

COMPOSITE INSULATORS FOR ELECTRICAL RAILWAY

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Cantilever Composite Insulator

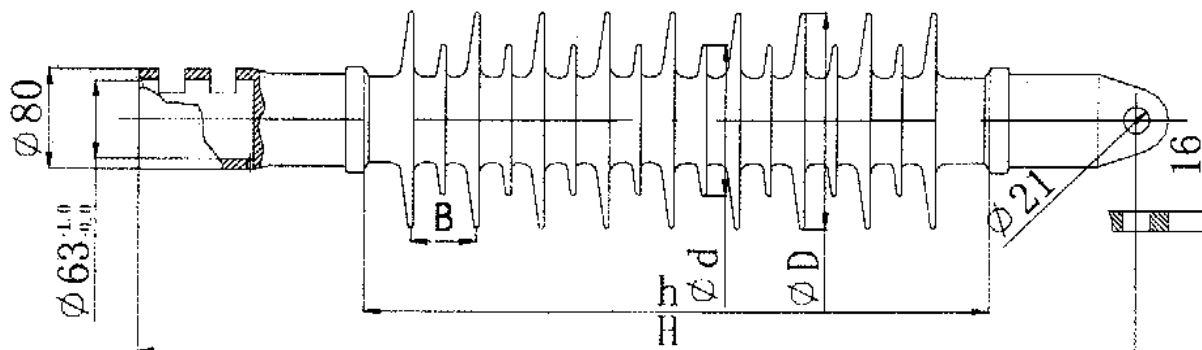


Fig.1 Cantilever composite insulator (tongue)

General dimension and characteristics of 25kV cantilever composite insulator

No.	1	2	3
Fig	1	1	1
Type	FQB-25/4-JH	FQB-25/8-JH	FQB-25/12-JH
Rated voltage kV	25	25	25
Specified mechanical bending load kN	4	8	12
Section height H, mm	760±5	760±5	760±5
Min arcing distance h, mm	468	468	468
Large shed diameter D, mm	157	172	192
Small shed diameter d, mm	105	120	140
Shed spacing B, mm	51	51	51
Min nominal creepage distance L, mm	1600	1600	1600
Lighting impulse withstand voltage >	300	300	300
Stem power frequency voltage ≥	180	180	180
Wet power frequency voltage ≥	150	150	150
Weight kg	7.2	11.5	15

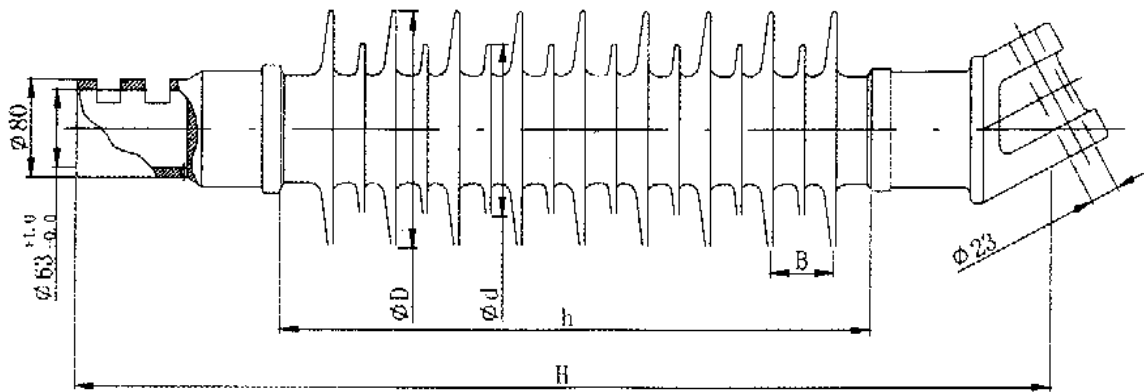


Fig.2 Cantilever composite insulator (oblique clevis)

General dimension and characteristics of 25kV cantilever composite insulator

No.	1	2	3
Fig.	2	2	2
Type	FQB-25/4-JX	FQB-25/8-JX	FQB-25/12-JX
Rated voltage kV	25	25	25
Specified mechanical bending load kN	4	8	12
Section height H, mm	760±5	760±5	760±5
Min arcing distance h, mm	468	468	468
Large shed diameter D, mm	157	172	192
Small shed diameter d, mm	105	120	140
Shed spacing B, mm	51	51	51
Min nominal creepage distance L, mm	1600	1600	1600
Lighting impulse withstand voltage >	300	300	300
Stem power frequency voltage ≥	180	180	180
Wet power frequency voltage ≥	150	150	150
Weight kg	8.2	12.5	16.5

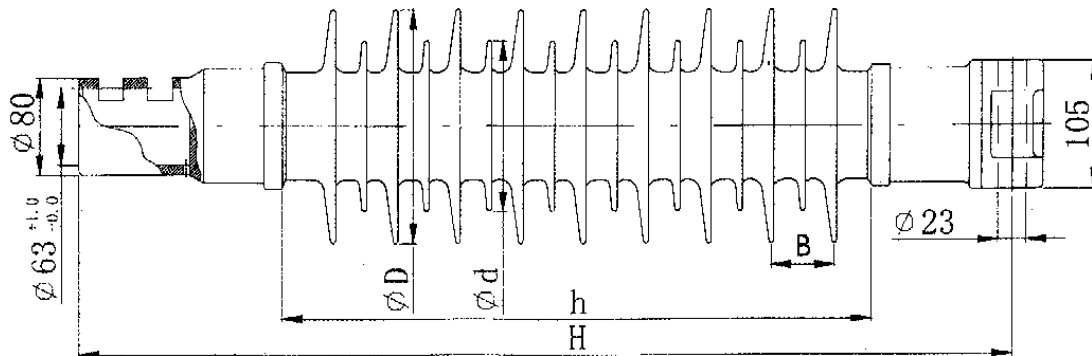


Fig.3 Cantilever composite insulator (straight clevis)

