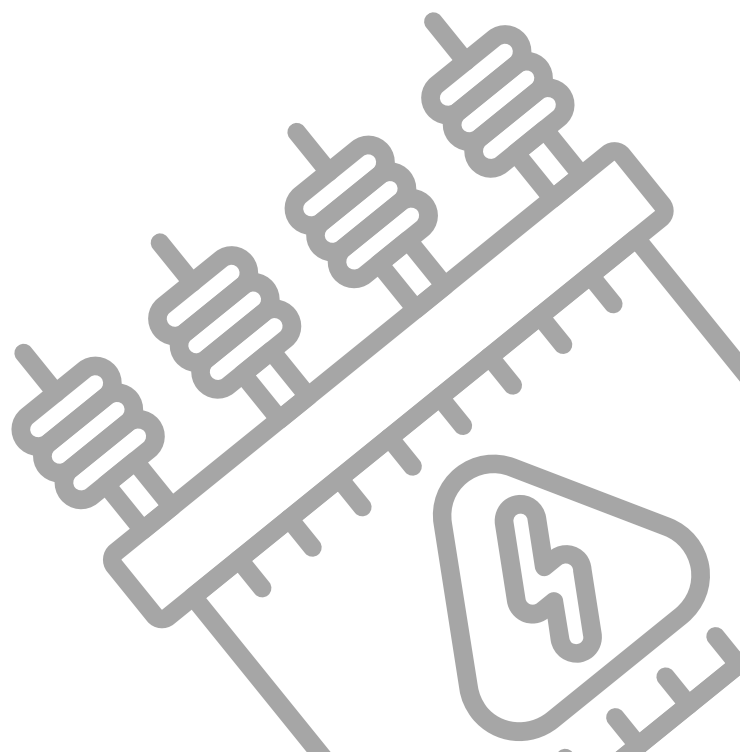


DISCONNECTORS & EARTHINGSWITCHE

General Information, Recommended
Spares, Services & Maintenance brochure
For rated voltage up to 420kV

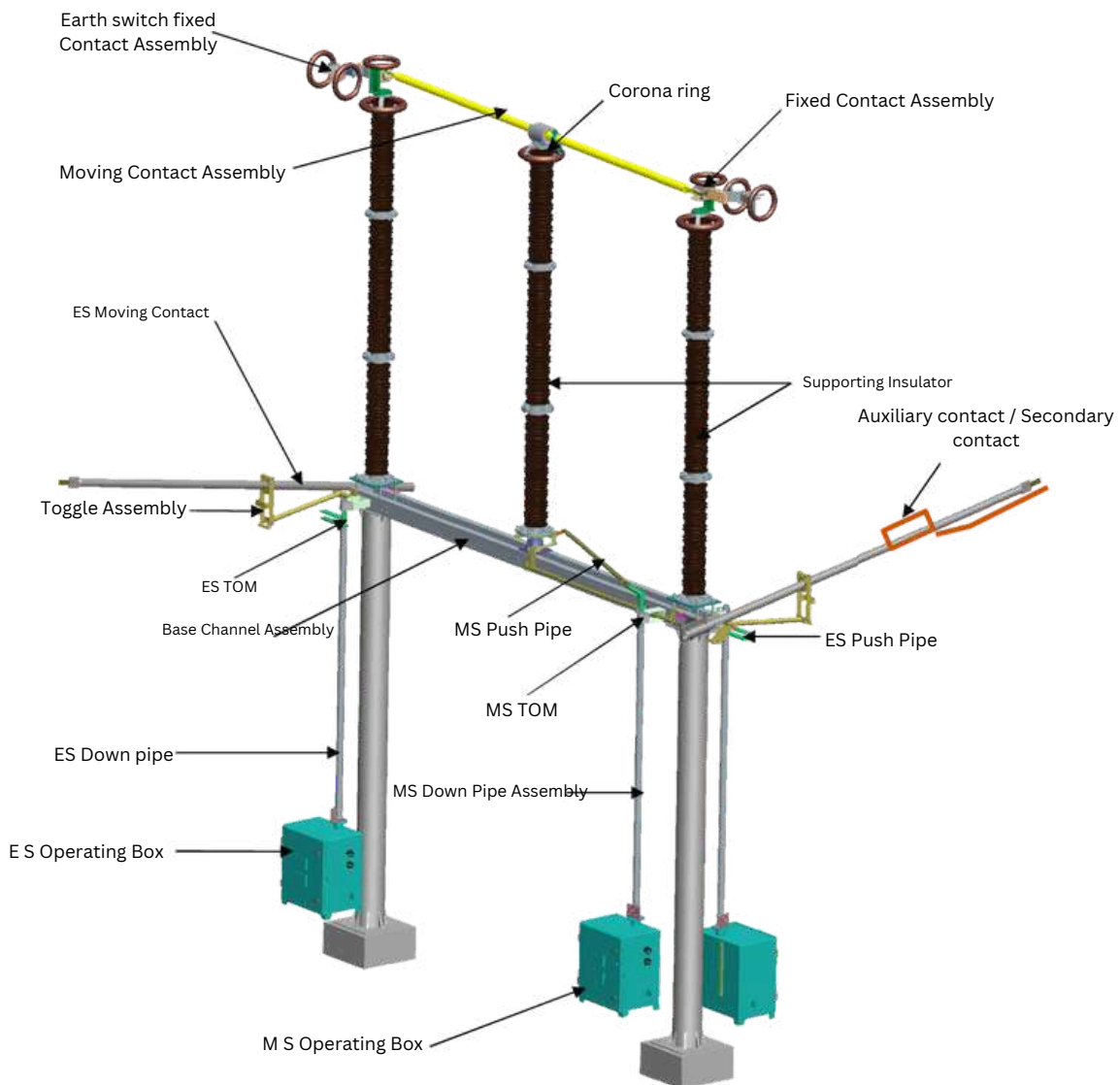




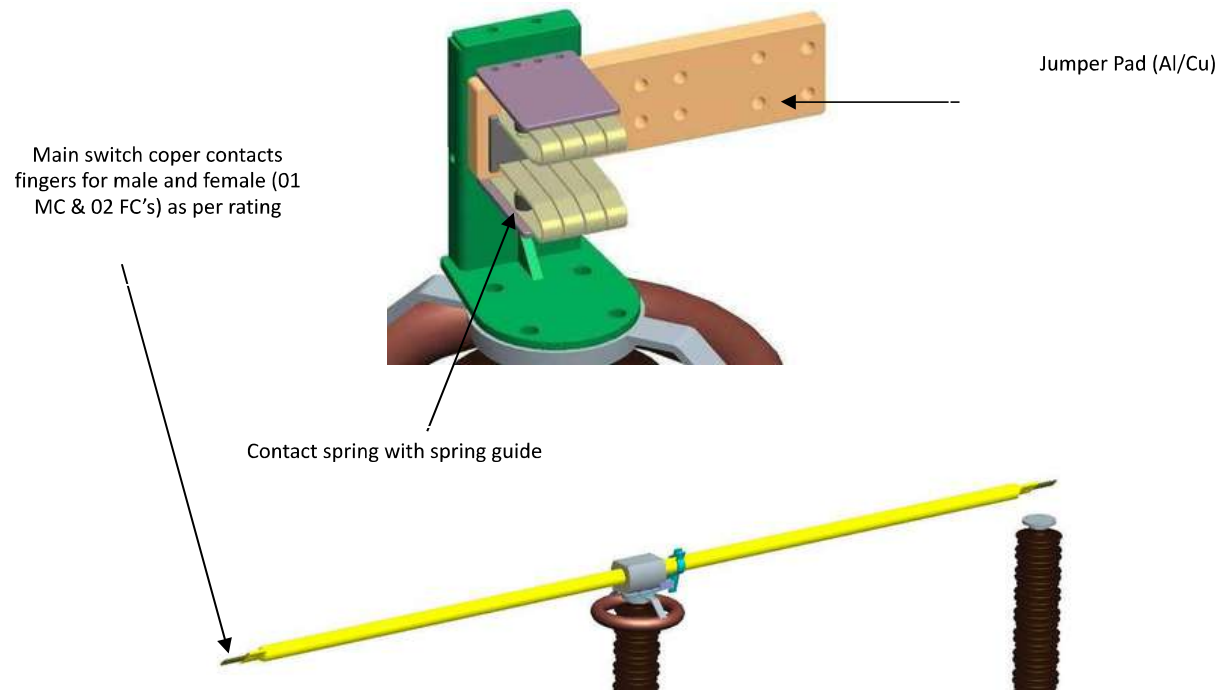
1.General

1.1 GA Drawing – Double Break

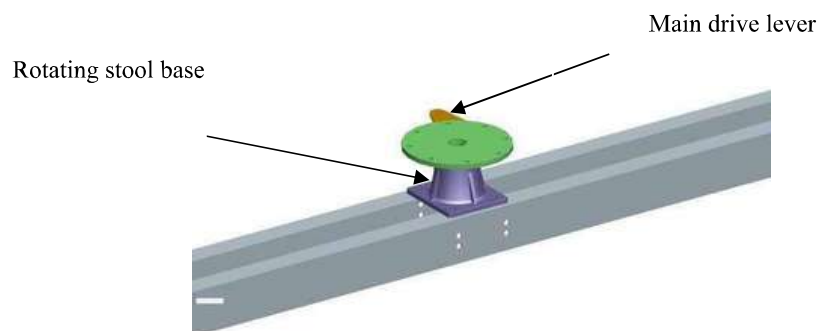
Double Break Isolator



DBR (400kV, 245kV & 145kV)



