



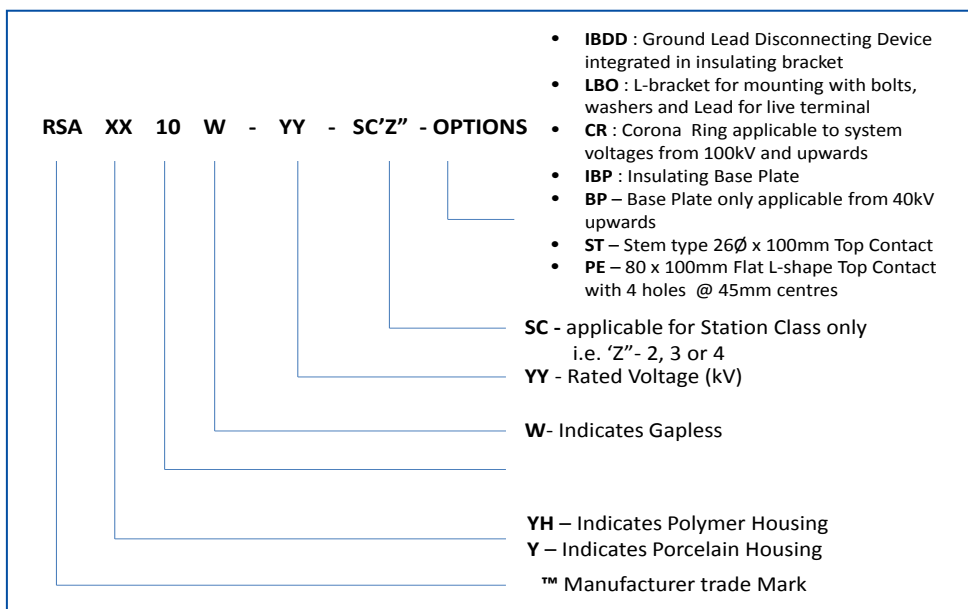
VARISIL™ RSA / (XX 5/10/20 W-YY where YY = 3 to 444kV) Type Surge Arresters to Latest IEC 60099-4-2009 PORCELAIN & POLYMER HOUSED GAPLESS METAL OXIDE TYPE from 3 kV up to 444 kV

Surge Arrester Series

1. General

- 1.1 Ratings: 3~444kV (400kV Systems) (Porcelain), 3~200kV (220kV Systems) (Composite)
- 1.2 Application: for protection of power transmission & distribution system from over-voltage
- 1.3 Standards: IEC 60099-4: 2006 to 2009, ANSI, etc.
- 1.4 Features:
 - Silicone polymer / composite housed metal oxide surge arrester and Porcelain housed metal oxide surge arresters are available.
 - Easy installation and maintenance.
 - Excellent sealing capability to ensure reliable operation.
 - Protection and reliability of the surge arrester has been greatly enhanced.

2. Type Designation



3. Requirements when ordering voltages ranging from 108kV and above

- 3.1. Corona Rings are STD component for voltages ranging from 100kV and above.
- 3.2. Base Plates with insulating bases are to be only ordered or used when coupling them to Surge Counter applications.
- 3.3. All station types have STD base plates and these are as STD supply for voltages ranging from 40kV and above.

4. Working Condition

- 4.1. Ambient air temperature: -40°C ~ +60°C;
- 4.2. Altitude: ≤3000m;
- 4.3. Frequency: 48Hz ~ 62Hz;
- 4.4. Power frequency voltage applied between terminals of surge arrester must not exceed continuous operating voltage of surge arrester;
- 4.5. Earthquake (Seismic) intensity is less than 8 degree;
- 4.6. Max. wind speed is 35m/s;

