



DURESCA®

DTOI RIP Bushings, 36 - 300kV

Transformer to Air IEC 60137-2008

 **MOSER GLASER**

Current and voltage – our passion

Swiss quality combined with global experience

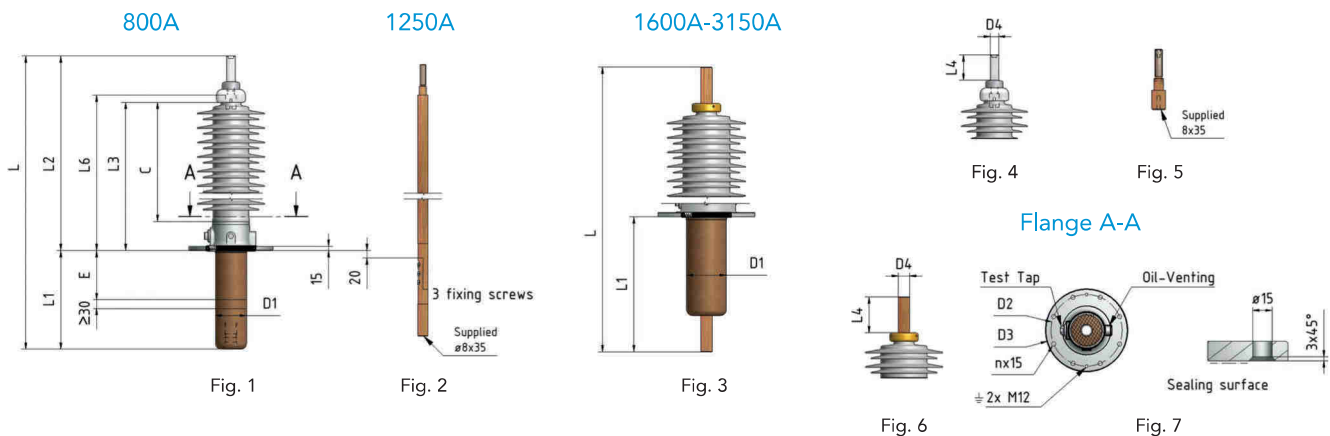


Standard ratings DTOI 36 – 123kV

Standard	IEC 60137-2008																		
Frequency	50 / 60 Hz																		
Altitude of erection	< 1000 m																		
Ambiant Temperature	Class 3: -40°C...+ 40°C																		
Angle of Mounting	0 – 90°																		
Highest Voltage	Um	kV	36			52			72.5			123							
Dry Power Frequency voltage withstand	Up	kV	77			105			155			255							
Lightning Impulse withstand voltage	U Bil	kV	170			250			325			550							
Rated Current	I _r	A	2000	2500	3150	1600	2000	2500	3150	800	1250	1600	2000	2500	800	1250	1600	850	2000
Connection to transformer*			FC*	FC*	FC*	FC*	FC*	FC*	FC*	DL*	SC*	FC*	FC*	FC*	DL*	SC*	FC*	FC*	FC*
Specific creepage distance		mm mm/kV	1116 31			1612 31			2248 31			3813 31							
Cantilever test load (min) (class II IEC 60137)		N	2000	2000	3150	1600	2000	2500	3150	2000	2000	2000	3150	3150	3150	3150	3150	4000	4000

*DL = Draw-Lead / *SC = Split-Conductor / *FC = Fix-Conductor

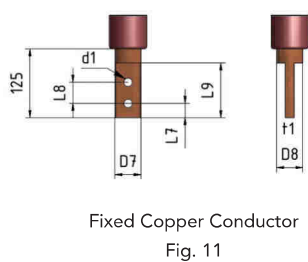
Dimensions



Bottom detail



DTOI 36 and 52kV



Um	I _r	d1	D7	D8max	L7	L8	L9	t1
36	2000	18	51*	55	20	40	85	20
	2500	18	51	60	20	40	85	20
	3150	18	74	80	20	40	85	30
52	1600	14	37	42	20	40	85	20
	2000	18	51	55	20	40	85	20
	2500	18	62	65	20	40	85	20
	3150	18	85	90	20	40	85	30

* 56.6 for E300 and E500mm

Standard ratings DTOI 145 – 300kV

Standard	IEC 60137-2008																				
Frequency	50 / 60 Hz																				
Altitude of erection	< 1000 m																				
Ambiant Temperature	Class 3: - 40°C...+ 40°C																				
Angle of Mounting	0 – 90°																				
Highest Voltage	Um	kV	145				170				245				300						
Dry Power Frequency voltage withstand	Up	kV	305				355				505				505						
Lightning Impulse withstand voltage	U Bil	kV	650				750				1050				1050						
Switching Impulse dry / wet /	U Sil	kV									850				850						
	U Sil	kV													850						
Rated Current	I _r	A	800	1250	1600	2000	2500	800	1250	1600	2000	2500	800	1250	1600	2000	800	1250	1600	2000	
Connection to transformer*			DL*	SC*	FC*	FC*	FC*	DL*	SC*	FC*	FC*	FC*	DL*	SC*	FC*	FC*	DL*	SC*	FC*	FC*	
Specific creepage distance		mm	4495				5270				7595				9300						
		mm/kV	31				31				31				31						
Cantilever test load (min) (class II IEC 60137)	N		3150	3150	3150	4000	4000	4000	4000	4000	4000	5000	5000	4000	4000	4000	5000	4000	4000	4000	5000