General dimension and characteristics of 25kV cantilever composite insulator (straight clevis)

No.	1	2	3
Fig.	3	3	3
Type	FQB-25/4-JZ	FQB-25/8-JZ	FQB-25/12-JZ
Rated voltage kV	25	25	25
Specified mechanical bending load kN	4	8	12
Section height H, mm	760±5	760±5	760±5
Min arcing distance h, mm	468	468	468
Large shed diameter D, mm	157	172	192
Small shed diameter d, mm	105	120	140
Shed spacing B, mm	51	51	51
Min nominal creepage distance L, mm	1600	1600	1600
Lighting impulse withstand voltage >	300	300	300
Stem power frequency voltage ≥	180	180	180
Wet power frequency voltage ≥	150	150	150
Weight kg	8.2	12.5	16.5

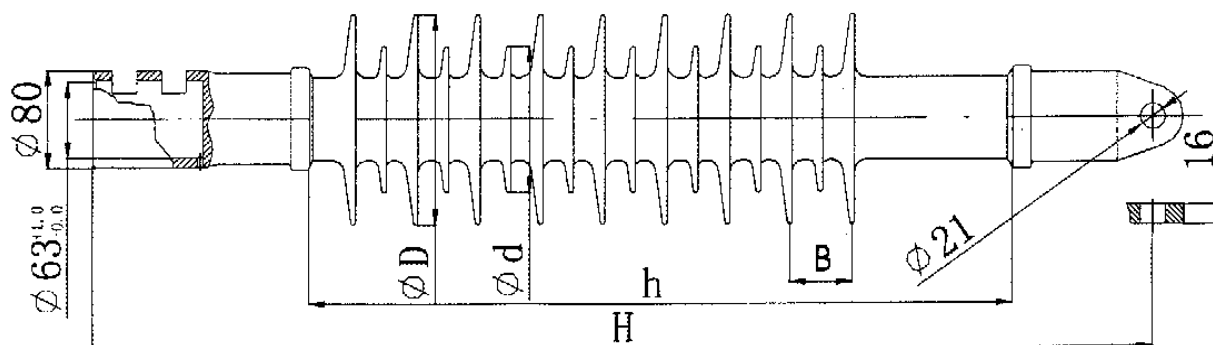


Fig.4 Double insulation cantilever composite insulator

General dimension and characteristics of 25kV double insulation cantilever composite insulator

No.	1	2	3
Fig.	4	4	4
Type	FQBS-25/4-JH	FQBS-25/8-JH	FQBS-25/12-JH
Rated voltage kV	25	25	25
Specified mechanical bending load kN	4	8	12
Section height H, mm	850±5	850±5	850±5
Min arcing distance h, mm	558	558	558
Large shed diameter D, mm	157	172	192
Small shed diameter d, mm	105	120	140
Shed spacing B, mm	51	51	51
Min nominal creepage distance L, mm	1600	1600	1600
Lighting impulse withstand voltage >	360	360	360
Stem power frequency voltage ≥	210	210	210
Wet power frequency voltage ≥	180	180	180
Weight kg	8.9	13.3	17.2

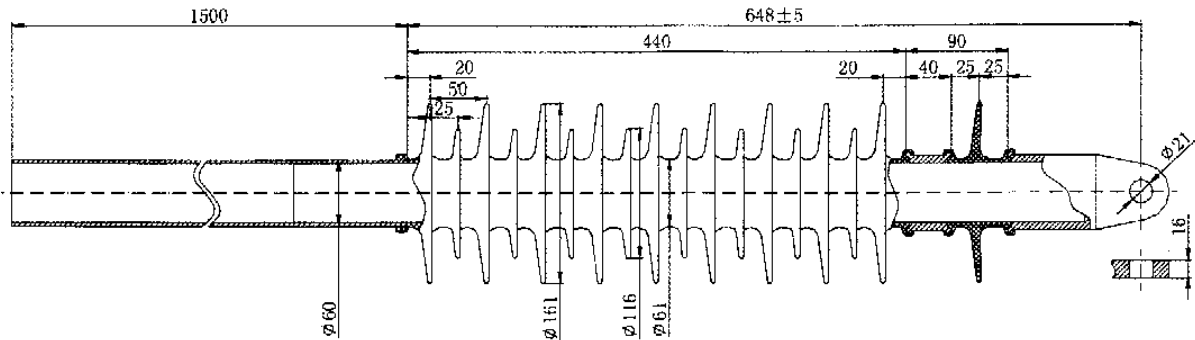


Fig.5 Double insulation cantilever composite insulator (new)

General dimension and characteristics of 25kV double insulation cantilever composite insulator (new)