5. Main Technical Parameter

5.1. Metal Oxide Varistar Polymer Housed (Gapless) type Surge Arrester for A.C Systems (5kA)

Model	Rated Voltage (kV rms)	Continuous operating voltage (kVrms)	Lightning impulse Residual voltage Under nominal discharge current (≤kVp)	Line Discharge class	Creepage distance (mm)	2ms square wave impulse current withstand (A)	4/10μ high Current impulse withstand	Fig. No.
RSA/YH/5/W-6	6	4.8	18	1	320	150	65	1
RSA/YH/5/W-9	9	7.2	27	1	430	150	65	2
RSA/YH/5/W-12	12	9.6	36	1	430	150	65	2
RSA/YH/5/W-15	15	12	45	1	530	150	65	3
RSA/YH/5/W-18	18	14.4	54	1	530	150	65	3
RSA/YH/5/W-21	21	16.8	63	1	640	150	65	4
RSA/YH/5/W-24	24	19.2	72	1	640	150	65	4
RSA/YH/5/W-27	27	21.6	81	1	740	150	65	5
RSA/YH/5/W-30	30	24	90	1	890	150	65	6
RSA/YH/5/W-33	33	26.4	99	1	890	150	65	7
RSA/YH/5/W-36	36	28.8	108	1	1115	150	65	7

5.2. Metal Oxide Varistar Polymer Housed (Gapless) type Surge Arrester for A.C Systems (10kA)

Model	Rated Voltage (kV rms)	Continuous operating voltage (kVrms)	Lightning impulse Residual voltage Under nominal discharge current ($\leq kVp$)	Line Discharge class	Creepage distance (mm)	2ms square wave impulse current withstand (A)	4/10 μ high Current impulse withstand	Fig. No.
RSA/YH/10/W-3	3	2.4	9	1	180	250	100	8
RSA/YH/10/W-6	6	4.8	18	1	240	250	100	8
RSA/YH/10/W-9	9	7.2	27	1 & 2	300/340	250	100	9
RSA/YH/10/W-12	12	9.6	36	1 & 2	380/400	250	100	9
RSA/YH/10/W-15	15	12	45	1 & 2	400/450	250	100	10
RSA/YH/10/W-18	18	14.4	54	1 & 2	510/400	250	100	10
RSA/YH/10W-21	21	16.8	63	1 & 2	580/730	250	100	11
RSA/YH/10/W-24	24	19.2	72	1 & 2	640/730	250	100	12
RSA/YH/10/W-27	27	21.6	81	1 & 2	710/730	250	100	12
RSA/YH/10/W-30	30	24	90	1 & 2	780/1125	250	100	13
RSA/YH/10/W-33	33	26.4	99	1 & 2	840/1125	250	100	13
RSA/YH/10/W-36	36	28.8	108	1 & 2	920/1125	250	100	14
RSA/YH/10/W-42	42	33.6	126	2 & 3	1260	400	100	15
RSA/YH/10/W-48	48	39	139	2 & 3	1260	400	100	15
RSA/YH/10/W-54	54	42	160	2 & 3	1260	400	100	15
RSA/YH/10/W-60	60	48	178	2 & 3	1465	400	100	16
RSA/YH/10/W-66	66	52.8	196	2 & 3	1465	400	100	16
RSA/YH/10/W-72	72	57	214	2 & 3	2255/2780	400	100	17
RSA/YH/10/W-84	84	67.2	244	2 & 3	2255/2780	400	100	17
RSA/YH/10/W-90	90	72.5	249	2 & 3	2255/2780	400	100	17
RSA/YH/10/W-96	96	75	265	2 & 3	3555	800	100	18
RSA/YH/10/W-108	108	84	281	2 & 3	3555	800	100	18
RSA/YH/10/W-120	120	98	300	2 & 3	4153	800	100	19
RSA/YH/10/W-150	150	120	416	2 & 3	5040	800	100	20
RSA/YH/10/W-200	200	156	520	2 & 3	7110	800	100	21

