Green Innovators of Innovation

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GIS

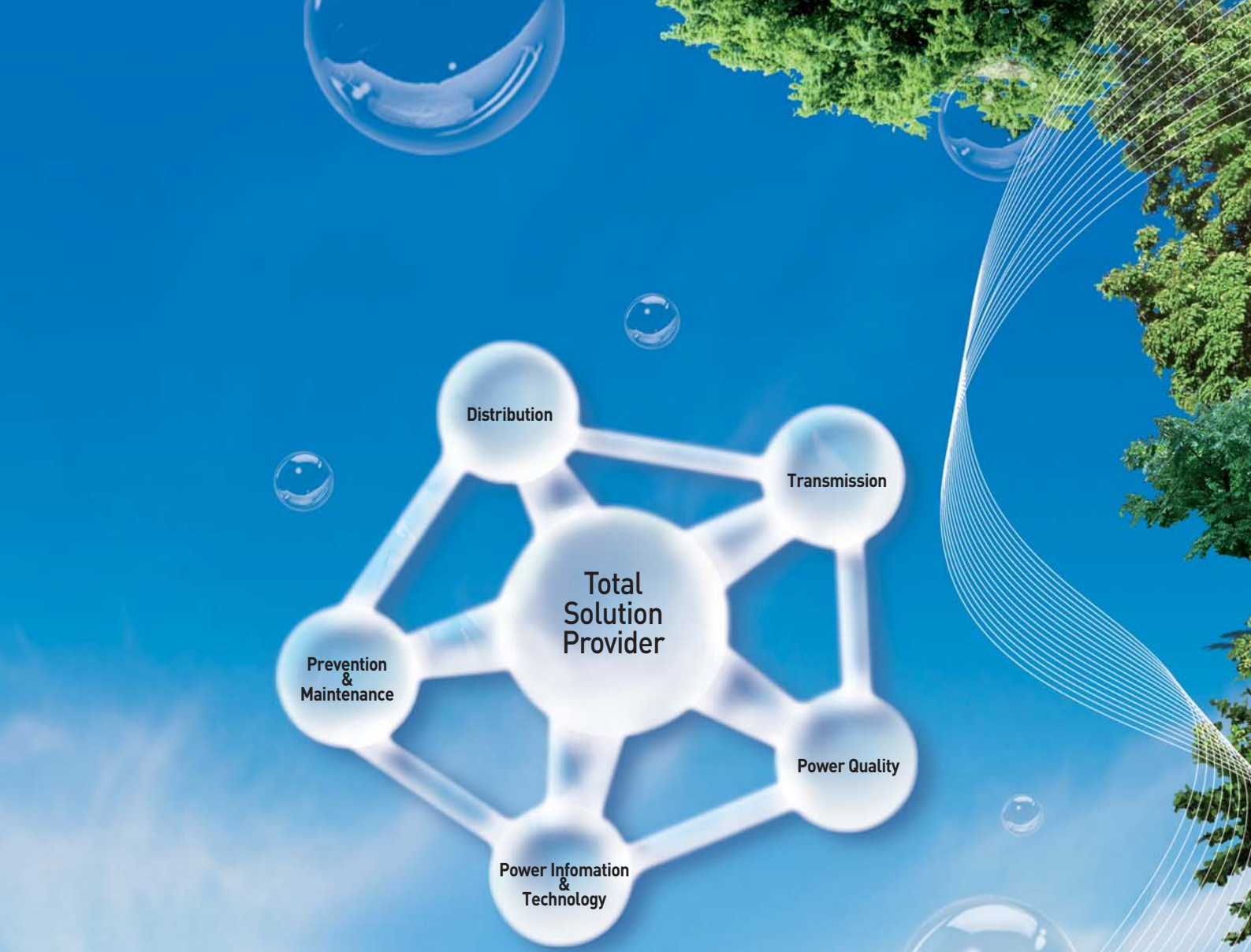
Gas Insulated Switchgear

LSIS who has been a leader in electricity and automation in the fields of industry as a consequence of developing state-of-the-art technology, presents customer' desiring new technology which will change our future life through our professional & continuous efforts.

LSIS has been a leader of development of industry and best partner to improve productivity for her customers by supplying reliable and stable energy

LSIS is producing GIS, which is one of the major equipment used in the high voltage substation in densely cities , and performing turnkey based transmission line as well as outdoor & indoor substation construction thorough its accumulated knowledge and experiences. LSIS is developing and presenting world best products through dedicated engineers' aggressive and continuous R&D.