No.	1
Fig.	5
Type	FQBS-25/8-YH
Rated voltage kV	25
Specified mechanical bending load kN	8
Section height H, mm	648±5
Min arcing distance h, mm	440+50
Large shed diameter D, mm	161
Small shed diameter d, mm	116
Shed spacing B, mm	50
Min nominal creepage distance L, mm	1600
Lighting impulse withstand voltage >	300
Stem power frequency voltage ≥	180
Wet power frequency voltage ≥	150
Weight kg	9.3

+ Catenary Composite Insulator

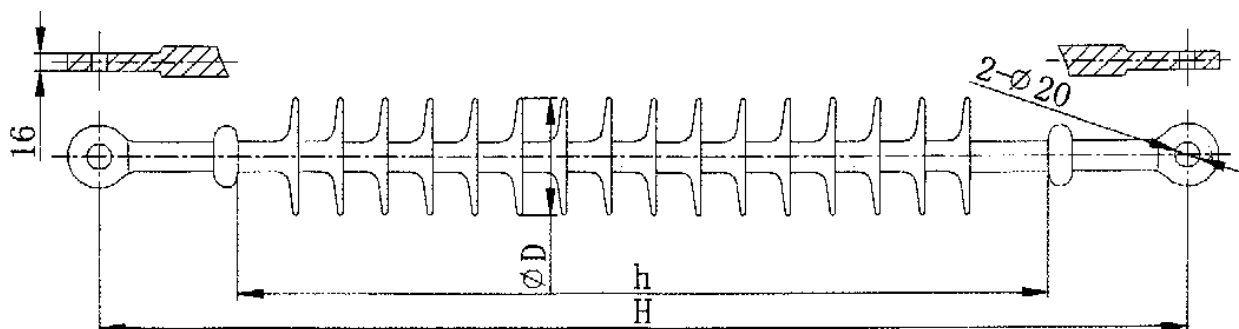


Fig.6 Catenary composite insulator (1)

General dimension and characteristics of 25kV catenary composite insulator (1)

No.	1	2	3
Fig.	6	6	6
Type	FQX-25/120-HH-1	FQX-25/120-HH-2	FQX-25/120-HH-3
Rated voltage kV	25	25	25
Specified mechanical bending load kN	120	120	120
Section height H, mm	830±5	880±5	950±5
Min arcing distance h, mm	600	650	720
Large shed diameter D, mm	88	88	88
Small shed diameter d, mm	35	35	35
Shed spacing B, mm	51	51	51
Min nominal creepage distance L, mm	1200	1500	1600
Lighting impulse withstand voltage >	360	420	450
Stem power frequency voltage ≥	210	250	280
Wet power frequency voltage ≥	180	220	250
Weight kg	2.7	3.2	3.7

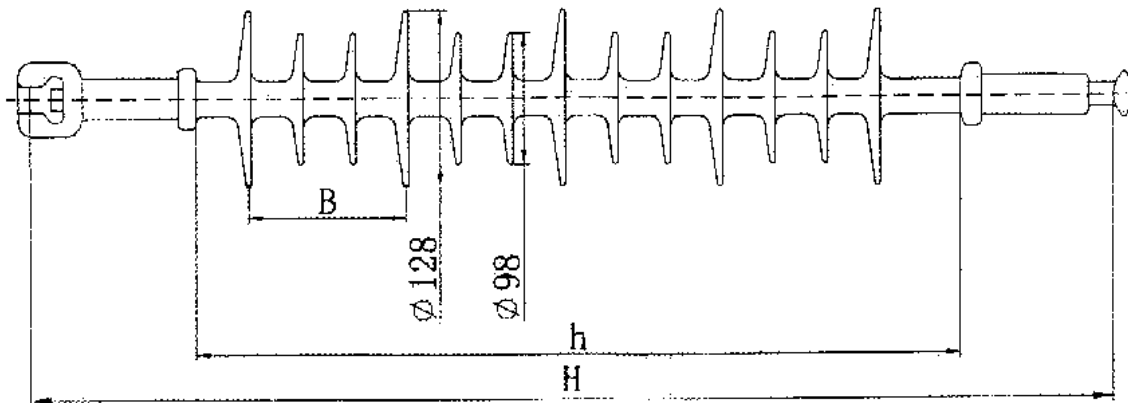


Fig.7 Catenary composite insulator (2)

General dimension and characteristics of 25kV catenary composite insulator (2)

No.	1	2	3
Fig.	7	7	7
Type	FQX-25/120-HT-1	FQX-25/120-HT-2	FQX-25/120-HT-3
Rated voltage kV	25	25	25
Specified mechanical load kN	120	120	120
Section height H, mm	750±5	785±5	925±5
Min arcing distance h, mm	525	560	600
Shed Diameter D, mm	88	88	88
Shed spacing B, mm	35	35	35
Min nominal creepage distance L, mm	1200	1300	1600
Lighting impulse withstand voltage ≥	330	360	390
Dry power frequency voltage ≥	200	210	230
Wet power frequency voltage ≥	170	180	190
Weight kg	2.5	3.0	3.5