5.3. Metal Oxide Varistar Polymer Housed (Gapless) type Surge Arrester for A.C Systems (20kA)

Model	Rated Voltage (kV rms)	Continuous operating voltage (kVrms)	Lightning impulse Residual voltage Under nominal discharge current ($\leq kVp$)	Line Discharge class	Creepage distance (mm)	2ms square wave impulse current withstand (A)	4/10 μ high Current impulse withstand	Fig. No.
RSA/YH/20/W-108	108	84	281	3 & 4	3555	800	100	18
RSA/YH/20/W-120	120	98	300	3 & 4	4153	800	100	19
RSA/YH/20/W-150	150	120	416	3 & 4	5040	800	100	20
RSA/YH/20/W-200	200	156	520	3 & 4	7110	800	100	21

5.4. Metal Oxide Varistar Porcelain Housed (Gapless) type Surge Arrester for A.C Systems (10kA)

Model	Rated Voltage (kV rms)	Continuous operating voltage (kVrms)	Lightning impulse Residual voltage Under nominal discharge current (\leq kVp)	Line Discharge class	Creepage distance (mm)	2ms square wave impulse current withstand (A)	4/10 μ high Current impulse withstand	Fig. No.
RSA/Y/5/W-6	6	5.1	18	1	280	150	65	22
RSA/Y/5/W-9	9	7.65	27	1	320	150	65	23
RSA/Y/5/W-12	12	10.2	36	1	320	150	65	23
RSA/Y/5/W-15	15	12.75	45	1	450	150	65	24
RSA/Y/5/W-18	18	15.3	54	1	450	150	65	24
RSA/Y/5/W-21	21	16.8	63	1	450	150	65	24
RSA/Y/5/W-24	24	19.2	72	1	510	150	65	25
RSA/Y/5/W-27	27	21.6	81	1	510	150	65	25
RSA/Y/5/W-30	30	24	90	1	890	150	65	26
RSA/Y/5/W-33	33	26.4	99	1	890	150	65	26
RSA/Y/5/W-36	36	28.8	108	1	890	150	65	26