ISO14001, ISO9001, KERI



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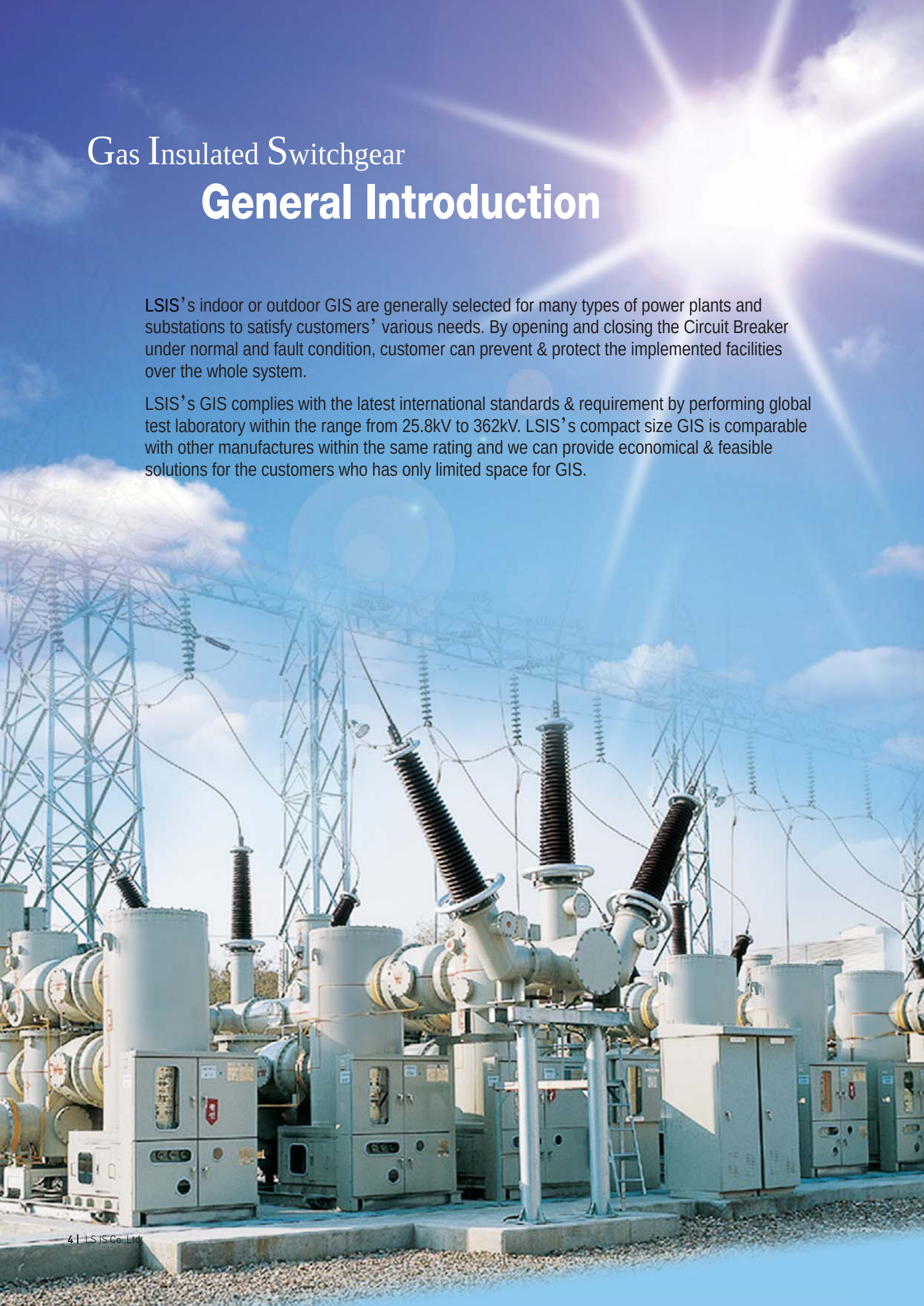
Gas Insulated Switchgear

General Introduction

LSIS's indoor or outdoor GIS are generally selected for many types of power plants and substations to satisfy customers' various needs. By opening and closing the Circuit Breaker under normal and fault condition, customer can prevent & protect the implemented facilities over the whole system.

LSIS's GIS complies with the latest international standards & requirement by performing global test laboratory within the range from 25.8kV to 362kV. LSIS's compact size GIS is comparable with other manufactures within the same rating and we can provide economical & feasible solutions for the customers who has only limited space for GIS.



Gas Insulated Switchgear

Design Concept and Advantages

Economical efficiency

Space-saving compact and modular type GIS has been possibly developed through our most optimal constructional, dielectrical design based on our internationally recognized high technology and engineering. Under such a design concepts, LSIS' s GIS is just right for the customers who have only limited area for substations or inside the densely populated cities. In conclusion, LSIS offers customers the most efficient and economical solutions.

High Reliability and Safety

Since the main parts of switchgear and SF6 Gas are completely sealed in metal enclosure, GIS is less affected from environmental pollution, climatic changes and dielectric deterioration in consequence of time operation than previous conventional type. The diffusion of accident can be prevented by robust gas barrier in case where there is a fault occurs inside the GIS.
Completely earthed metal enclosure and encapsulated controlling lever prevent any accidents for the operators and others in the vicinity of the switchgear. Any mal-operation caused by operators or ambient climate conditions can be prevented by interlocked system.

Facilitates installation, maintenance & repair

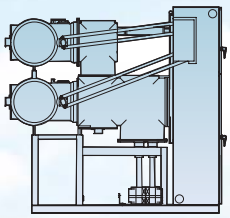
Compact design makes it convenient to deliver GIS to the site. The installation period is shortened because it is easy enough to connect each modules for completion of installation. Easy extension work can be performed without any interruption of electric power by adopting modular design. All of repair works and inspections are being on the ground level. It is possible to maintain and repair during live condition of GIS as main parts of GIS are tightly encapsulated with SF6 gas without any influence of ambient environment. Especially, LSIS GIS adopts the hydraulic operating method, it is not necessary to do periodic inspections as air compressor type does. LSIS GIS has been developed toward the design concept for man free, repair free and maintenance free.