Contact spring with spring guide



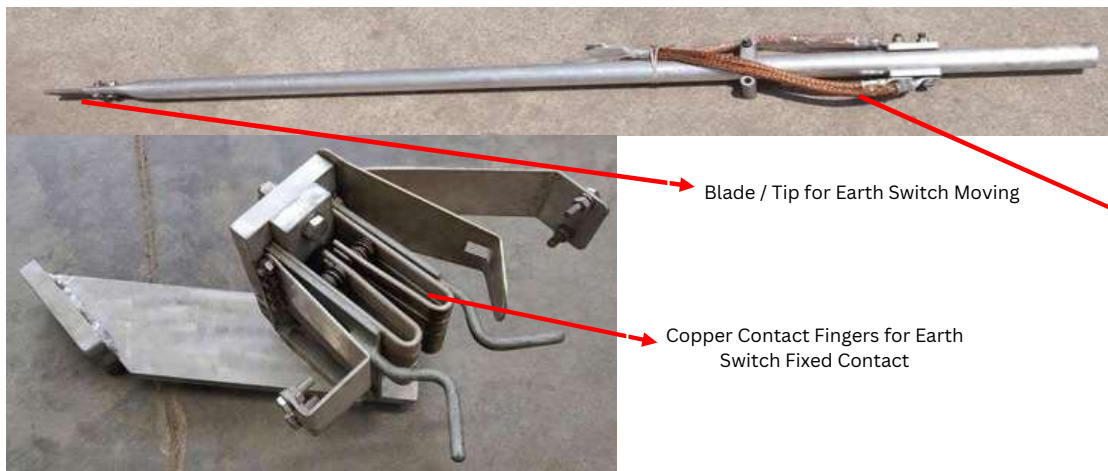


Copper Contact Fingers for Earth Switch Fixed Contact

Copper Contact Fingers – Sliding Design



Main Switch Fixed Contact assembly – Sliding Design



Blade / Tip for Earth Switch Moving

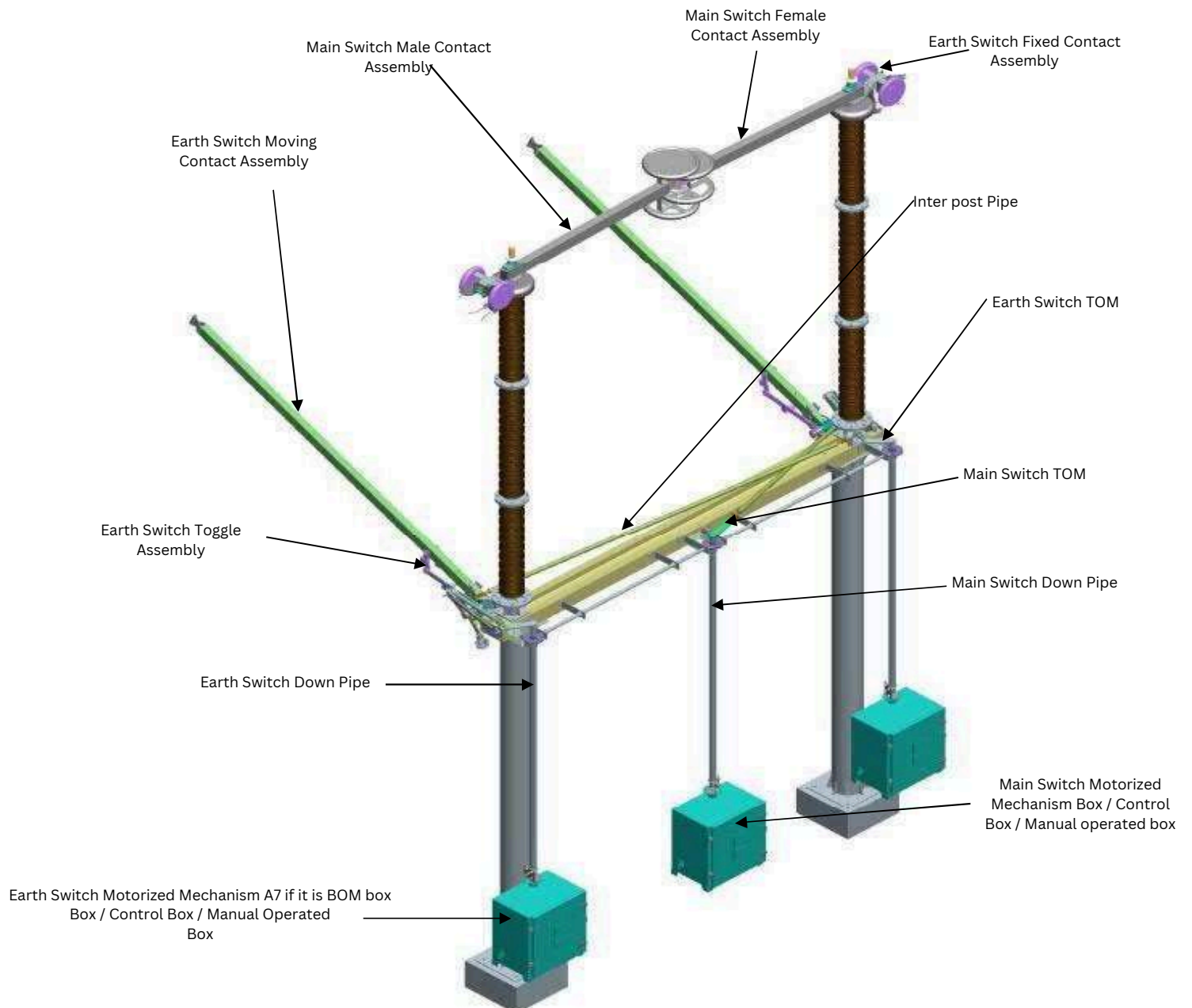
ESMC Cu Flexibles

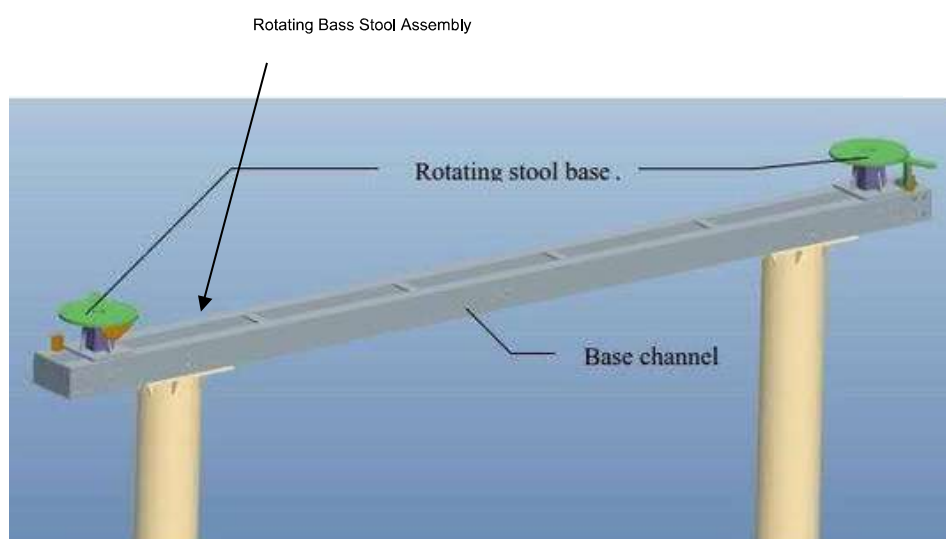
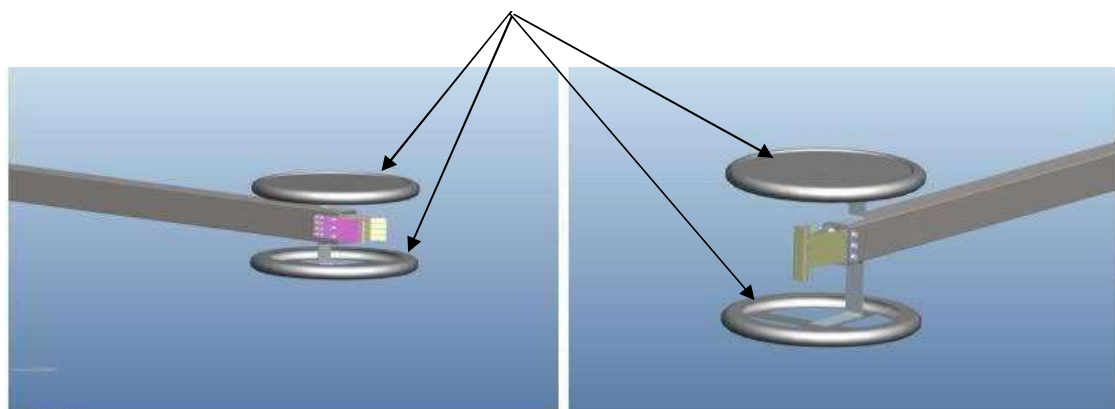
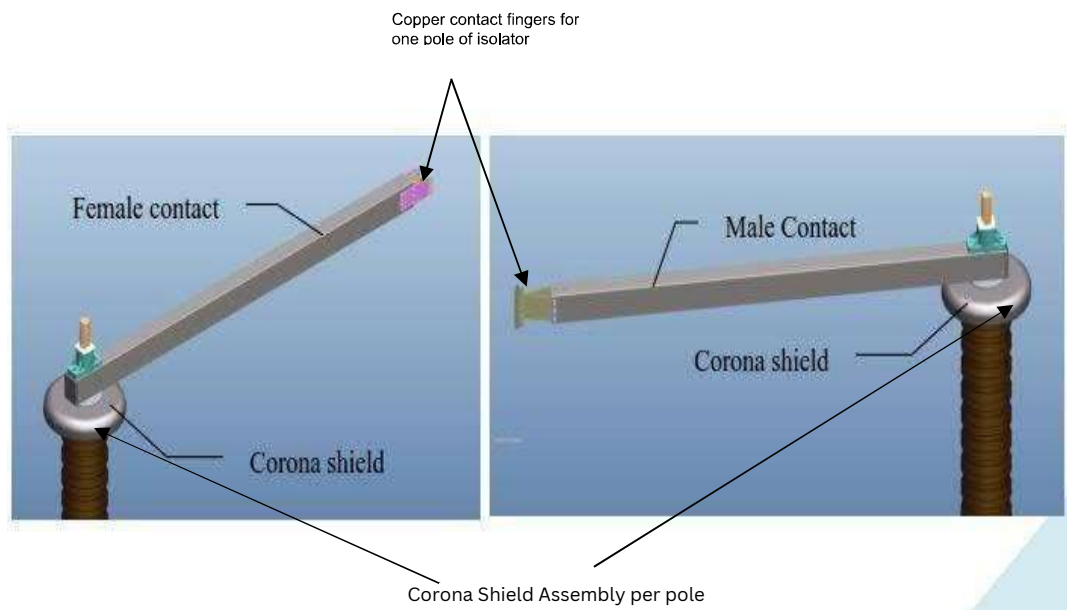
Copper Contact Fingers for Earth Switch Fixed Contact