5.5. Metal Oxide Varistar Porcelain Housed (Gapless) type Surge Arrester for A.C Systems (10kA)

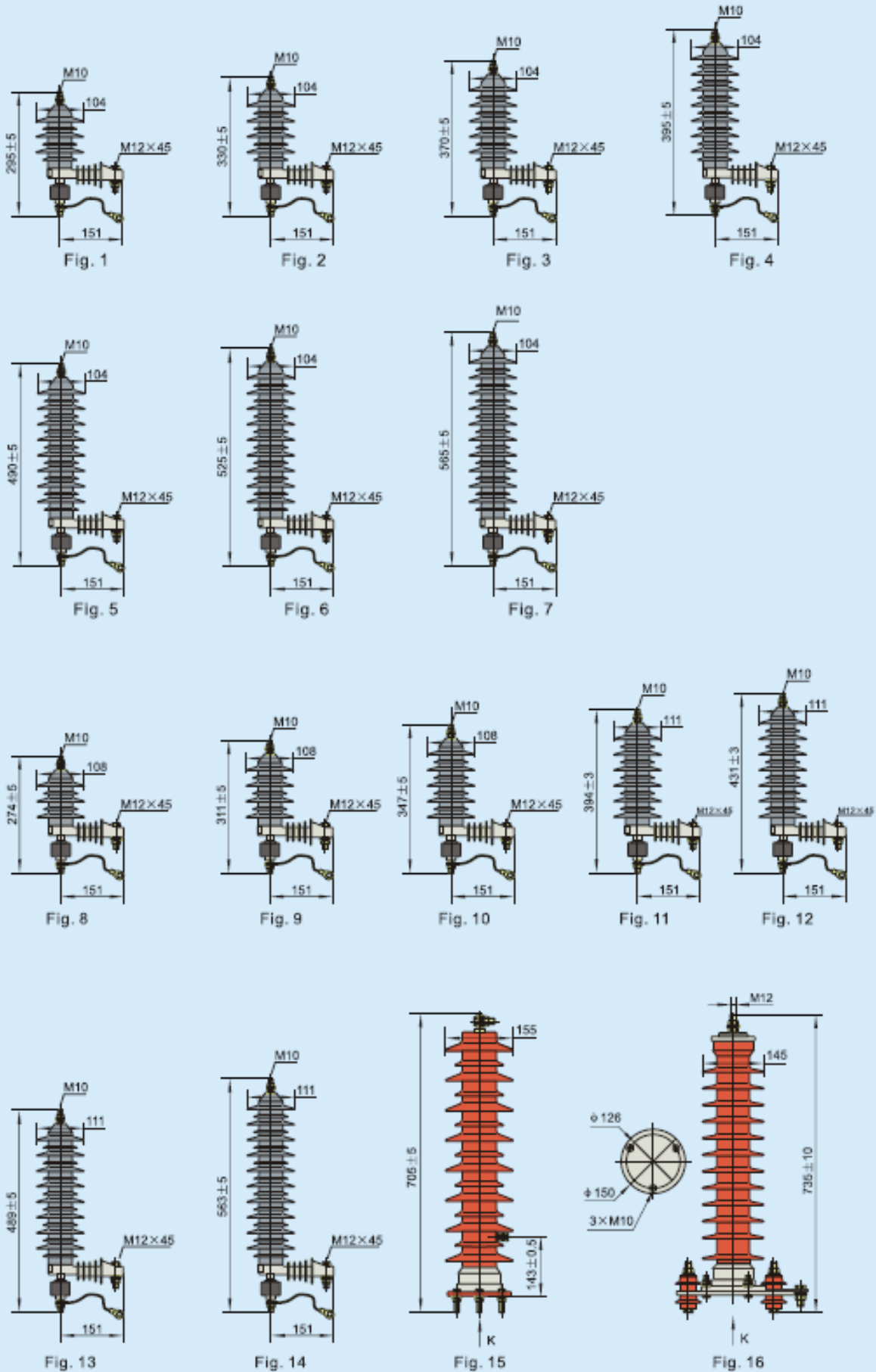
Model	Rated Voltage (kV rms)	Continuous operating voltage (kVrms)	Lightning impulse Residual voltage Under nominal discharge current (\leq kVp)	Line Discharge class	Creepage distance (mm)	2ms square wave impulse current withstand (A)	4/10 μ high Current impulse withstand	Fig. No.
RSA/Y/10/W-6	6	5.1	18	1	280	250	100	27
RSA/Y/10/W-9	9	7.65	27	1 & 2	320	250	100	28
RSA/Y/10/W-12	12	10.2	36	1 & 2	320	250	100	28
RSA/Y/10/W-15	15	12.75	45	1 & 2	450	250	100	29
RSA/Y/10/W-18	18	15.3	54	1 & 2	450	250	100	29
RSA/Y/10/W-21	21	16.8	63	1 & 2	450	250	100	29
RSA/Y/10/W-24	24	19.2	72	1 & 2	510	250	100	30
RSA/Y/10/W-27	27	21.6	81	1 & 2	510	250	100	30