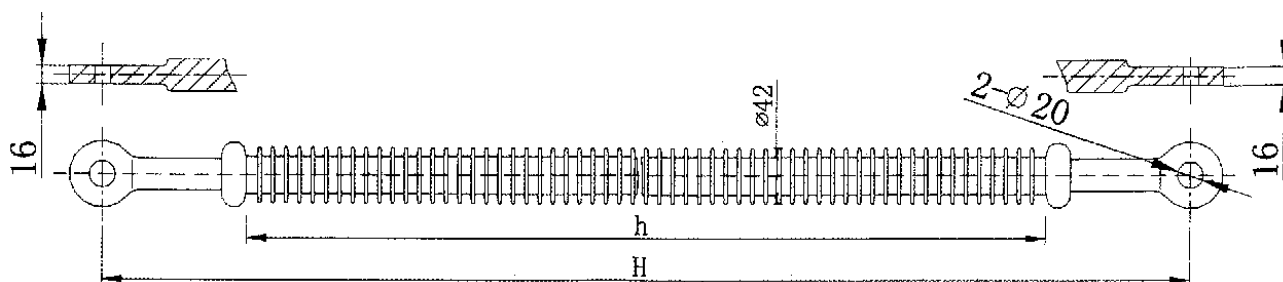


Fig.8 Catenary composite insulator (3)

General dimension and characteristics of 25kV catenary composite insulator (3)

No.	1	2
Fig.	8	8
Type	FQX-25/70-HH-1	FQX-25/70-HH-2
Rated voltage kV	25	25
Specified mechanical load kN	70	70
Section height H, mm	730±5	910±5
Min arcing distance h, mm	490	670
Shed diameter D, mm	42	42
Min nominal creepage distance L, mm	1200	1600
Lighting impulse withstand voltage >	330	420
Dry power frequency voltage ≥	195	250
Wet power frequency voltage ≥	165	220
Weight kg	2.7	3.2

Composite Insulators for Traction Transformer Substation

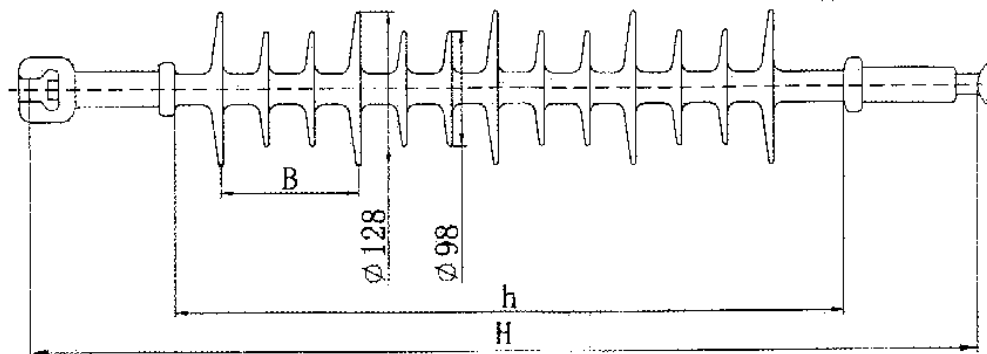


Fig.9 Composite insulator for traction transformer substation

General dimension and characteristics of 25kV composite insulator for traction transformer substation

No.	1	2
Fig.	9	9
Type	FQXW-25/70-QT-1	FQXW-25/70-QT-2
Rated voltage kV	25	25
Specified mechanical bending load kN	120	120
Section height H, mm	620±5	740±5
Min arcing distance h, mm	450	570
Large shed diameter D, mm	128	128
Small shed diameter d, mm	98	98
Shed spacing B, mm	117	117
Min nominal creepage distance L, mm	1200	1600
Lighting impulse withstand voltage >	300	360
Stem power frequency voltage ≥	180	210
Wet power frequency voltage ≥	150	180
Weight kg	2.8	3.2

✚ Orientating Composite Insulator for Railway Tunnel

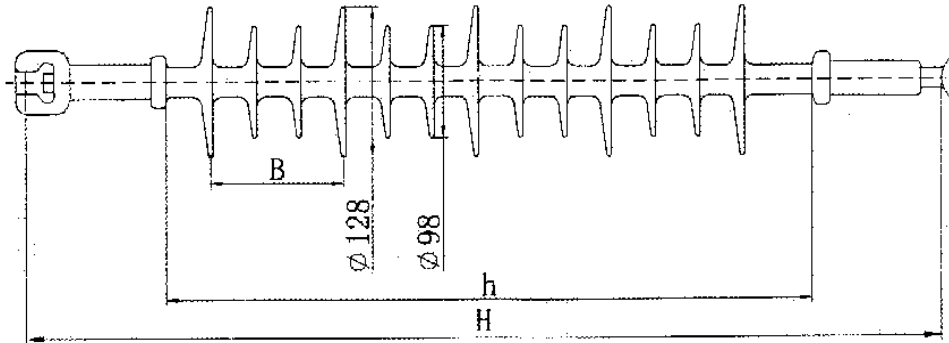


Fig.10 Orientating composite insulator for railway tunnel (1)

General dimension and characteristics of 25kV orientating composite insulator for railway tunnel (1)

No.	1	2	3
Fig.	10	10	10
Type	FQD-25/20-BY-A1	FQD-25/20-BY-A2	FQD-25/20-BY-A3
Rated voltage kV	25	25	25
Specified mechanical bending load kN	20	20	20
Section height H, mm	755±5	825±5	930±5
Min arcing distance h, mm	490	560	665
Shed diameter D, mm	88	88	88
Shed spacing B, mm	35	35	35
Min nominal creepage distance L, mm	1200	1350	1600
Lighting impulse withstand voltage ≥	330	360	420
Dry power frequency voltage ≥	195	210	250
Wet power frequency voltage ≥	165	180	220
Weight kg	2.7	3.2	3.7