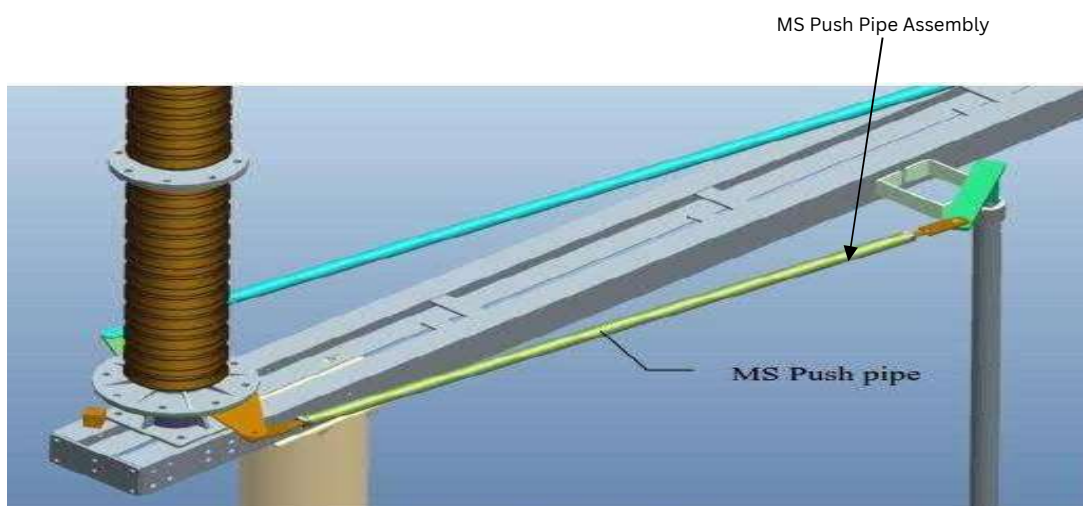
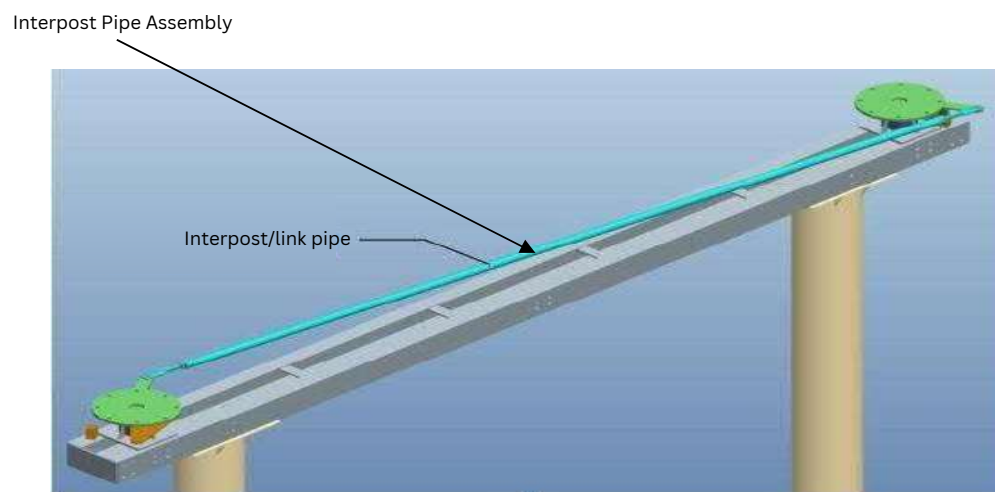
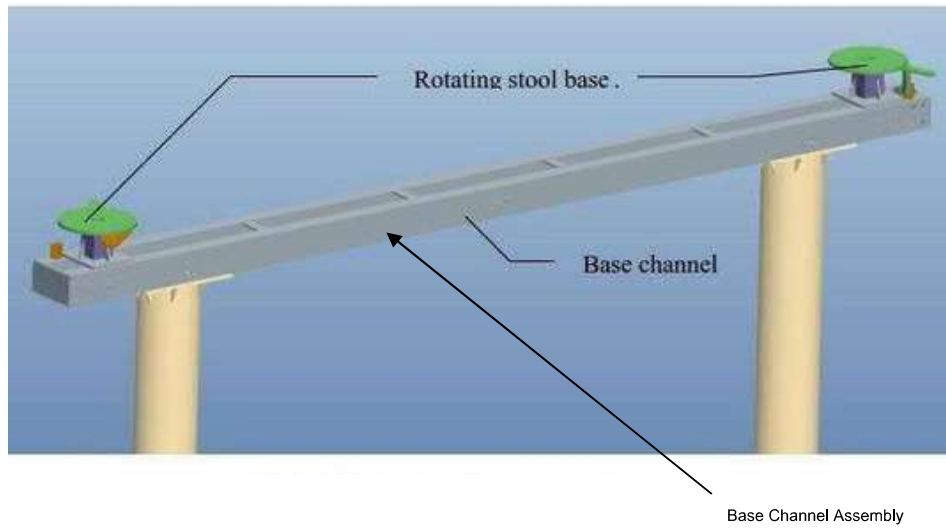


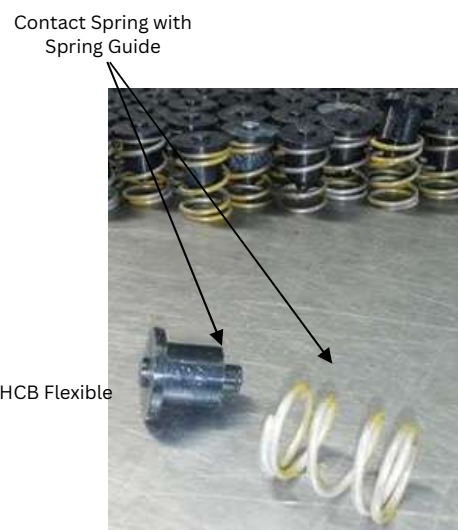
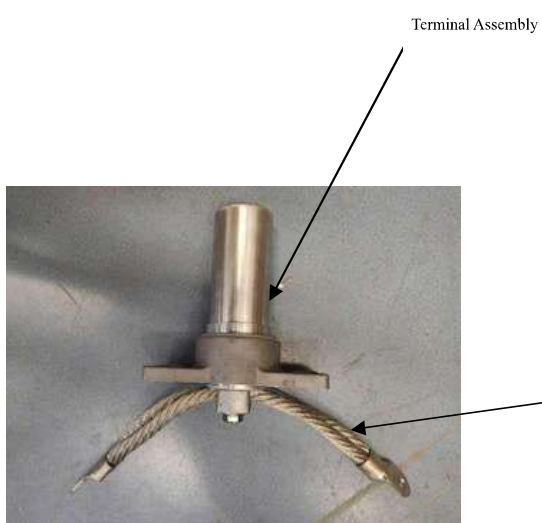
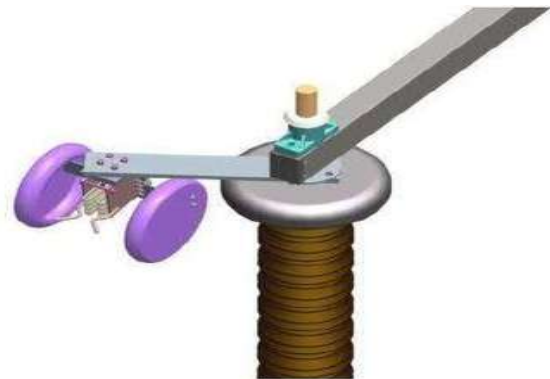
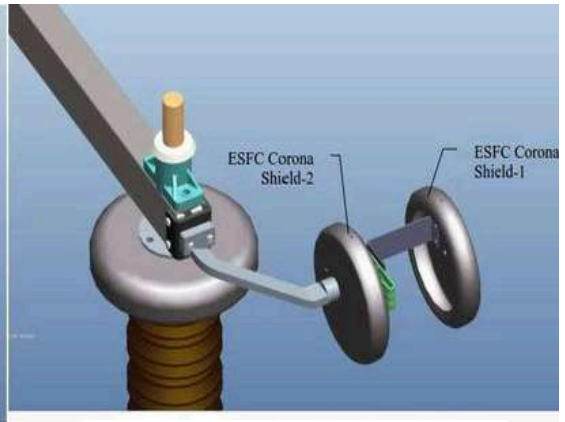
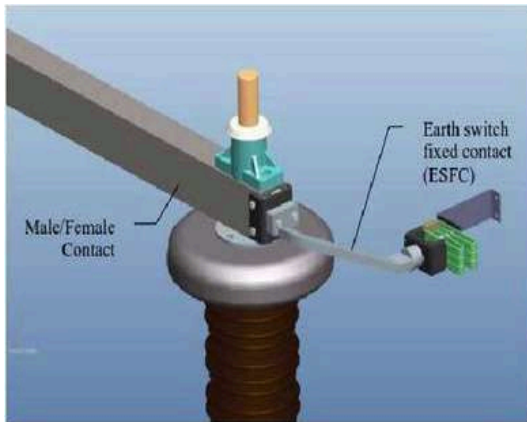
1.3 GA Drawing – Horizontal Center Break