RSA/Y/10/W-30	30	24	90	1 & 2	890	250	100	31
RSA/Y/10/W-33	33	26.4	99	1 & 2	890	250	100	31
RSA/Y/10/W-36	36	28.8	108	1 & 2	890	250	100	31
RSA/Y/10/W-42	42	33.6	126	2 & 3	1256	400	100	32
RSA/Y/10/W-48	48	39	139	2 & 3	1256	400	100	32
RSA/Y/10/W-54	54	42	160	2 & 3	1256	400	100	32
RSA/Y/10/W-60	60	48	178	2 & 3	1440	400	100	33
RSA/Y/10/W-66	66	52.8	196	2 & 3	1440	400	100	33
RSA/Y/10/W-72	72	57	214	2 & 3	1440	400	100	33
RSA/Y/10/W-84	84	67.2	244	2 & 3	2200	400	100	34
RSA/Y/10/W-90	90	72.5	249	2 & 3	2200	400	100	34
RSA/Y/10/W-96	96	75	265	2 & 3	3350	800	100	35
RSA/Y/10/W-108	108	84	281	2 & 3	3350	800	100	35
RSA/Y/10/W-120	120	98	300	2 & 3	3958	800	100	36
RSA/Y/10/W-150	150	120	416	2 & 3	4400	800	100	37
RSA/Y/10/W-200	200	156	520	2 & 3	6700	800	100	38