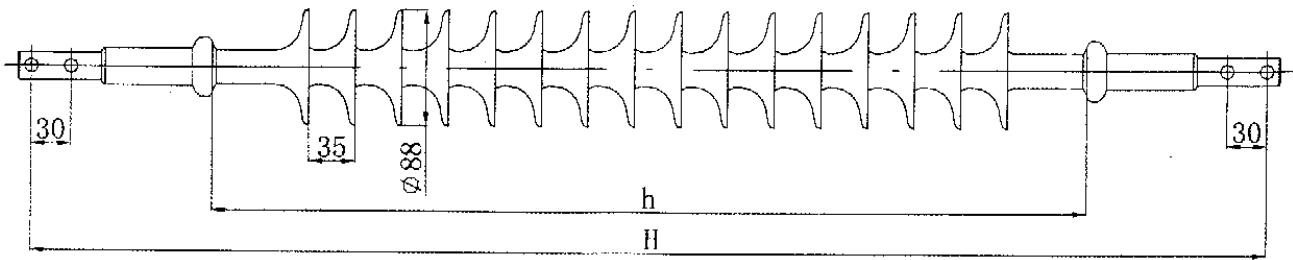


Fig.11 Orientating composite insulator for railway tunnel (2)

General dimension and characteristics of 25kV orientating composite insulator for railway tunnel (2)

No.	1	2	3
Fig.	11	11	11
Type	FQD-25/20-KK-1	FQD-25/20-KK-2	FQD-25/20-KK-3
Rated voltage kV	25	25	25
Specified mechanical bending load kN	20	20	20
Section height H, mm	825±5	930±5	965±5
Min arcing distance h, mm	550	655	690
Shed Diameter D, mm	88	88	88
Shed spacing B, mm	35	35	35
Min nominal creepage distance L, mm	1200	1500	1600
Lighting impulse withstand voltage ≥	360	420	450
Dry power frequency voltage ≥	210	250	280
Wet power frequency voltage ≥	180	220	250
Weight kg	2.6	3.1	3.6

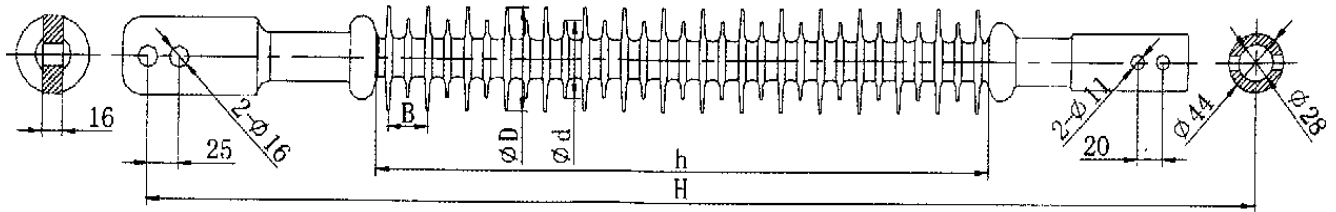


Fig.12 Orientating composite insulator for railway tunnel (3)

General dimension and characteristics of 25kV orientating composite insulator for railway tunnel (3)

No.	1	2	3
Fig.	12	12	12
Type	FQD-25/20-BY-B1	FQD-25/20-BY-B2	FQD-25/20-BY-B3
Rated voltage kV	25	25	25
Specified mechanical bending load kN	20	20	20
Section height H, mm	635±5	665±5	755±5
Min arcing distance h, mm	420	450	540
Large shed diameter D, mm	76	76	76
Small shed diameter D, mm	58	58	58
Shed spacing B, mm	31	31	31
Min nominal creepage distance L, mm	1200	1350	1600
Lighting impulse withstand voltage ≥	270	300	360
Dry power frequency voltage ≥	160	180	210
Wet power frequency voltage ≥	130	150	180
Weight kg	1.6	2.1	2.6

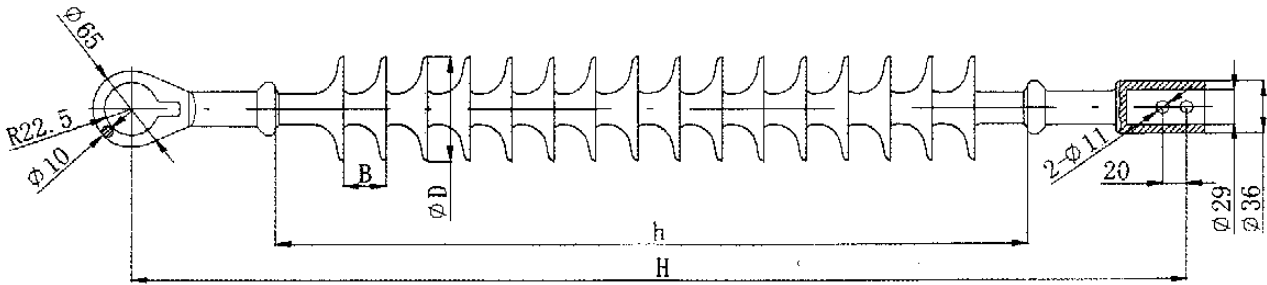


Fig.13 Orientating composite insulator for railway tunnel (4)

General dimension and characteristics of 25kV orientating composite insulator for railway tunnel (4)