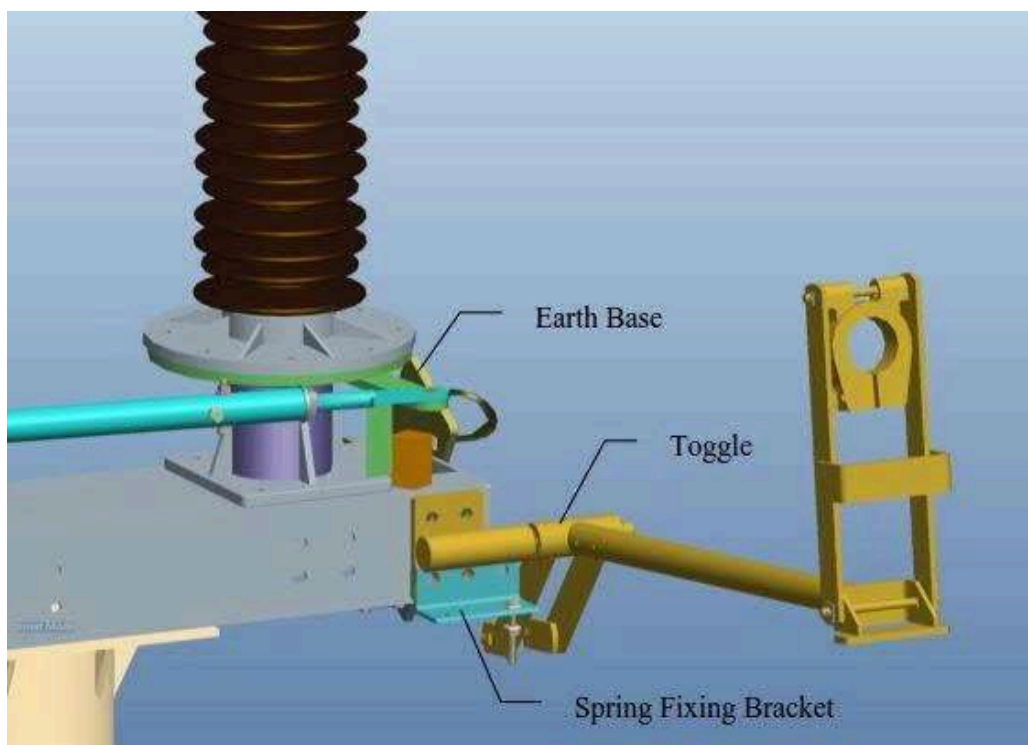
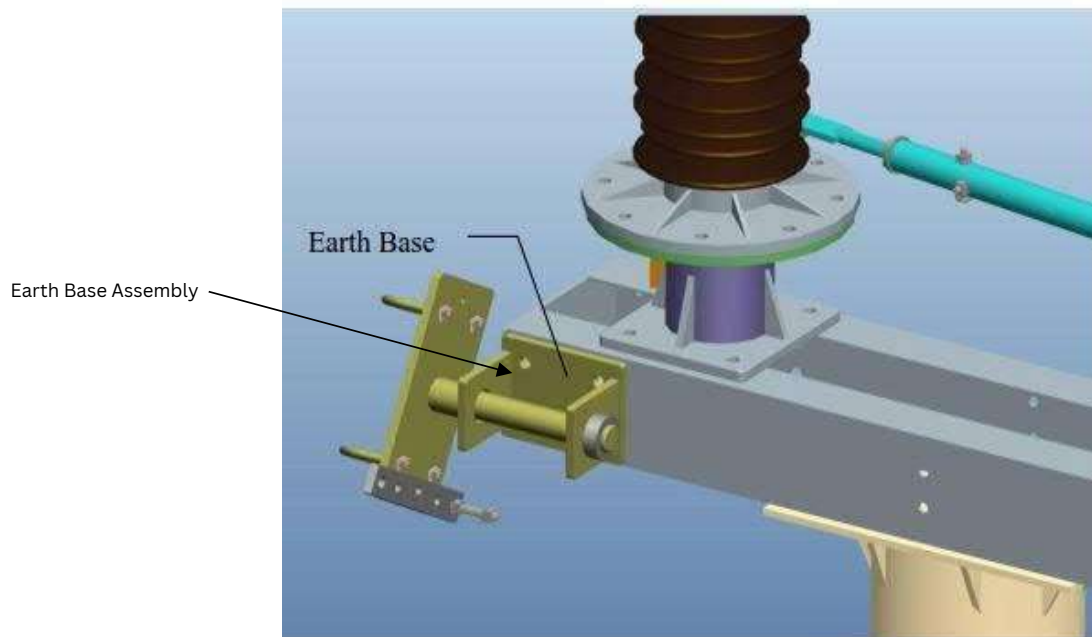
Horizontal Center Break

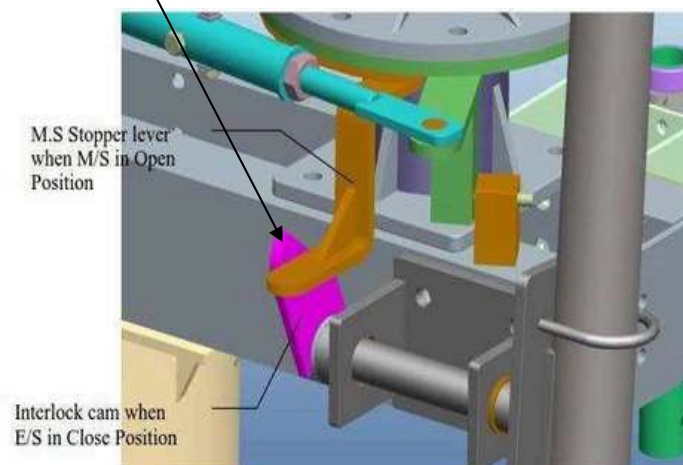
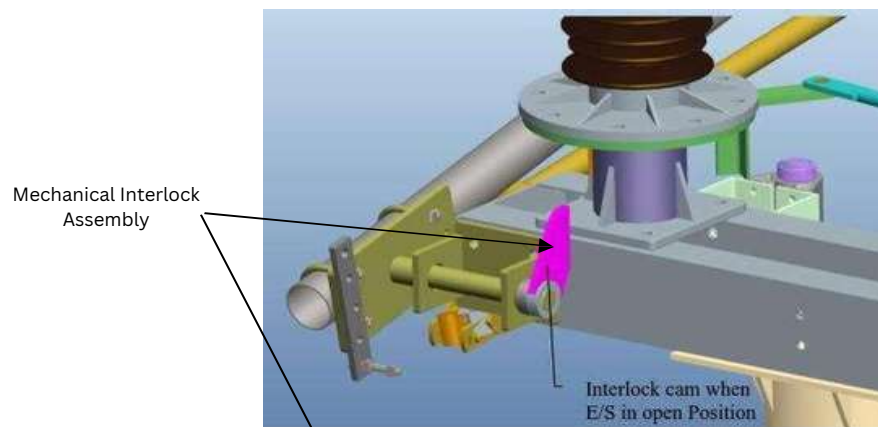