5.6. Metal Oxide Varistar Porcelain Housed (Gapless) type Surge Arrester for A.C Systems (20kA)

Model	Rated Voltage (kV rms)	Continuous operating voltage (kVrms)	Lightning impulse Residual voltage Under nominal discharge current ($\leq kVp$)	Line Discharge class	Creepage distance (mm)	2ms square wave impulse current withstand (A)	4/10 μ high Current impulse withstand	Fig. No.
RSA/Y/20/W-108	108	84	281	3 & 4	3350	800	100	35
RSA/Y/20/W-120	120	98	300	3 & 4	3958	800	100	36
RSA/Y/20/W-150	150	120	416	3 & 4	4400	800	100	37
RSA/Y/20/W-200	200	156	520	3 & 4	6700	800	100	38
RSA/Y/20/W-444	444	324	1106	4	17052	2000	100	39

6. General Overall and Installation Dimensions

6.1. Actual Dimensional drawings will be provided upon request.



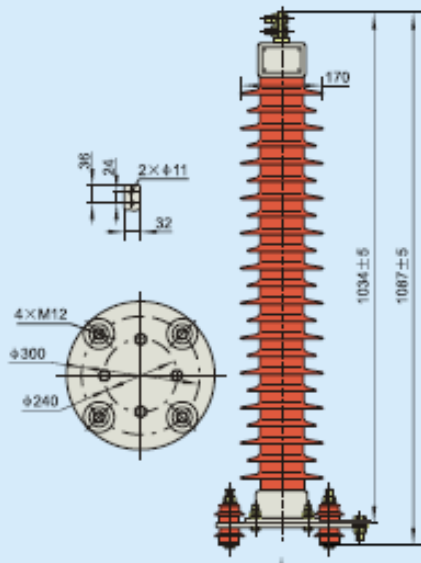


Fig. 17