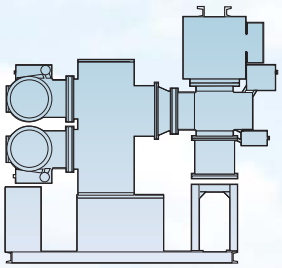
Strict Quality Control and Environment-friendly products

Through ERP (Enterprise Resource Planning) program and Quality System(ISO 9001), LSIS strictly control the quality of GIS and maintain best delivery service to the customers. LSIS adopts procedures for production, delivery and technical service which are fully environment-friendly under control of ISO 14001 for our future generation.

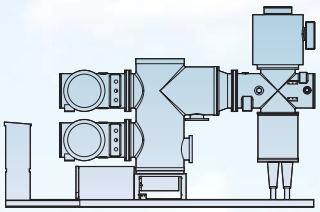
Gas Insulated Switchgear

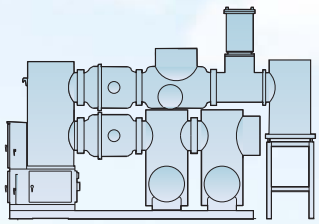
Technical Data

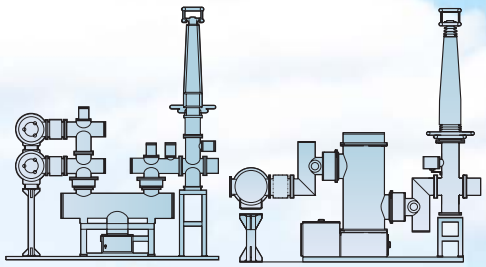




Item		Unit	GESG0225	GESG0320	GESG0720	GESG0740
Rated Voltage		kV, rms	25.8	36	72.5	
Power Frequency Withstand Voltage		kV, rms	70	70	140	
Lightning Impulse Withstand Voltage		kV, peak	150	200	325	
Switching impulse withstand voltage		kV, peak	-	-	-	
Rated Frequency		Hz	60	60	60	
Rated Normal Current		A, rms	600/2,000	800	1,200/2000	1,200~3,150
Rated short time withstand current		kA, rms	25	20	20	31.5/40
Rated short circuit breaking current		kA, rms	25	20	20	31.5
Rated breaking time		Cycle	5	3	3	
No. of breakes per pole		-	1	1	1	
Operating sequence		-	O - 0.3sec - CO - 3min - CO			
Rated making current	CB	kA, peak	65	50	50	82
	ES	kA, peak	-	-	-	82
Operating Mechanism	CB	-	Motor spring	Hydraulic	Hydraulic	
	DS	-	Motor, Manual	Motor, Manual	Motor, Manual	
	ES	-	Motor, Manual	Manual	Manual	Motor spring, Motor, Manual
Rated filling pressure of SF6 gas at 20℃	CB	kgf/cm2 · G	0.5	5	5	5
	GIS	kgf/cm2 · G	0.5	5	5	4
Phase arrangement	Main Bus	-	3 Phases Encapsulated	Phase Segregated	2 Phases Encapsulated	3 Phases Encapsulated
	Feeder Bus	-	3 Phases Encapsulated	Phase Segregated	2 Phases Encapsulated	3 Phases Encapsulated
Installation Area		-	Indoor	Indoor/Outdoor	Indoor/Outdoor	







GESG1440	GESG1440-NH	GESG1730	GESG1750	GESG2450-SR	GESG3640	GESG3654	GESG3664
145		170		245	362		
275		325		460/530	450		
650		750		1050/1200	1,175		
-		-		N/A	950		
50/60		60		50/60	60		
2,000~3,150		1,200 (1,250), 2,000, 3,000 (3,150), 4,000		3150	4,000	4,000~8,000	4,000
40		31.5	50	50	40	63	50
40		31.5	50	50	40	63	50
3			3	50		3	
1		1			2	1/2	1
O - 0.3sec - CO - 3min - CO							
100/104		80	130	130	100	164	130
100/104		80	130	130	100	158	130
Hydraulic, Motor spring*		Hydraulic		Motor spring	Hydraulic	Hydraulic	Pneumatic/Hydraulic
Motor, Manual		Motor spring, Motor, Manual			Motor spring, Motor, Manual		
Motor spring, Motor, Manual		Motor spring, Motor, Manual			Motor spring, Motor, Manual		
5	7	5	6	6.0	6		
5	5.5	5			5		
3 Phases Encapsulated		3 Phases Encapsulated		3 Phase common Enclosure	3 Phases Encapsulated		
3 Phases Segregated	3 Phases Encapsulated	3 Phases Encapsulated		1 Phase enclosure	3 Phases Segregated		
Indoor/Outdoor		Indoor/Outdoor			Indoor/Outdoor		