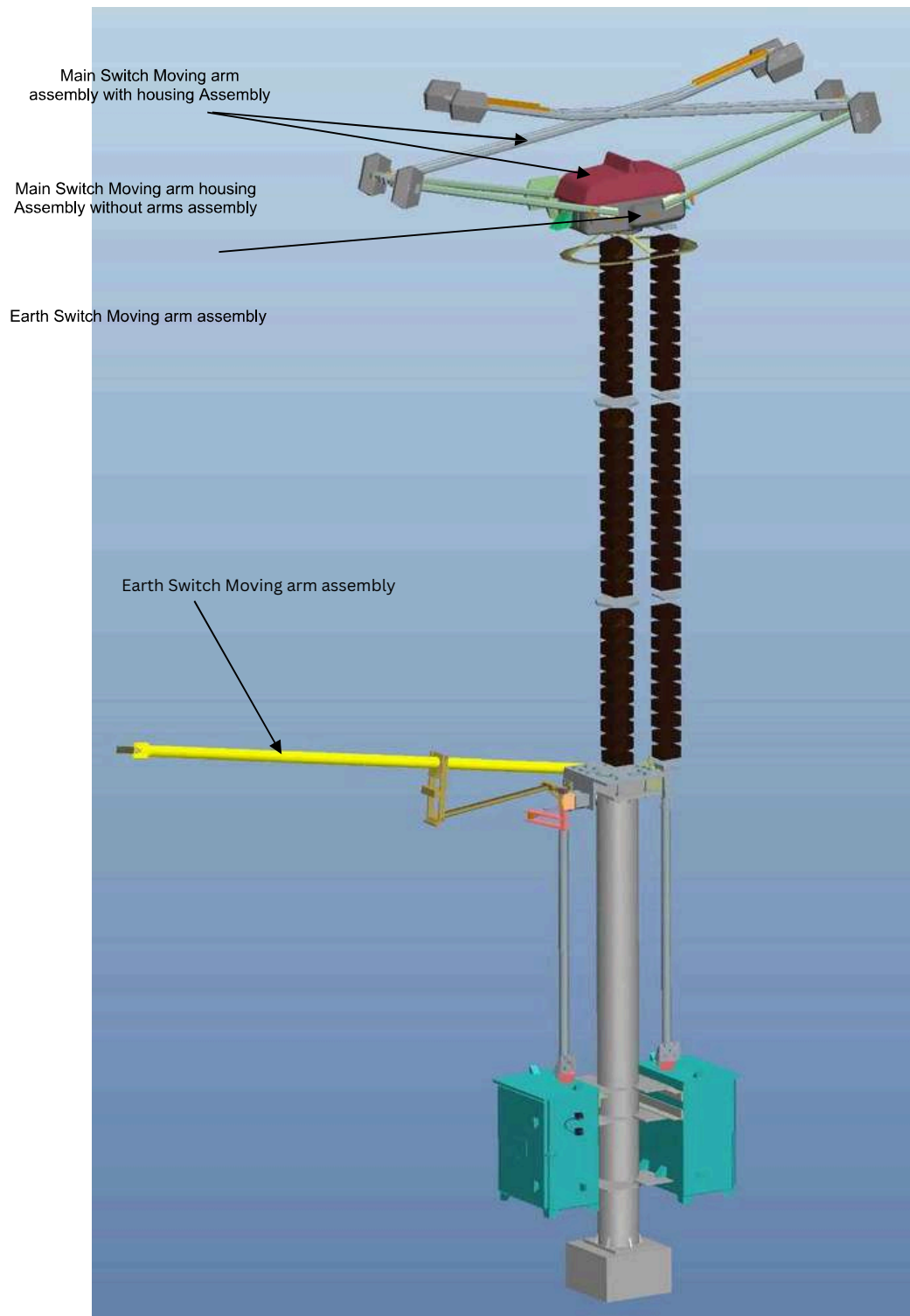


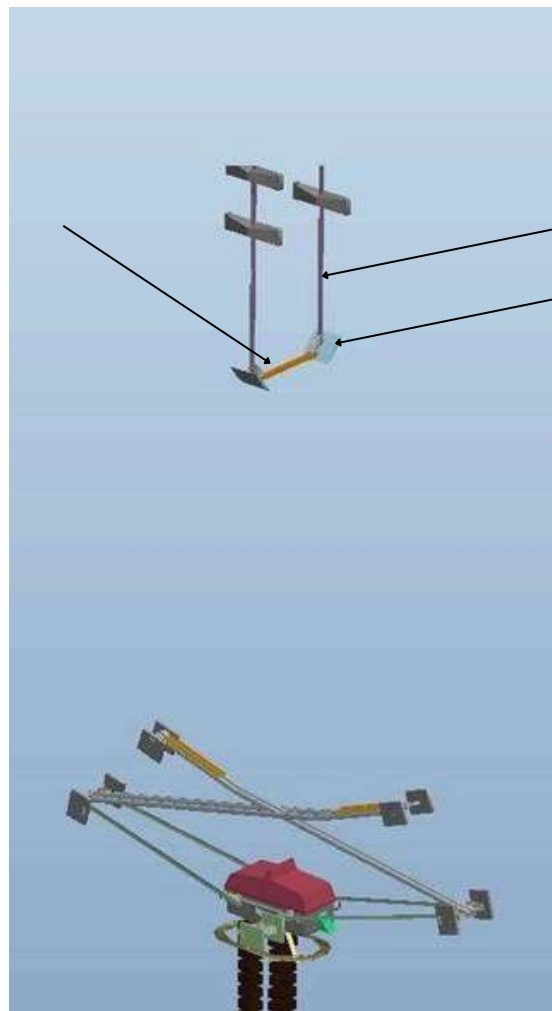
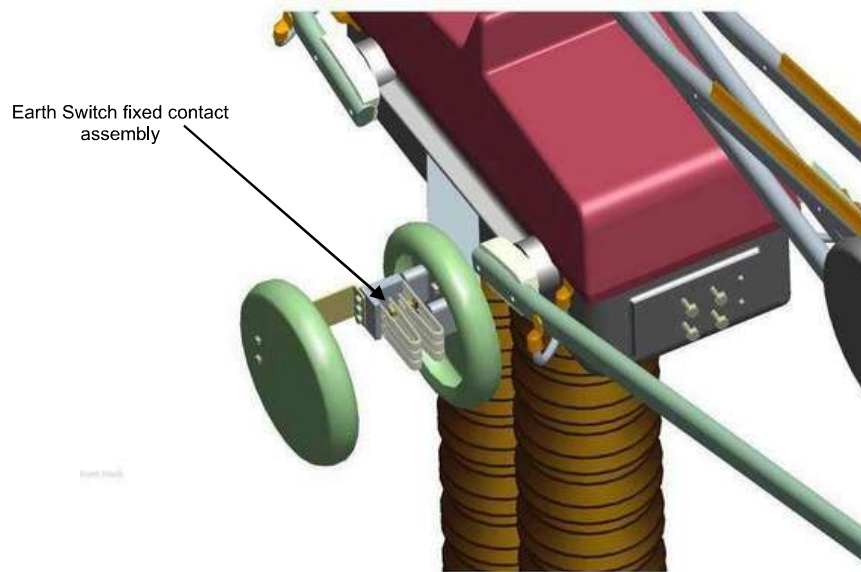


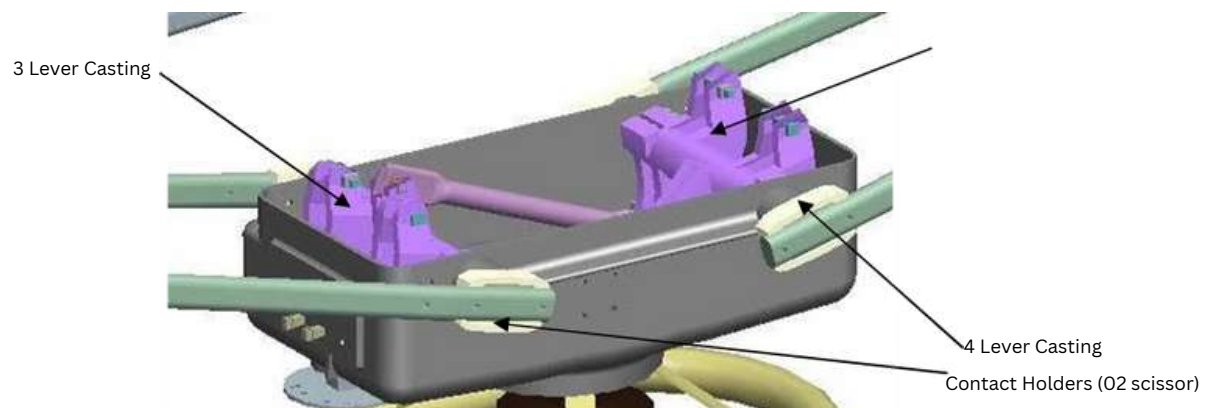
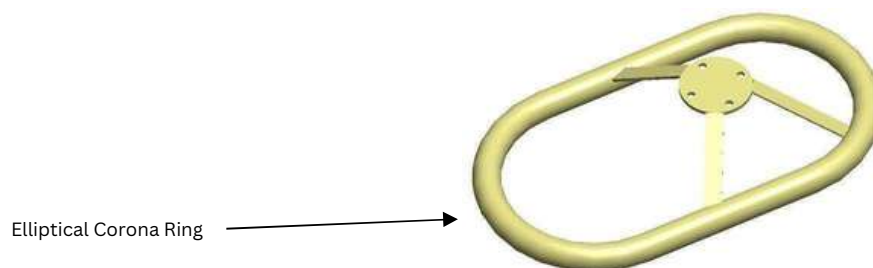
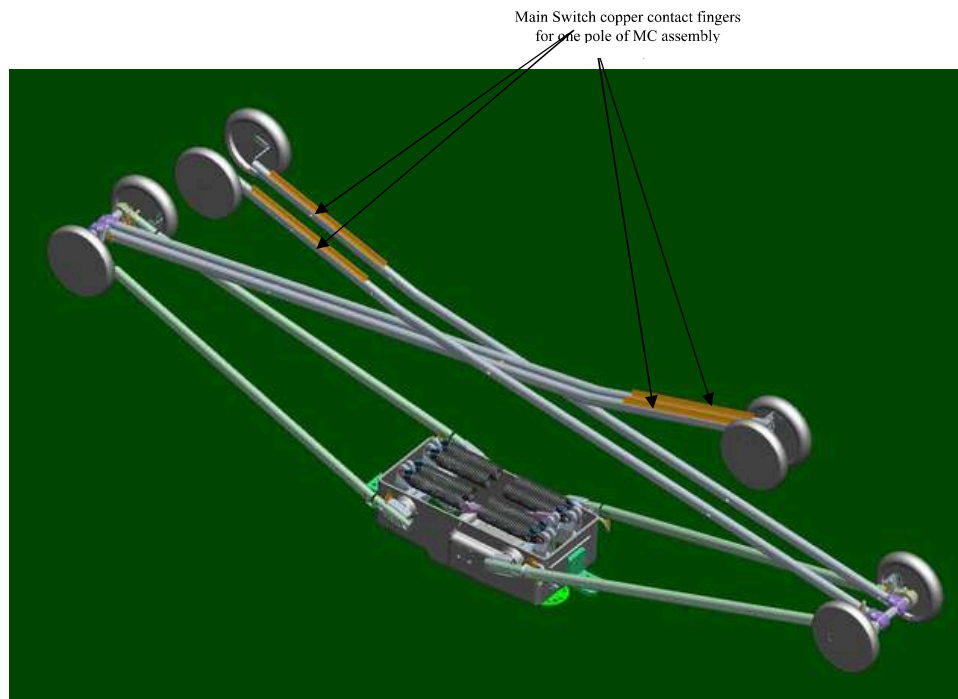