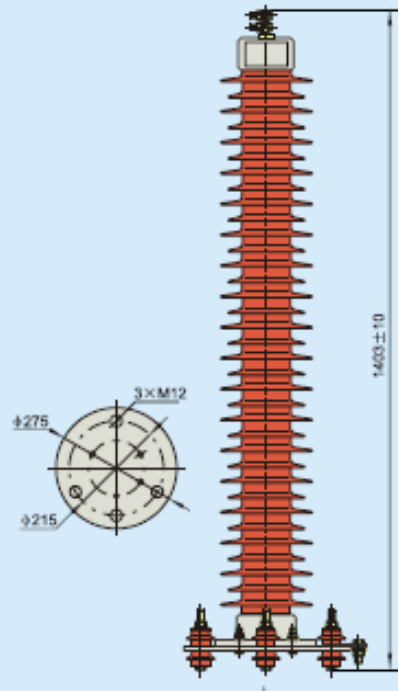


Fig. 18

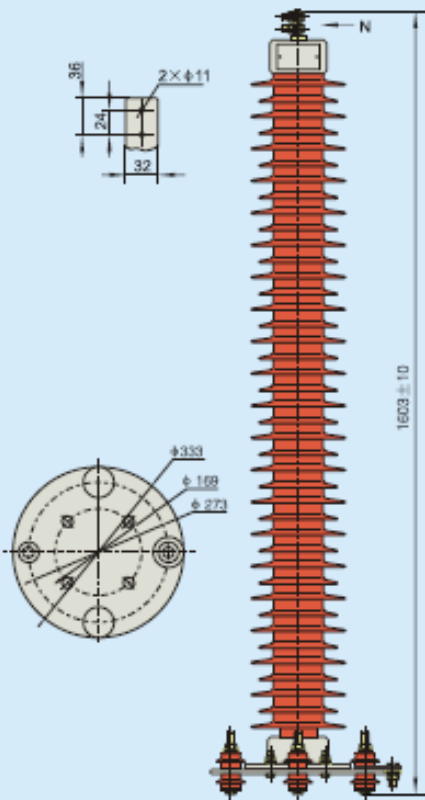


Fig. 19

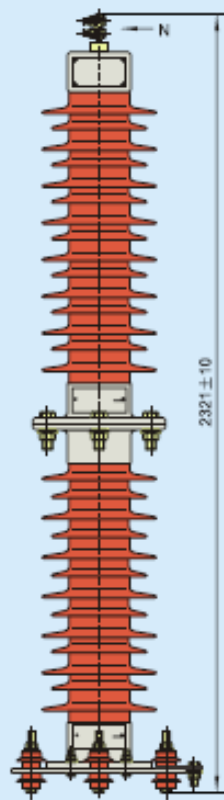


Fig. 20

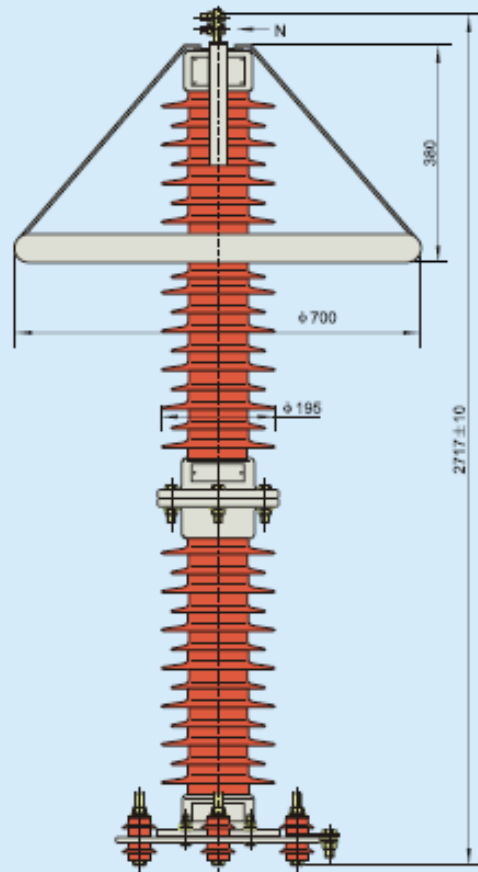


Fig. 21

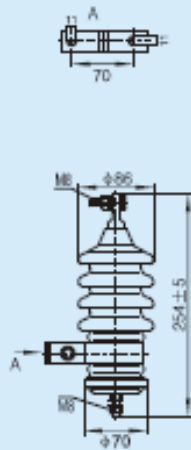


Fig. 22

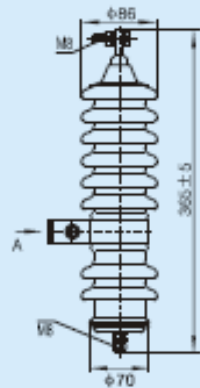


Fig. 23

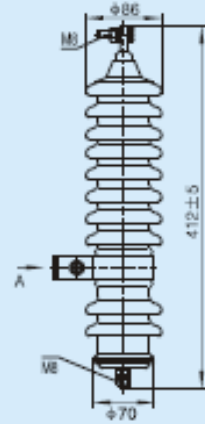


Fig. 24

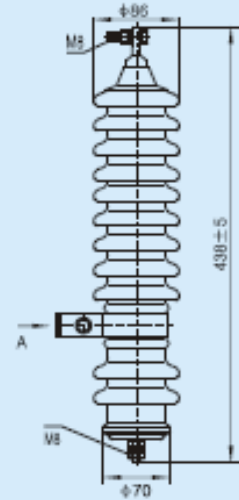


Fig. 25

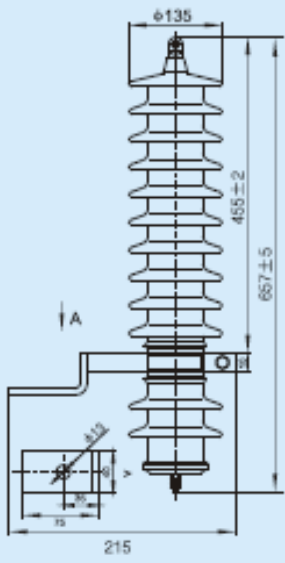


Fig. 26

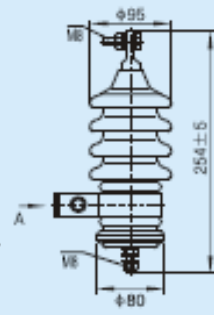


Fig. 27

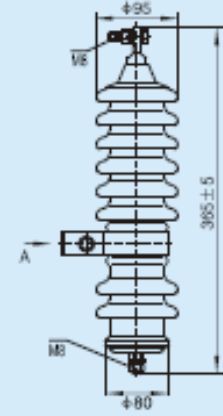


Fig. 28

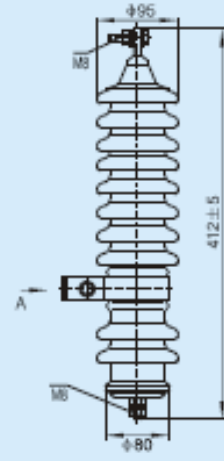


Fig. 29

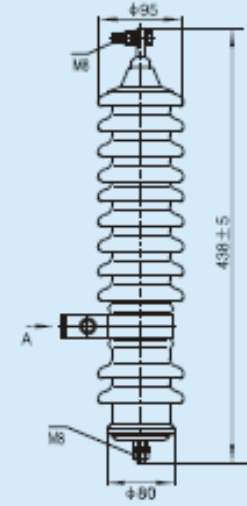


Fig. 30

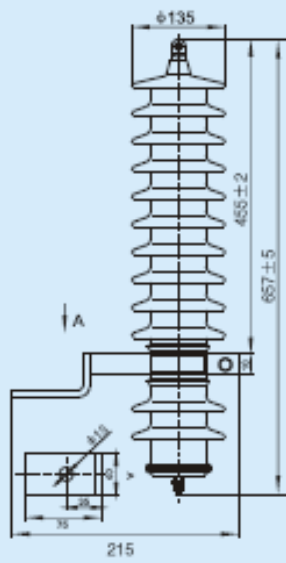


Fig. 31

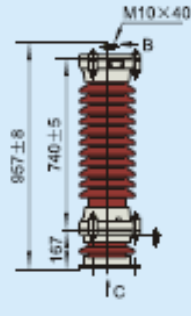
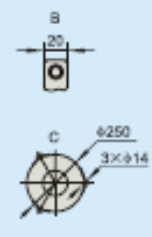