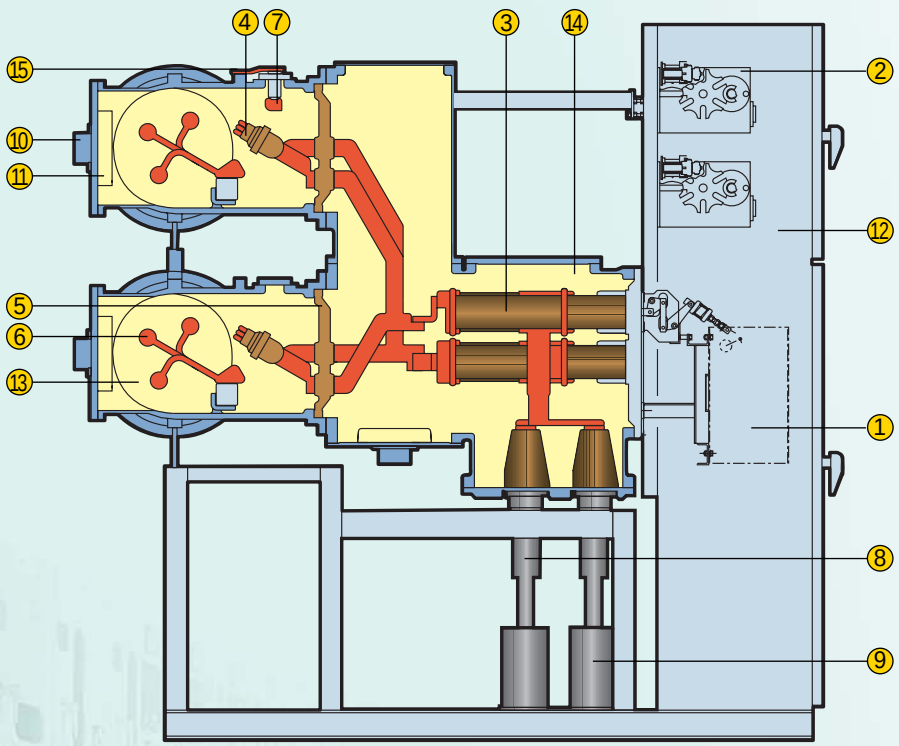
*Note) Please contact LSIS for detail information

Gas Insulated Switchgear

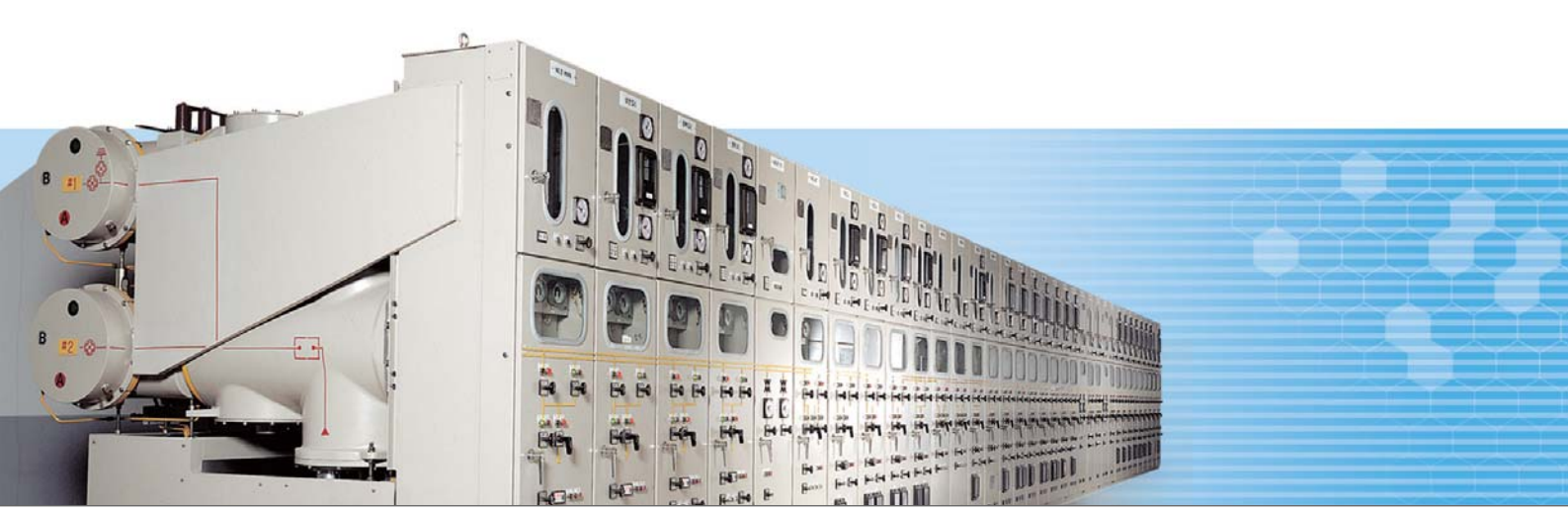
Construction of 25.8kV

Construction & Single Line Diagram

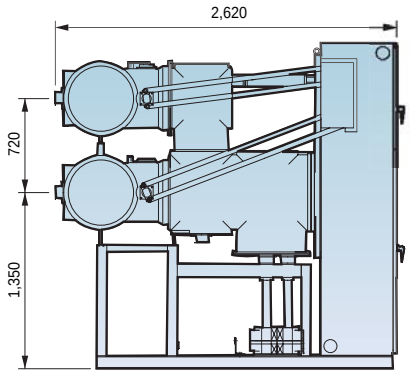
- Easy Operation, Maintenance & Inspection.
- Superior insulation by adopting cable-plug-in system.
- Replacement in the air is possible by adopting center holed mold CT.