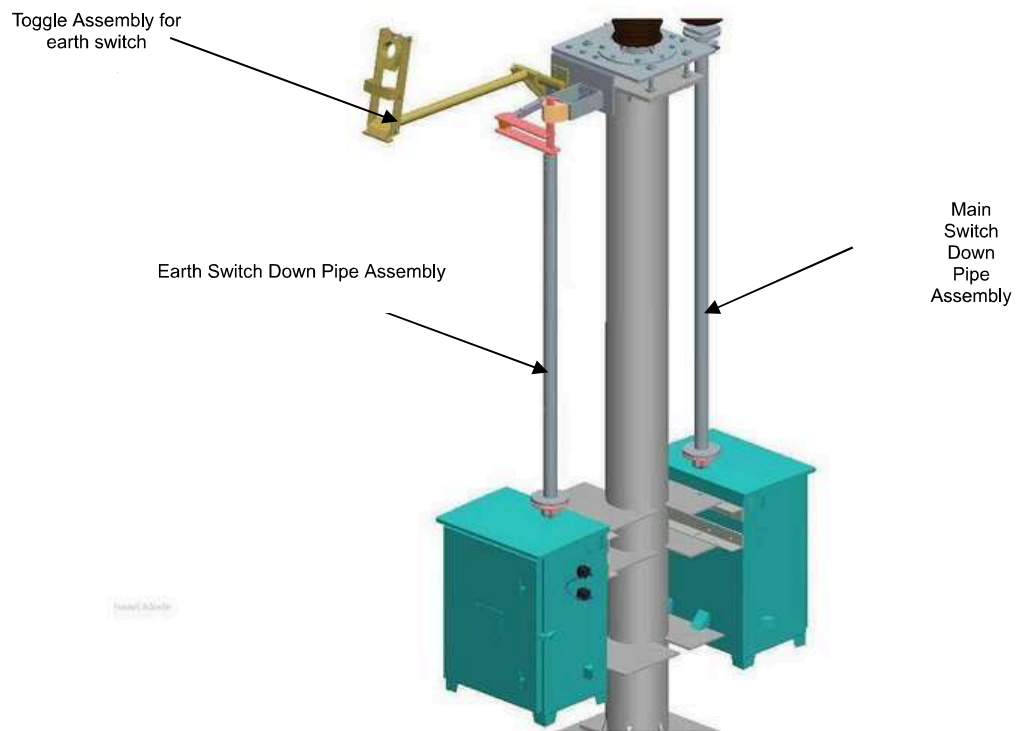
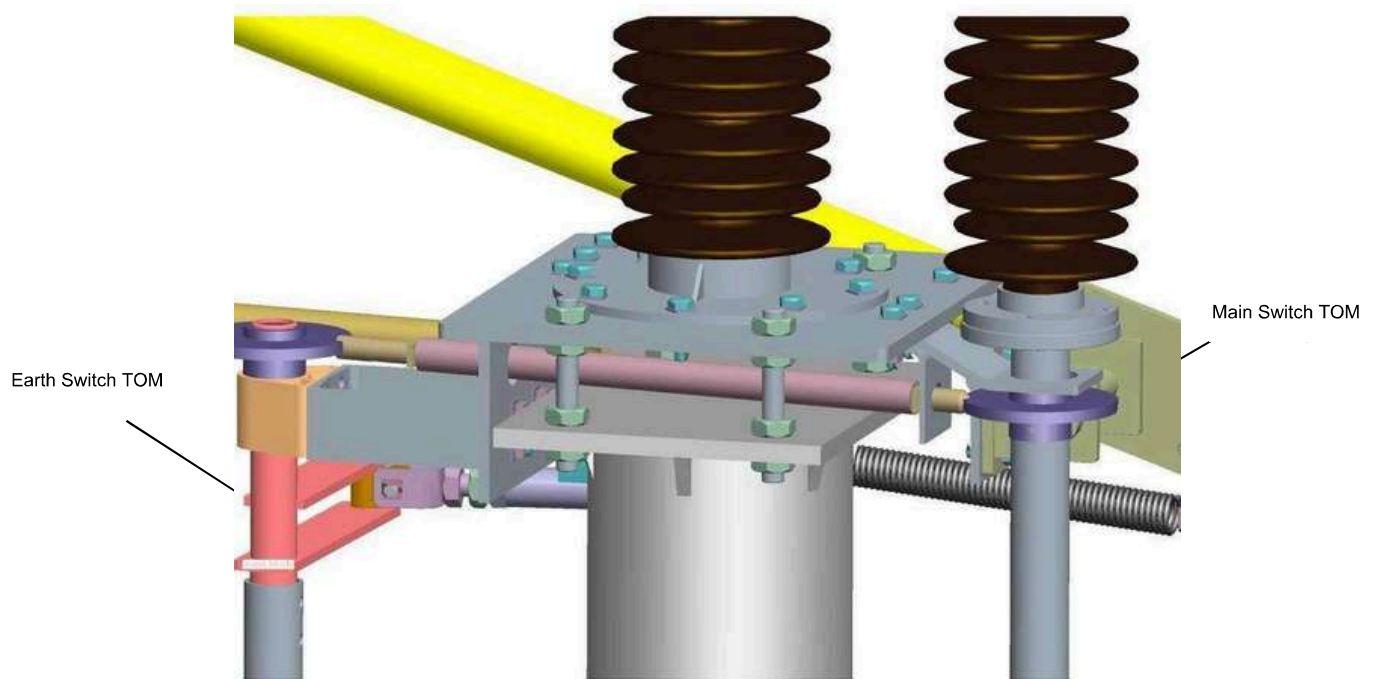
1.5 GA Drawing – Pantograph

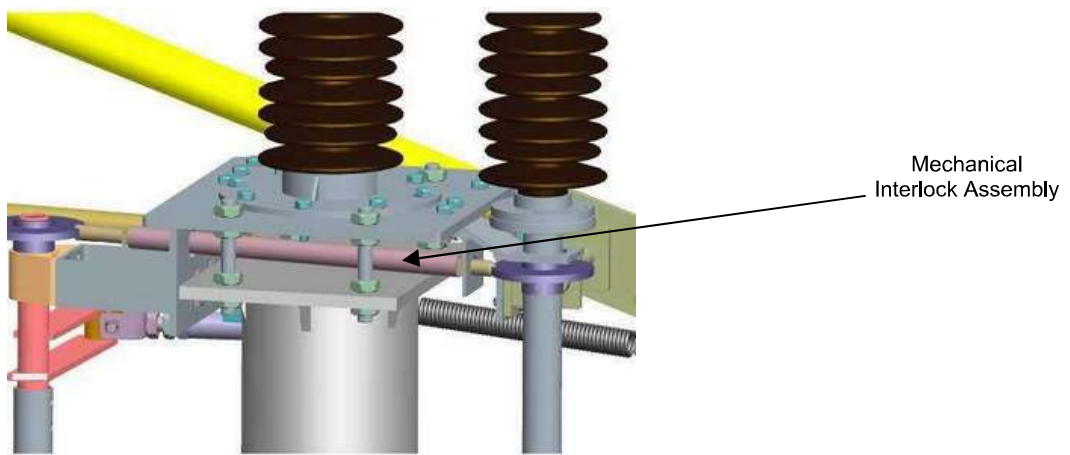
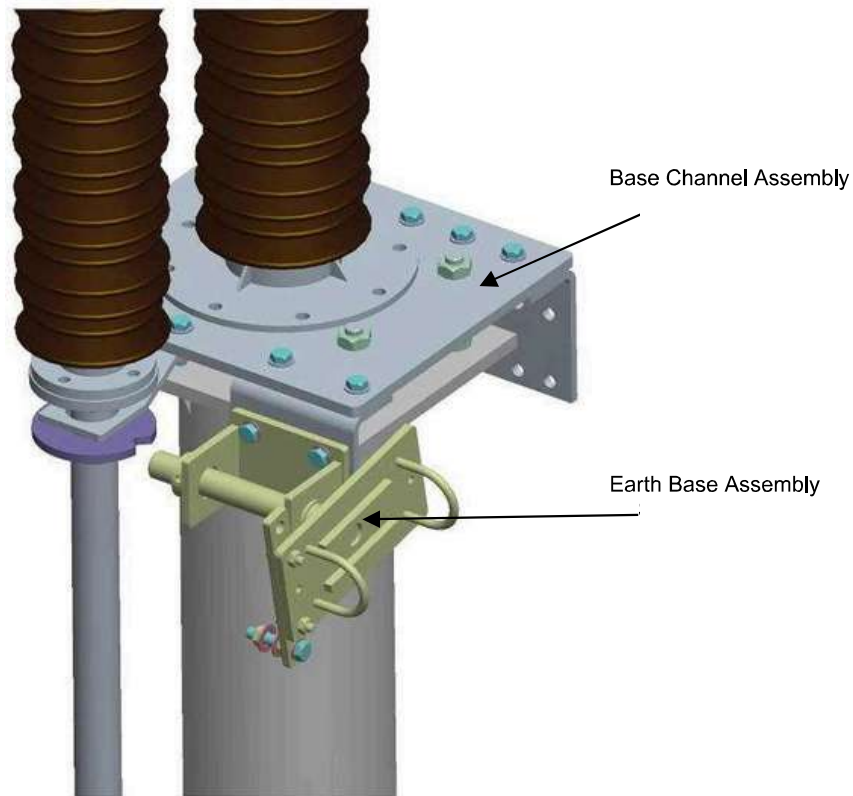
Pantograph





