1130	3945	300	190	450	400	20x12	50	60

*** SS1**- Solid stem type for upto 72.5 kV rating
SS2 - Solid Stem Type for > 72.5 kV rating
DL - Draw lead type
DR - Draw Rod Type (Refer detailed GA drawing)

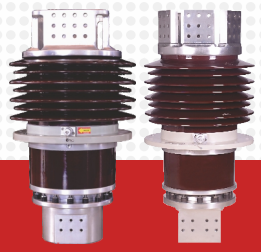


The hollow composite insulator is designed & tested according to IEC 61462.

The Composite insulator used by us have:

- Excellent performance in contaminated environment: silicone-rubber housing has a smooth, hydrophobic surface which gives excellent performance with contamination against sea salt, coastal fog, industrial pollution, agricultural dust, chemicals etc.
- Excellent tracking resistance under electrical stress.
- Silicone-rubber used has excellent erosion resistant performance in sunlight and uv radiations.
- Lighter weight and easier to handle: bushing with a composite insulator are light in weight compared to bushings with porcelain housing hence less susceptible to handling and transport damage.
- Accidental damage proof: bushings with composite insulators and silicon rubber housing, are explosion proof, and hence this guarantees the highest operational & human safety.

Product Range



HIGH CURRENT BUSHINGS

Rated Voltage
24 kV ~ 36 kV

Rated Current
4000 ~ 20000 A

Standard
IEC-60137:2017/IEEE

Types
Oil filled / Communicating /OIP Condenser

OIP CONDENSER BUSHINGS

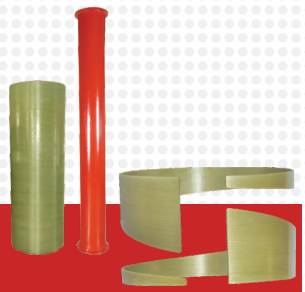
Rated Voltage
24 kV ~ 170 kV

Rated Current
Upto 4000 A

Standards
IEC-60137:2017/ ANSI/IEEE

Connection
Draw lead/Draw Rod/Stem type

Housing
Porcelain/ Composite



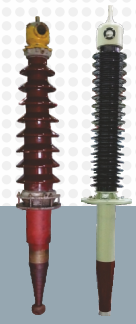
FIBER GLASS CYLINDERS & END RINGS

For power transformer winding formers

Range
~ 1800mm Diameter
~ 2800mm Height

Material
Filament wound cylinders in epoxy/polyester resin

Application
- **Power/Dry type transformers**
- **EHV test transformers**
- **Test equipment**
- **Tap changers**



RETROFIT SOLUTIONS

Interchangeable solutions with global reputed makes

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YASH HIGHVOLTAGE

Factory
84/1-B, P.O. Khakhariya, Halol-Savli Road,
Dist. Vadodara - 391510, Gujarat - 391 510 INDIA

Office
2/3, Param Park, B/h Taksh Bungalows, Vasna Road,
Alkapuri, Vadodara - 390007, Gujarat - INDIA
Email: sales@yashhv.com
Mobile: +91 90990 96577

Represented By

Tiger