No.	1	2	3
Fig.	13	13	13
Type	FQD-25/20-EY-A1	FQD-25/20-EY-A2	FQD-25/20-EY-A3
Rated voltage kV	25	25	25
Specified mechanical bending load kN	20	20	20
Section height H, mm	740±5	810±5	915±5
Min arcing distance h, mm	490	560	665
Shed Diameter D, mm	88	88	88
Shed spacing B, mm	35	35	35
Min nominal creepage distance L, mm	1200	1350	1600
Lighting impulse withstand voltage ≥	330	360	420
Dry power frequency voltage ≥	195	210	250
Wet power frequency voltage ≥	165	180	220
Weight kg	2.2	3	3.5

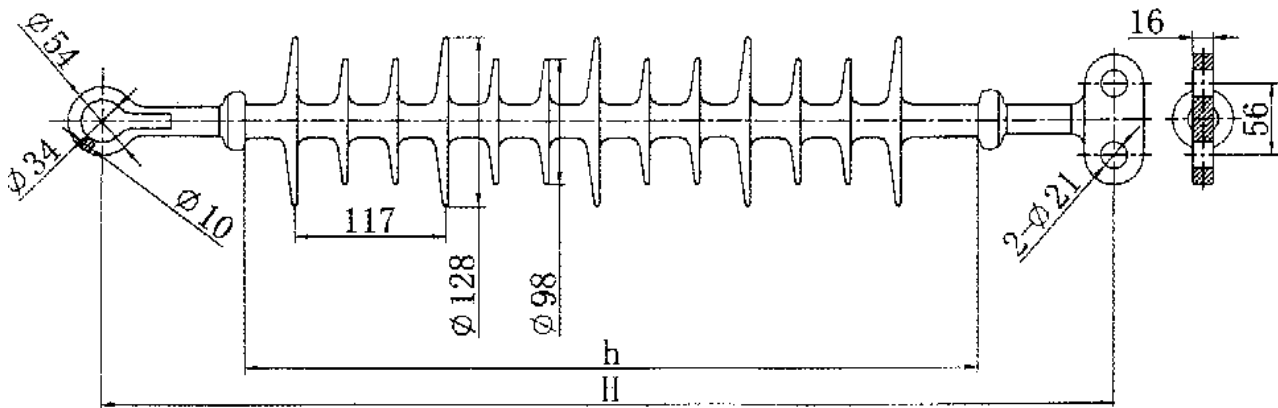


Fig.14 Orientating composite insulator for railway tunnel (5)

General dimension and characteristics of 25kV orientating composite insulator for railway tunnel (5)

No.	1	2	3
Fig.	14	14	14
Type	FQD-25/20-EB-1	FQD-25/20-EB-2	FQD-25/20-EB-3
Rated voltage kV	25	25	25
Specified mechanical bending load kN	20	20	20
Section height H, mm	685±5	785±5	800±5
Min arcing distance h, mm	465	560	580
Large Shed diameter D, mm	128	128	128
Small shed diameter D, mm	98	98	98
Shed spacing B, mm	117	117	117
Min nominal creepage distance L, mm	1200	1480	1600
Lighting impulse withstand voltage ≥	300	360	360
Dry power frequency voltage ≥	180	210	210
Wet power frequency voltage ≥	150	180	180
Weight kg	2.5	3.0	3.5

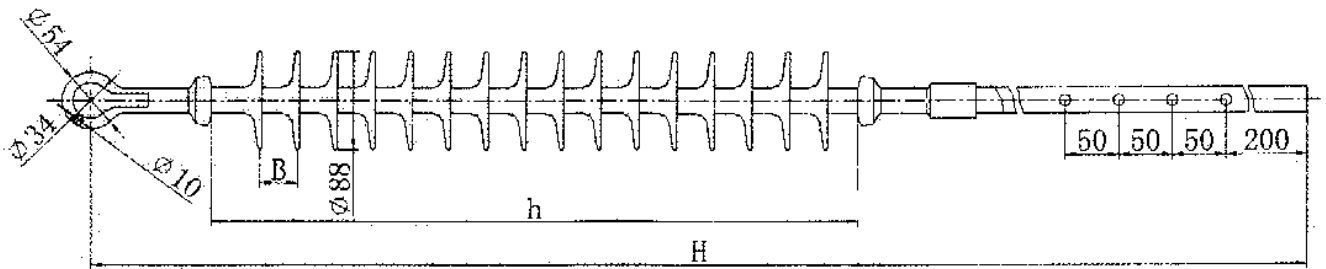


Fig.15 Orientating composite insulator for railway tunnel (6)

General dimension and characteristics of 25kV orientating composite insulator for railway tunnel (6)

No.	1	2	3
Fig.	15	15	15
Type	FQD-25/20-EY-B1	FQD-25/20-EY-B2	FQD-25/20-EY-B3
Rated voltage kV	25	25	25
Specified mechanical bending load kN	20	20	20
Section height H, mm	1300±5	1340±5	1480±5
Min arcing distance h, mm	520	560	600
Shed Diameter D, mm	88	88	88
Shed spacing B, mm	35	35	35
Min nominal creepage distance L, mm	1200	1300	1600
Lighting impulse withstand voltage ≥	330	360	390
Dry power frequency voltage ≥	200	210	230
Wet power frequency voltage ≥	170	180	190
Weight kg	4.0	4.5	5.0