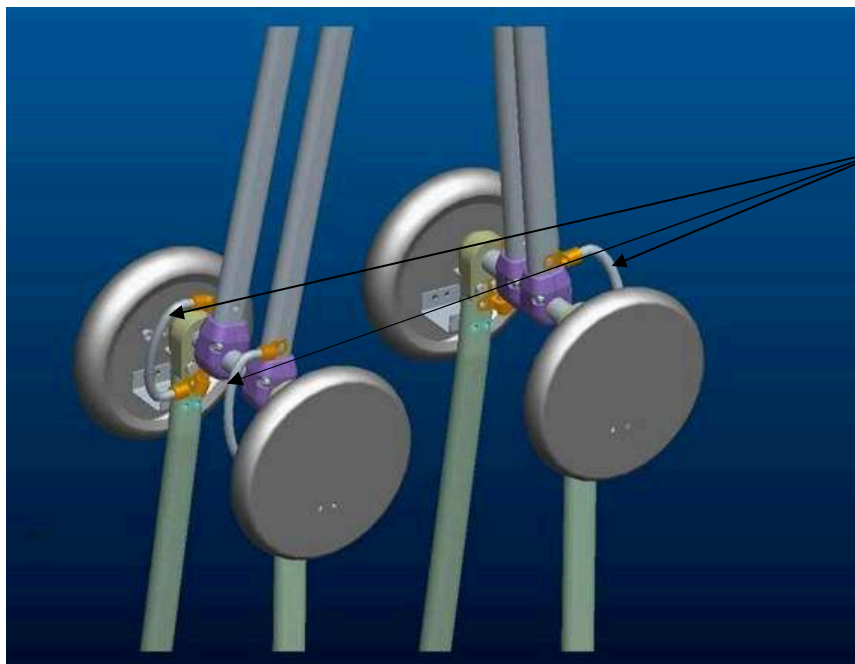








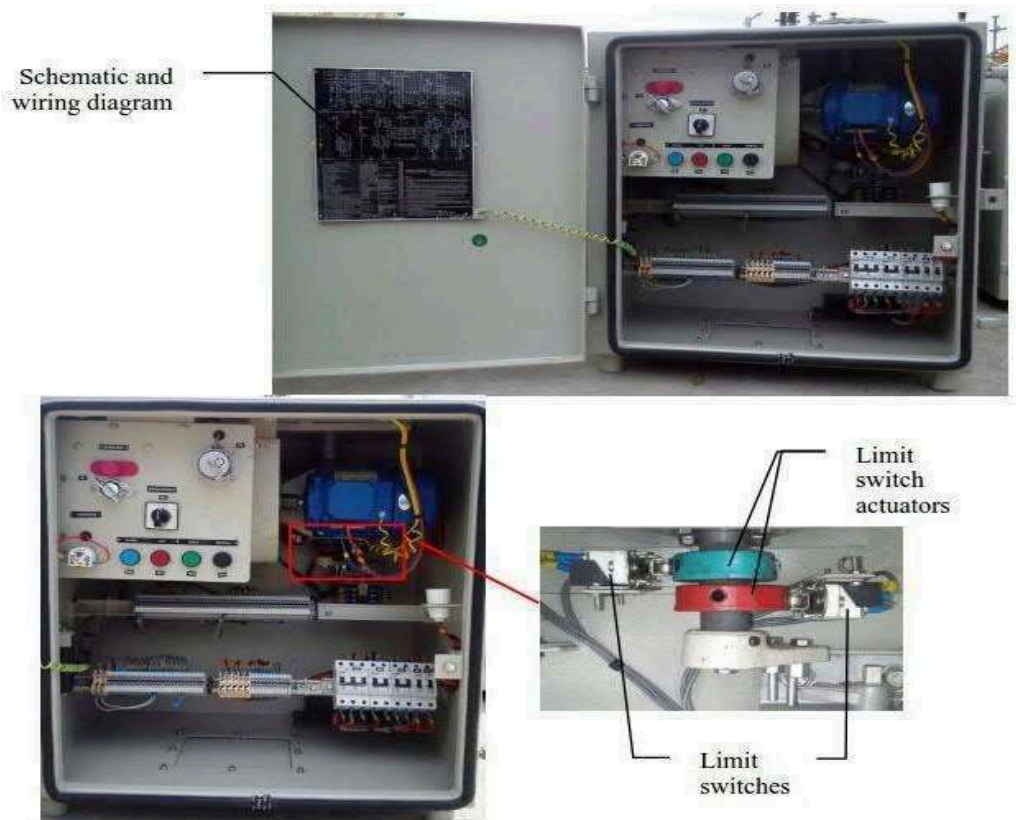
TENSION SPRING ASSLY



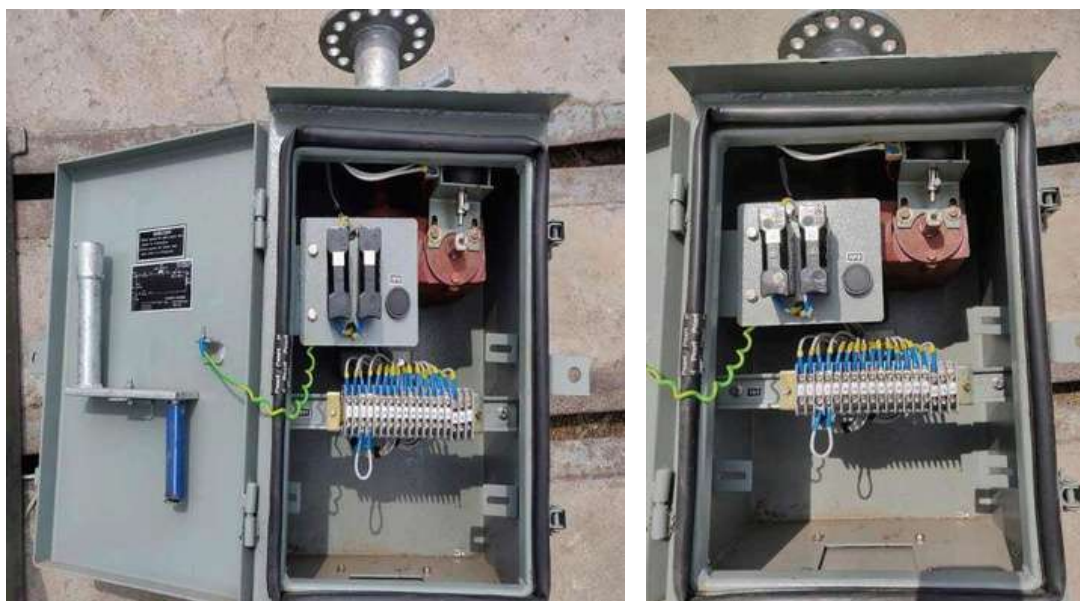
Flexibles Cu/ Tin Plated



Motor Operated Mechanism Control Box



Manual Operated Control Box





2. Recommended Spares of Double Break Isolator

2.1 Turn Twist Tip Design with Full Jaws (Elpro & Siemens)

Sr.No.	Description	UOM
1	Main Switch Moving Contact Assembly (01 Pole consists of 01 PCs of MC assembly)	Pole
2	Copper contact tips of main switch moving contact assembly (01 MC consists of 04 PCs of male Cu tips with fixing accessories)	Pole
3	Main Switch Fixed Contact Assembly (01 Pole consists of 02 PCs of FC assembly's)	Pole
4	Copper contact fingers / jaws (Full /big Jaws) of main switch fixed contact assembly (01 FC consists of 20x5mm and 32x5mm size Cu jaws with spring and spring guide) Quantity and size of jaws for 01 FC is depending on current rating	Pole
5	Earth Switch Moving Contact Assembly	Pole
6	Copper contact tips of earth switch moving contact assembly (01 ESMC consists of 01 PCs of male Cu tip with fixing accessories)	Pole



Sr.No.	Description	UOM
7	Earth Switch Fixed Contact Assembly	Pole
8	Copper contact fingers / jaws of earth switch fixed contact assembly (01 ESFC consists of 20x5mm size Cu jaws (Small Jaws) with spring and spring guide) Quantity of jaws for 01 ESFC is depending on current rating	Pole
9	Contact Spring with Spring Guide	Pole
10	Corona Rings / shields for One Pole of Isolator (01 Pole consists of 02 PCs for MC, 02 PCs for FC, 02 PCs for ESFC and 03 PCs for Insulators – Depending upon the approved drawings and ratings)	Pole



2.2 Turn Twist Blade Design with Semi Jaws (Siemens)

Sr.No.		UOM
1	Main Switch Moving Contact Assembly (01 Pole consists of 01 PCs of MC assembly)	Pole
2	Copper contact tips of main switch moving contact assembly (01 MC consists of 02 PCs of male Cu tips with fixing accessories)	Pole
3	Main Switch Fixed Contact Assembly (01 Pole consists of 02 PCs of FC assembly's)	Pole
4	Copper contact fingers / jaws (Small Jaws) of main switch fixed contact assembly (01 FC consists of 20x5mm size Cu jaws with spring and spring guide) Quantity of jaws for 01 FC is depending on current rating	Pole
5	Earth Switch Moving Contact Assembly	Pole
6	Copper contact tips of earth switch moving contact assembly (01 ESMC consists of 01 PCs of male Cu tip with fixing accessories)	Pole
7	Earth Switch Fixed Contact Assembly	Pole
8	Copper contact fingers / jaws of earth switch fixed contact assembly (01 ESFC consists of 20x5mm size Cu jaws (Small Jaws) with spring and spring guide) Quantity of jaws for 01 ESFC is depending on current rating	Pole
9	Contact Spring with Spring Guide	Pole
10	Corona Rings / shields for One Pole of Isolator (01 Pole consists of 02 PCs for MC, 02 PCs for FC, 02 PCs for ESFC and 03 PCs for Insulators – Depending upon the approved drawings and ratings)	Pole