*DL = Draw-Lead / *SC = Split-Conductor / *FC = Fix-Conductor

Dimensions

800A

1250A

1600A-3150A

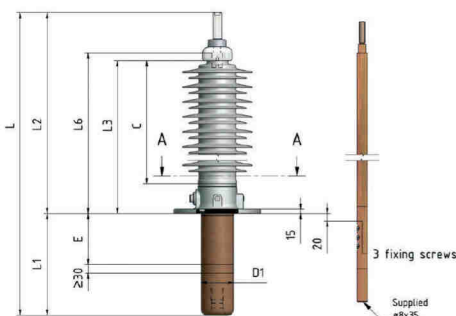


Fig. 12

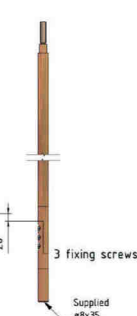


Fig. 13

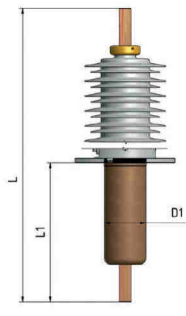


Fig. 14

Top dimensions

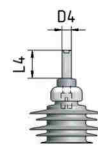


Fig. 15

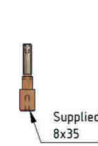


Fig. 16

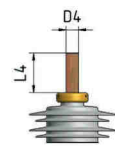


Fig. 17

Flange A-A

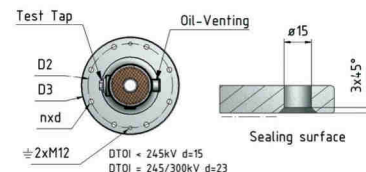


Fig. 18

Bottom detail

800A



Cable Connection DL
Fig. 19

1250A



Removable Copper Conductor SC
Fig. 20

1600A-3150A

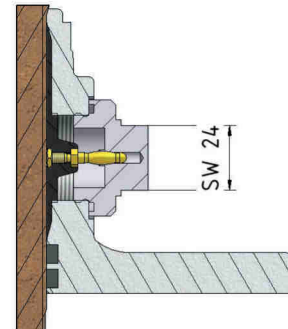


Fixed Copper Conductor FC
Fig. 21

Accessories

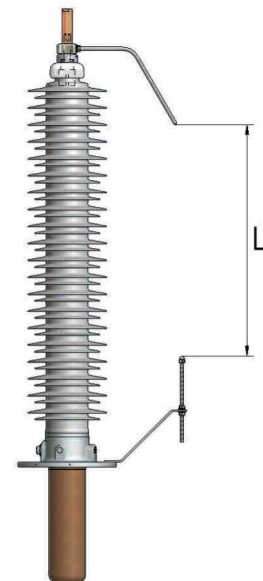
Test Tap

All Bushings are equipped with a 2kV test tap. Used to test the capacitance C , partial discharge pC and the dissipation factor $\tan \delta$.



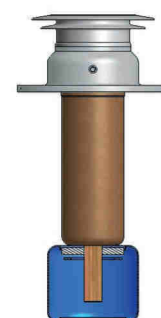
Arcing Horns made of CrNi Steel

Arcing horns are used to protect the bushing from damage in case of flashover. L distance can be adapted to customer needs.



External Shield

On customer requirement, the Fix-conductor version can be equipped with an external shield.



Example of Nameplate marking



Type:DT01/ $U_m=52kV$ / $AC=105kV$ / $BIL=250kV$ / $I_r=800A$ / $f_r=50Hz$

No:EA2011xxxx.xx.x / $m=42kg$ / $\alpha=90^\circ$

Testing

Routine Tests

Each DTOI is tested in accordance with the bushings specification IEC 60137-2008.

Type Tests

Our DTOI range of products have been type tested, reports are available on request.



Special Tests

Moser Glaser has performed some special tests to figure out its excellent design, below two examples some others are available on request.

Special Tests 1

Continuous operation test to on a DTOI 123kV bushing.
Simulating 30 years operation time.
Total of 50 000 lifting's at -30°C and $+50^{\circ}\text{C}$. Followed by routine test and dry lightning impulse withstand test (BIL) according IEC 60137.



Special Test 2

«Cook Test» on 145kV Bushing. 42 hours at $+98^{\circ}\text{C}$ with 1% salt solution followed by dry lightning impulse withstand test (BIL).

Target: To ensure that no humidity is taken up by the direct cast silicone insulator and RIP insulating body.



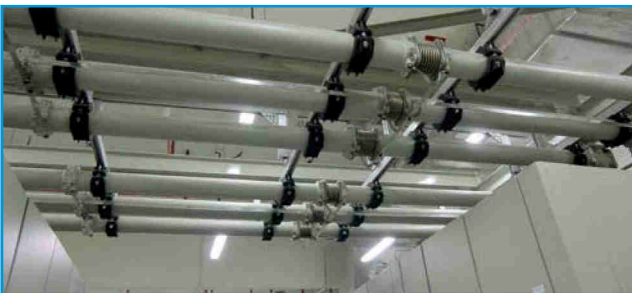
DURESCA®
Busbar system



TIRESCA®
Busbar system



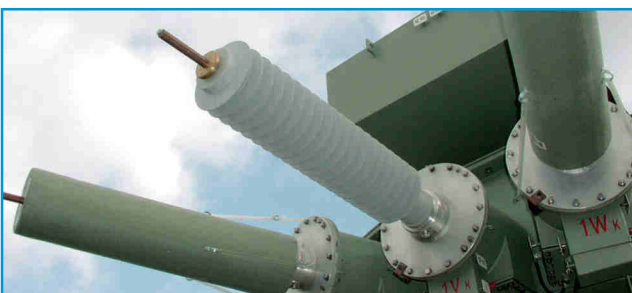
GASLINK®
SF₆ insulater busbar system



DURESCA®
Wall bushings



DURESCA®
Transformer bushings



MOSER GLASER

Current and voltage – our passion

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