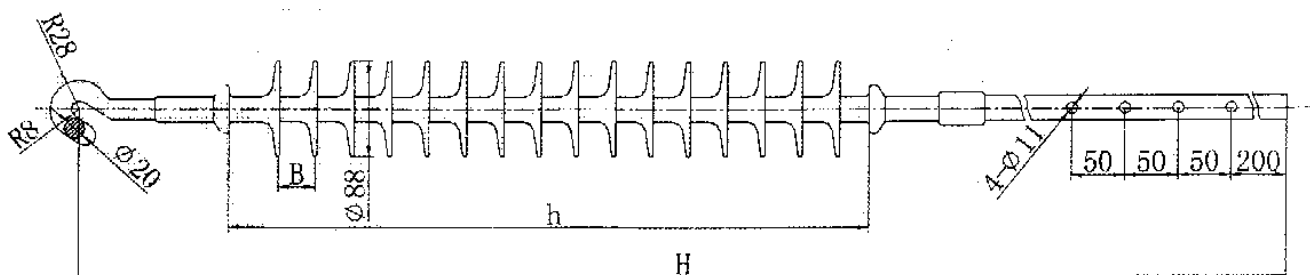


Fig.16 Orientating composite insulator for railway tunnel (7)

General dimension and characteristics of 25kV orientating composite insulator for railway tunnel (7)

No.	1	2	3
Fig.	16	16	16
Type	FQD-25/20-CY-1	FQD-25/20-CY-2	FQD-25/20-CY-3
Rated voltage kV	25	25	25
Specified mechanical bending load kN	20	20	20
Section height H, mm	1310±5	1380±5	1450±5
Min arcing distance h, mm	530	600	670
Shed Diameter D, mm	88	88	88
Shed spacing B, mm	35	35	35
Min nominal creepage distance L, mm	1200	1400	1600
Lighting impulse withstand voltage ≥	300	390	420
Dry power frequency voltage ≥	200	230	250
Wet power frequency voltage ≥	170	190	220
Weight kg	2.5	3.0	3.5

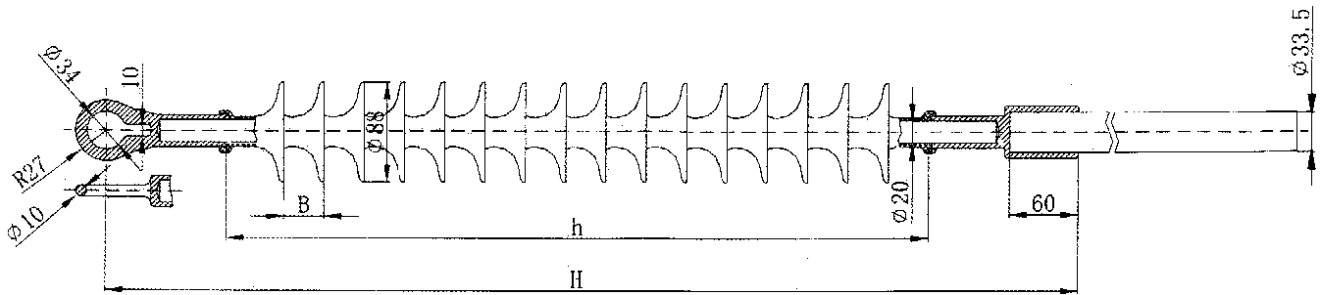


Fig.17 Orientating composite insulator for railway tunnel(8)

General dimension and characteristics of 25kV orientating composite insulator for railway tunnel (8)

No.	1	2
Fig.	17	17
Type	FQD-25/20-EY-C1	FQD-25/20-EY-C2
Rated voltage kV	25	25
Specified mechanical bending load kN	20	20
Section height H, mm	845±5	1020±5
Min arcing distance h, mm	610	785
Shed diameter D, mm	88	88
Shed spacing B, mm	35	35
Min nominal creepage distance L, mm	1200	1600
Lighting impulse withstand voltage ≥	390	480
Dry power frequency voltage ≥	230	280
Wet power frequency voltage ≥	190	240
Weight kg	6.5	7

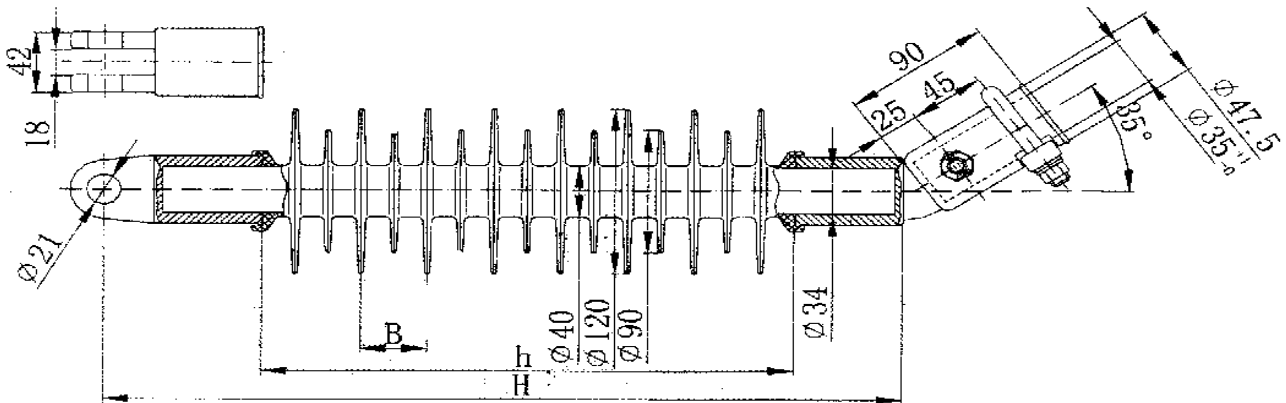


Fig.18 Orientating composite insulator for railway tunnel (9)