Fig. 32

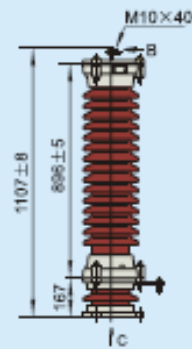


Fig. 33

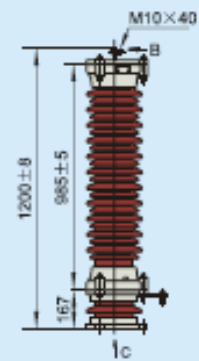
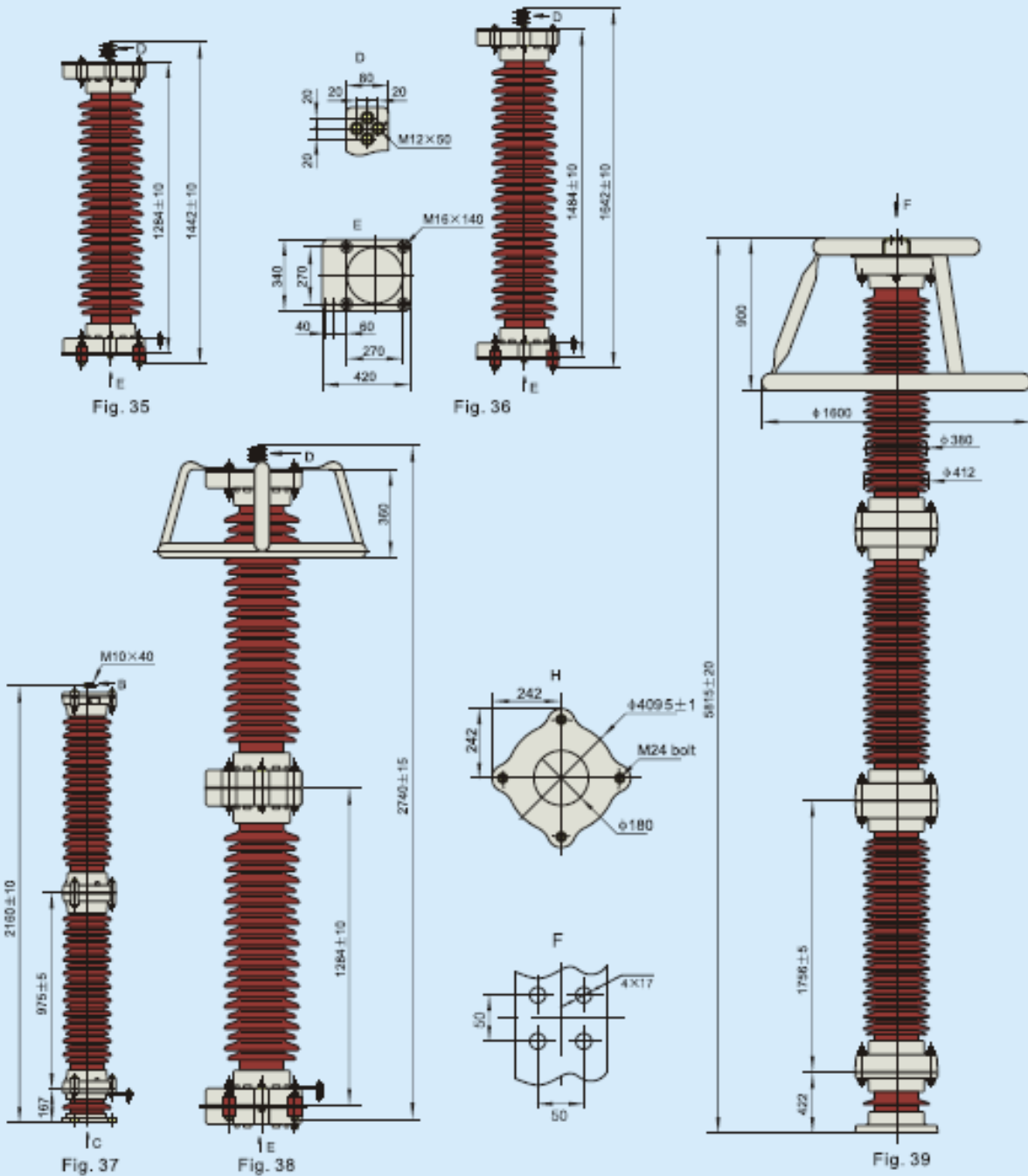


Fig. 34



7. Ordering Information

- 7.1. Max. System Voltage;
- 7.2. System Neutral Connection (i.e. effective or Non-effective System earthing);
- 7.3. Rated Voltage or Max. Continuous Operating Voltage;
- 7.4. Nominal Discharge Current (i.e. 5, 10 or 20kA);
- 7.5. Type of Housing (Polymer or Porcelain);
- 7.6. Pollution Level and or Creepage Distance (i.e. Light, Medium, Heavy & Very Heavy);
- 7.7. Any Specific / Special Requirement (i.e. Terminal end fittings);
- 7.8. Accessories (i.e. Insulating Bracket with Disconnecting Device, Insulating Base & Surge Counters).