3. Recommended Spares of Horizontal Center Break

3.1 Flat Spring Design (Elpro & Siemens)

S.No.	Description	UOM
1	Main switch moving contact arm assembly (01 Pole consists of 01 PCs of male moving arm and female moving arm assembly including mounting hardware)	Pole
2	Male copper contact tips for main switch male moving arm assembly (01 Pole of Male arm consists 02 PCs of male Cu tips with fixing accessories)	Pole
3	Female copper contact jaws / fingers for main switch female moving arm assembly (01 Pole of Female arm consists of 20x5mm size jaws with spring and spring guide) Quantity of jaws for 01 Female arm is depends on current rating	Pole
4	Terminal stems for main switch moving contact arm assembly (01 Pole consists of 02 PCs of Cu stems with Circlips)	Pole
5	Terminal jaws for main switch stem assembly (01 Pole consists of 04 PCs of flat jaws with flat spring and supporting plates and accessories)	Pole
6	Earth Switch Moving Contact Assembly	Pole
7	Copper contact tips for earth switch moving contact assembly (01 ESMC consists of 01 male Cu tip with fixing accessories)	Pole
8	Earth Switch Fixed Contact Assembly	Pole
9	Copper contact fingers / jaws for earth switch fixed contact assembly (01 ESFC consists of 20x5mm size Cu jaws (Small Jaws) with spring and spring guide) Quantity of jaws for 01 ESFC is depending on current rating	Pole
10	Contact Spring with Spring Guide	Pole
11	Corona Rings / shields for One Pole of Isolator (01 Pole consists of 02 PCs for MC, 02 PCs for FC, 02 PCs for ESFC and 02 PCs for Insulators – Depending upon the approved drawings and ratings)	Pole



3.2 Tulip Design (Siemens)

Sr.No.	Description	UOM
1	Main switch moving contact arm assembly (01 Pole consists of 01 PCs of male moving arm and female moving arm assembly including mounting hardware)	Pole
2	Male copper contact tips for main switch male moving arm assembly (01 Pole of Male arm consists 02 PCs of male Cu tips with fixing accessories)	Pole
3	Female copper contact jaws / fingers for main switch female moving arm assembly (01 Pole of Female arm consists of 20x5mm size jaws with spring and spring guide) Quantity of jaws for 01 Female arm is depends on current rating	Pole
4	Terminal stem housing assembly for main switch moving contact arms (01 Pole consists of 02 PCs of Al terminal stem housing with mounting hardware)	Pole
5	Earth Switch Moving Contact Assembly	Pole
6	Copper contact tips for earth switch moving contact assembly (01 ESMC consists of 01 male Cu tip with fixing accessories)	Pole
7	Earth Switch Fixed Contact Assembly	Pole
8	Copper contact fingers / jaws for earth switch fixed contact assembly (01 ESFC consists of 20x5mm size Cu jaws (Small Jaws) with spring and spring guide) Quantity of jaws for 01 ESFC is depending on current rating	Pole
9	Contact Spring with Spring Guide	Pole
10	Corona Rings / shields for One Pole of Isolator (01 Pole consists of 02 PCs for MC, 02 PCs for FC, 02 PCs for ESFC and 02 PCs for Insulators – Depending upon the approved drawings and ratings)	Pole



3.3 Flexible Design (Siemens)

Sr.No.	Description	UOM
1	Main switch moving contact arm assembly (01 Pole consists of 01 PCs of male moving arm and female moving arm assembly including mounting hardware)	Pole
2	Male copper contact tips for main switch male moving arm assembly (01 Pole of Male arm consists 02 PCs of male Cu tips with fixing accessories)	Pole
3	Female copper contact jaws / fingers for main switch female moving arm assembly (01 Pole of Female arm consists of 20x5mm size jaws with spring and spring guide) Quantity of jaws for 01 Female arm is depends on current rating	Pole
4	Terminal stem housing assembly with flexibles for main switch moving contact arms (01 Pole consists of 02 PCs of Al terminal stem housing with mounting hardware)	Pole
5	Earth Switch Moving Contact Assembly	Pole
6	Copper contact tips for earth switch moving contact assembly (01 ESMC consists of 01 male Cu tip with fixing accessories)	Pole
7	Earth Switch Fixed Contact Assembly	Pole
8	Copper contact fingers / jaws for earth switch fixed contact assembly (01 ESFC consists of 20x5mm size Cu jaws (Small Jaws) with spring and spring guide) Quantity of jaws for 01 ESFC is depending on current rating	Pole
9	Contact Spring with Spring Guide	Pole
10	Corona Rings / shields for One Pole of Isolator (01 Pole consists of 02 PCs for MC, 02 PCs for FC, 02 PCs for ESFC and 02 PCs for Insulators – Depending upon the approved drawings and ratings)	Pole



4. Recommended Spares of Pantograph Isolator

4.1 Old Design – Double Scissor(Elpro & Siemens)

Sr.No.	Description	UOM
1	Old Design moving contact assembly is obsolete, and the only option is to retrofit the old double scissor MC assembly with new single scissor MC assembly (01 Pole consists of 01 PCs of MC assembly)	Pole
2	Male copper contact tips for main switch male moving arm assembly (01 Pole of Male arm consists 04 PCs of male Cu tips with fixing accessories)	Pole
3	Main switch fixed contact assembly including Cu rod, downpipes and connecting pads	Pole
4	Copper contact rod for fixed contact assembly	Pole
5	Earth Switch Moving Contact Assembly	Pole
6	Copper contact tips for earth switch moving contact assembly (01 ESMC consists of 01 male Cu tip with fixing accessories)	Pole
7	Earth Switch Fixed Contact Assembly	Pole
8	Copper contact fingers / jaws for earth switch fixed contact assembly (01 ESFC consists of 20x5mm size Cu jaws (Small Jaws) with spring and spring guide) Quantity of jaws for 01 ESFC is depending on current rating	Pole
9	Copper Flexibles with Tin plated (01 Pole consists of 24 PCs)	Pole
10	Compound Springs	Pole
11	Corona Rings / shields for One Pole of Isolator (01 Pole consists of 08 PCs for MC, 02 PCs for FC, 02 PCs for ESFC and 01 PCs for Insulators – Depending upon the approved drawings and ratings)	Pole



4.2 New Design – Single Scissor (Elpro & Siemens)

Sr.No.	Description	UOM
1	Main switch moving contact complete assembly (01 Pole consists of 01 PCs of MC assembly)	Pole
2	Male copper contact tips for main switch male moving arm assembly (01 Pole of Male arm consists 04 PCs of male Cu tips with fixing accessories)	Pole
3	Main switch housing assembly	Pole
4	Main switch fixed contact assembly including Cu rod, downpipes and connecting pads	Pole
5	Copper contact rod for fixed contact assembly	Pole
6	Earth Switch Moving Contact Assembly	Pole
7	Copper contact tips for earth switch moving contact assembly (01 ESMC consists of 01 male Cu tip with fixing accessories)	Pole
8	Earth Switch Fixed Contact Assembly	Pole
9	Copper contact fingers / jaws for earth switch fixed contact assembly (01 ESFC consists of 20x5mm size Cu jaws (Small Jaws) with spring and spring guide) Quantity of jaws for 01 ESFC is depending on current rating	Pole
10	Copper Flexibles with Tin Plated (01 Pole consists of 16 PCs)	Pole
11	Compound Springs	Pole
12	Corona Rings / shields for One Pole of Isolator (01 Pole consists of 08 PCs for MC, 02 PCs for FC, 02 PCs for ESFC and 01 PCs for Insulators – Depending upon the approved drawings and ratings)	Pole



5. Recommended Spares of Control Box / Panel

5.1 Main & Earth Switch Motor & Manual Box (Elpro & Siemens)

Sr.No.	Description	UOM
1	Main switch operating mechanism box (Motor (or) Manual) / Mechanical gang (or) Electrical gang	No's
2	Earth switch operating mechanism box (Motor (or) Manual) / Mechanical gang (or) Electrical gang	No's
3	1 HP Gear Box Assembly with Motor (Side Mounted) is obsolete, the only option is to replace complete control box with latest design	No's
4	0.5 HP Gear Box Assembly with Motor (Side Mounted)	No's
5	0.5 HP Gear Box Assembly with Motor (Top Mounted)	No's
6	0.5 HP Motor without Pinion	No's
7	1 HP Motor without Pinion	No's
8	Overload Relay	No's
9	Contactor (Close / Open)	No's
10	Interlocking Contactor	No's



Sr.No.	Description	UOM
11	Limit Switch - Right	No's
12	Limit Switch - Left	No's
13	Auxiliary Switch (Till 14NO+14NC)	No's
14	Timer Range: 0-180 Secs	No's
15	Heater	No's
16	Solenoid Coil with Plunger for MOM Box	No's
17	Solenoid Coil with Plunger for BOM Box	No's
18	Master - Individual Selector Switch	No's
19	Local - Remote - Manual Switch	No's