General dimension and characteristics of 25kV orientating composite insulator for railway tunnel (9)

No.	1	2
Fig.	18	18
Type	FQD-25/4-UY-1	FQD-25/4-UY-2
Rated voltage kV	25	25
Specified mechanical bending load kN	4	4
Section height H, mm	480±5	600±5
Min arcing distance h, mm	320	440
Large Shed diameter D, mm	120	120
Small shed diameter D, mm	90	90
Shed spacing B, mm	40	40
Min nominal creepage distance L, mm	1200	1600
Lighting impulse withstand voltage ≥	250	300
Dry power frequency voltage ≥	150	180
Wet power frequency voltage ≥	130	150
Weight kg	3.8	4.3

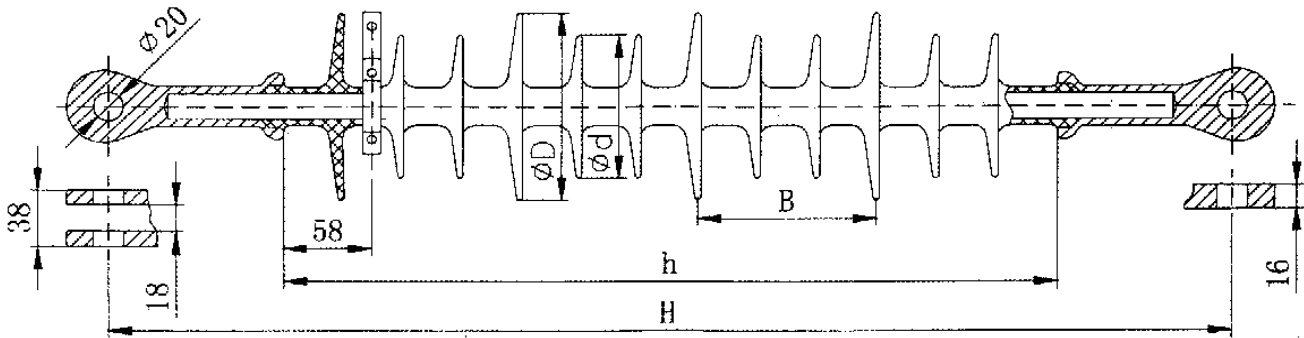


Fig.19 Suspension composite insulator

General dimension and characteristics of 25kV suspension composite insulator

No.	1	2
Fig.	19	19
Type	FQXS-25/100-UH-1	FQXS-25/100-UH-2
Rated voltage kV	25	25
Specified mechanical bending load kN	100	100
Section height H, mm	738±5	840±5
Min arcing distance h, mm	508	610
Large Shed Diameter D, mm	128	128
Small shed diameter d, mm	98	98
Shed spacing B, mm	117	117
Min nominal creepage distance L, mm	1200	1600
Lighting impulse withstand voltage \geq	250	300
Dry power frequency voltage \geq	150	180
Wet power frequency voltage \geq	130	150
Weight kg	3.8	4.3

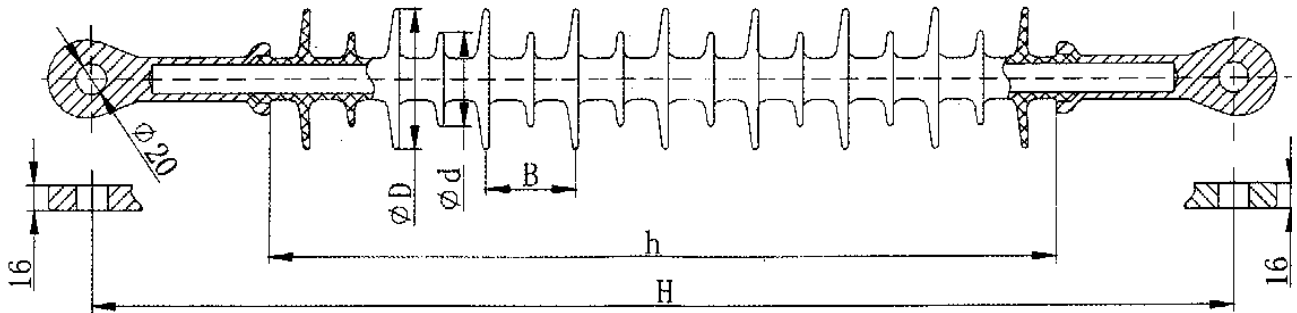


Fig.20 Suspension composite insulator

General dimension and characteristics of 25kV suspension composite insulator

No.	1	2
Fig.	20	20
Type	FQX-25/100-HH-1	FQX-25/100-HH-2
Rated voltage kV	25	25
Specified mechanical bending load kN	100	100
Section height H , mm	738±5	910±5
Min arcing distance h , mm	508	680
Large Shed diameter D , mm	90	90
Small shed diameter d , mm	60	60
Shed spacing B , mm	58	58
Min nominal creepage distance L , mm	1200	1600
Lighting impulse withstand voltage \geq	250	300
Dry power frequency voltage \geq	150	180
Wet power frequency voltage \geq	130	150
Weight kg	3.8	4.3