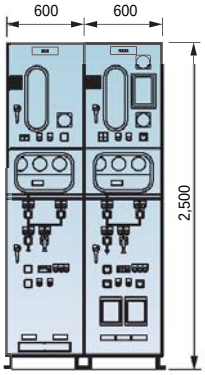
NO	Name	NO	Name
1	Operating mechanism for CB	9	Current transformer
2	Operating mechanism for 3 position switch	10	Rupture disc
3	Vaccum interrupter	11	Absorbent
4	3 position switch	12	Local control panel
5	Insulating spacer	13	DS/ES unit
6	Main bus	14	Circuit breaker
7	Earth bushing	15	Earth bus bar
8	Cable		



Main / Feeder Circuit

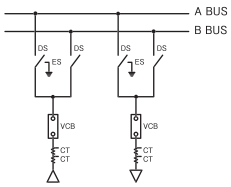


Side View



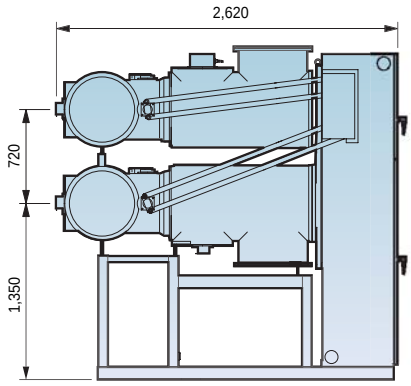
Front View

Main / Feeder (2,000A / 600A)

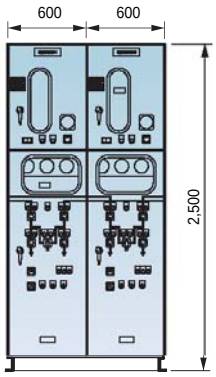


One-Line Diagram

Bus Section Circuit

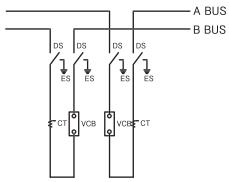


Side View



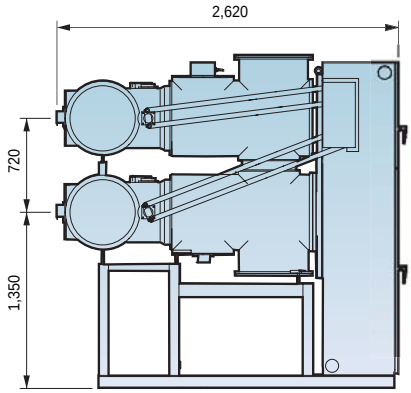
Front View

Bus Section(2,000A)

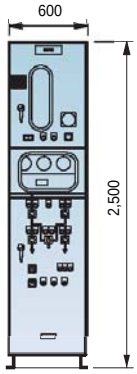


One-Line Diagram

Bus Tie Circuit

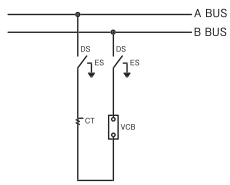


Side View



Front View

Bus Tie(2,000A)



One-Line Diagram

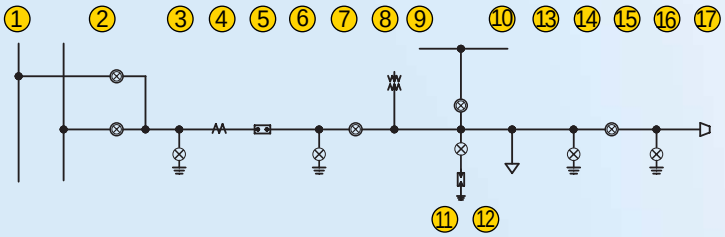
Gas Insulated Switchgear

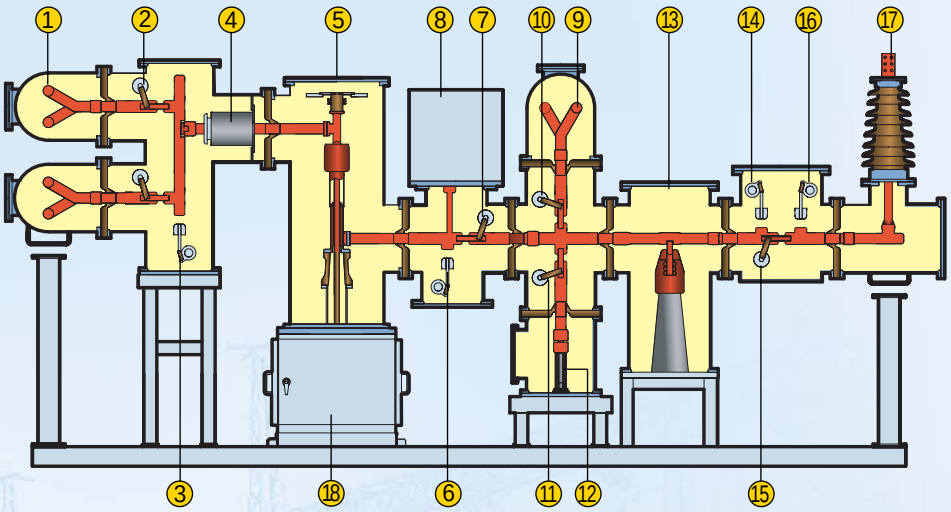
Construction of 72.5kV

(2phases encapsulated)

Construction & Single Line Diagram

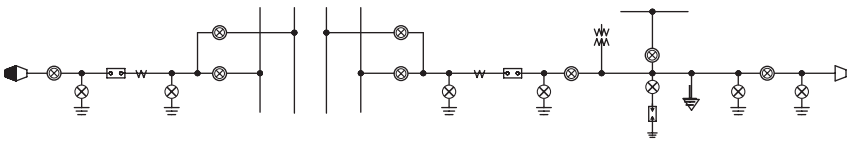
- Applied for Korean Railroad and Korea Train Express Projects.
- 2Phases common encapsulated type.

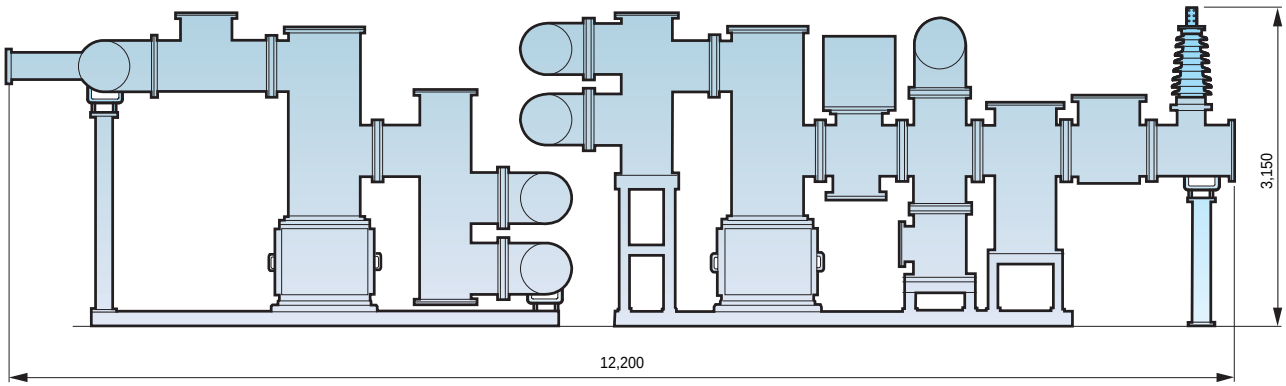




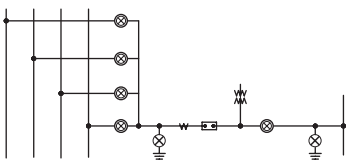
NO	Name	NO	Name
1	Main bus	10	Bus disconnector
2	Bus disconnector	11	Disconnector for LA
3	Earthing switch for maintenance	12	Lighthing arrester
4	Current transformer	13	Cable head
5	Circuit breaker	14	Earthing switch for maintenance
6	Earthing switch for PT	15	Line disconnector
7	Disconnector	16	Line earthing switch
8	Potential transformer	17	Gas to air bushing
9	Main bus	18	Operating mechanism for CB

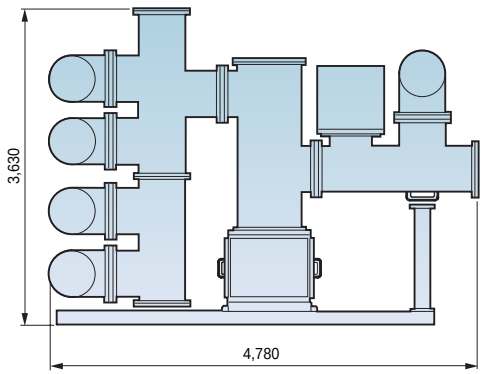
TR Feeder T/L Feeder





Bus Tie Feeder





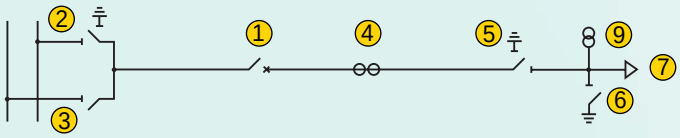
Gas Insulated Switchgear

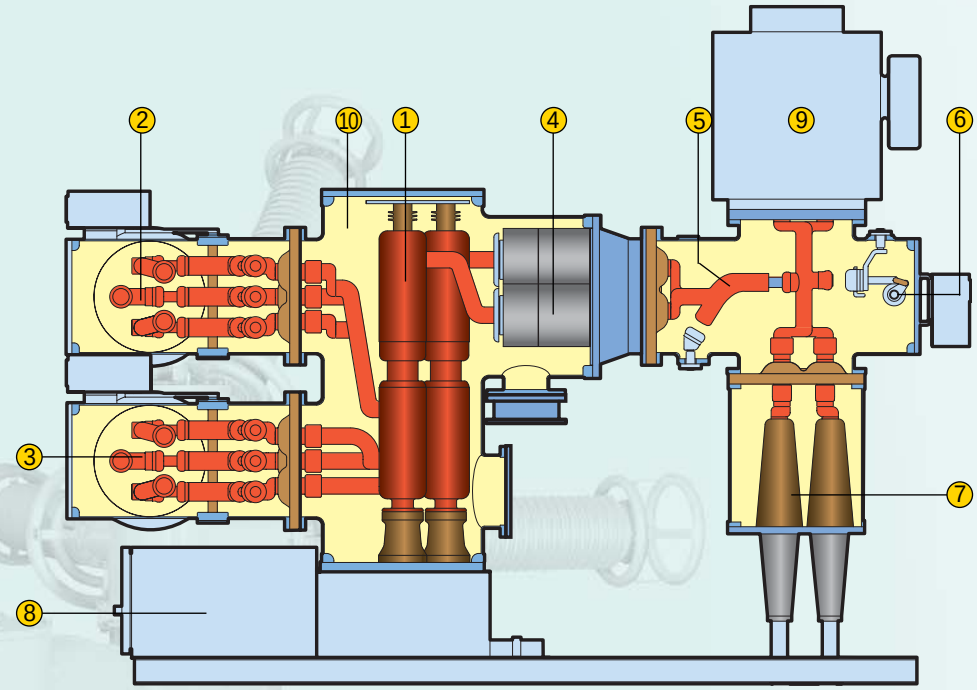
Construction of 72.5~145kV

(3phases encapsulated)

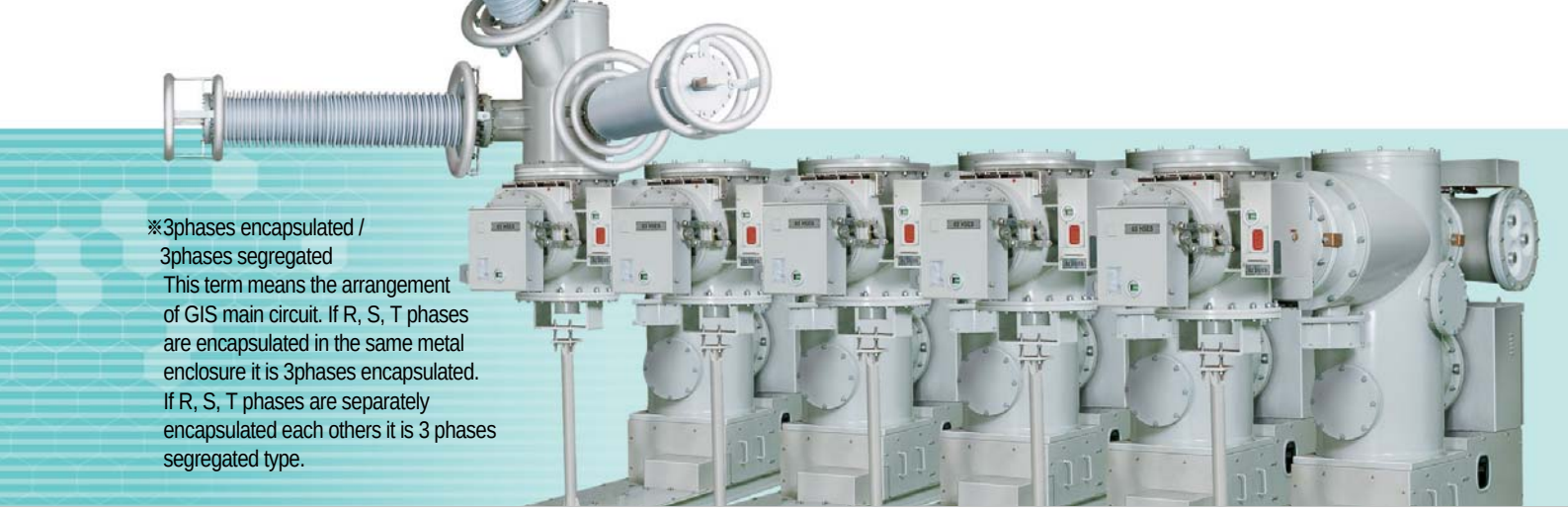
Construction & Single Line Diagram

- Developed for Middle East, Asian & European Countries.
- Compact size. (800mm Bay Width)
- Highly reliable double flow puffer mechanism for arc quenching.
- 3position switch combined DS with ES



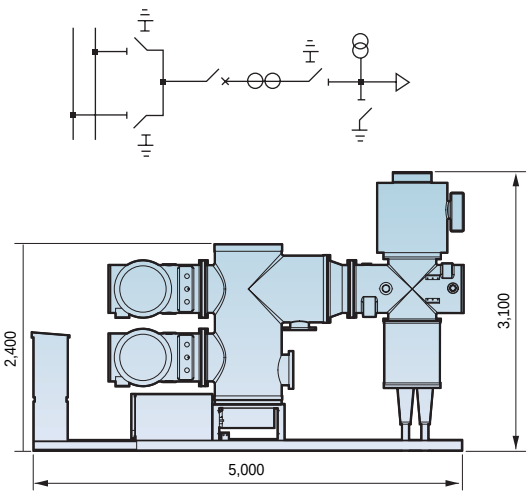


NO	Name	NO	Name
1	Circuit breaker	6	High speed ES(HSES)
2	Bus disconnector with maintenance earthing switch	7	Cable head
		8	Operating mechanism for CB
3	Bus disconnector	9	Potential transformer
4	BCT	10	Gas area
5	Line DS/ES		

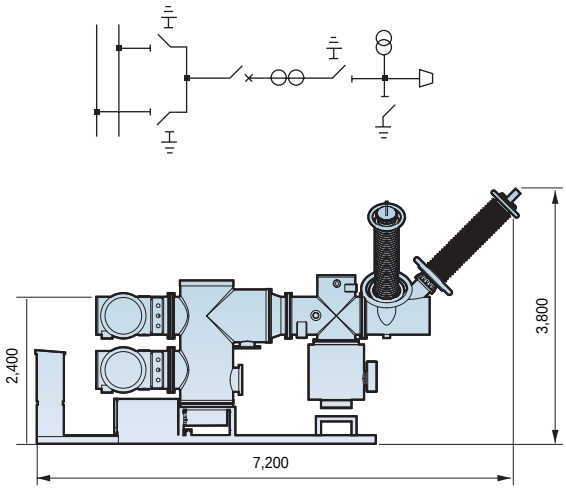


※3phases encapsulated / 3phases segregated
This term means the arrangement of GIS main circuit. If R, S, T phases are encapsulated in the same metal enclosure it is 3phases encapsulated. If R, S, T phases are separately encapsulated each others it is 3 phases segregated type.

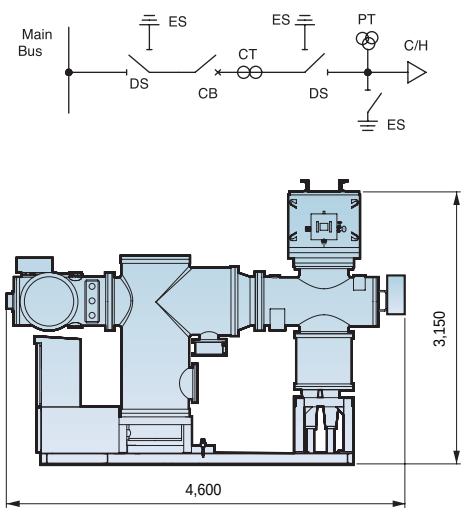
Double Bus System (Cable Connection)



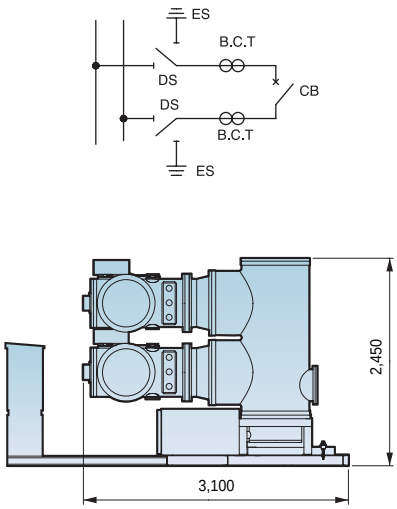
Double Bus System (Gas to Air Bushing)



Single Bus System (Cable Connection)



Bus Coupler



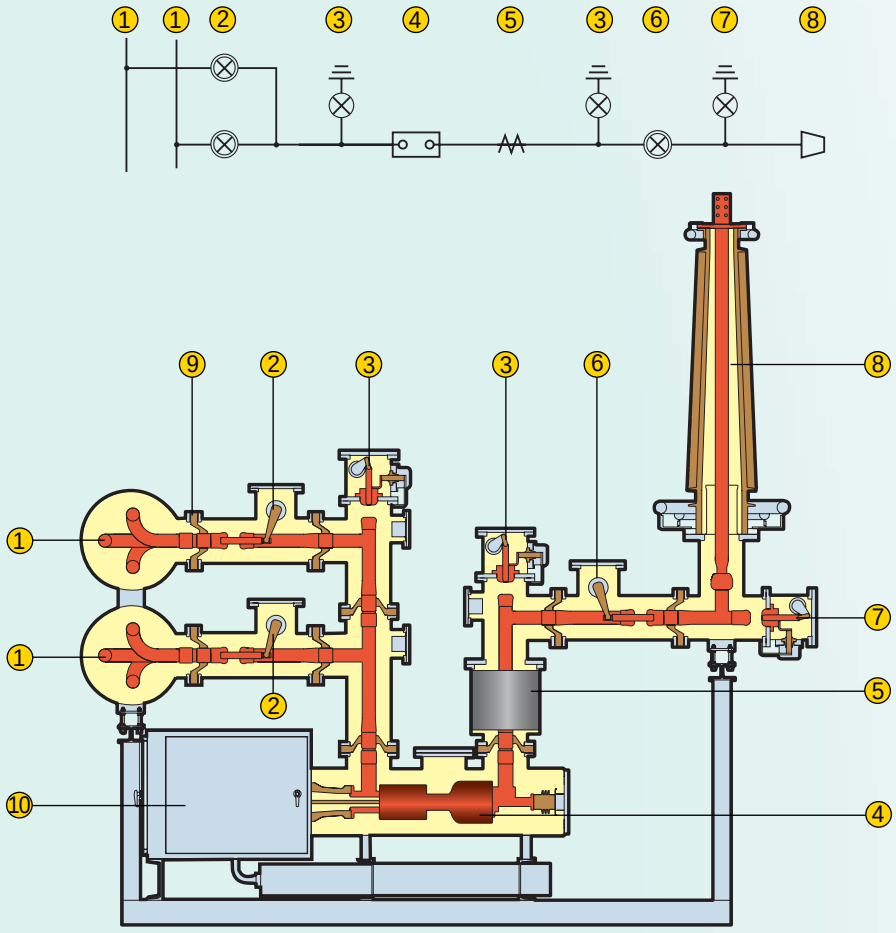
Gas Insulated Switchgear

Construction of 72.5~145kV

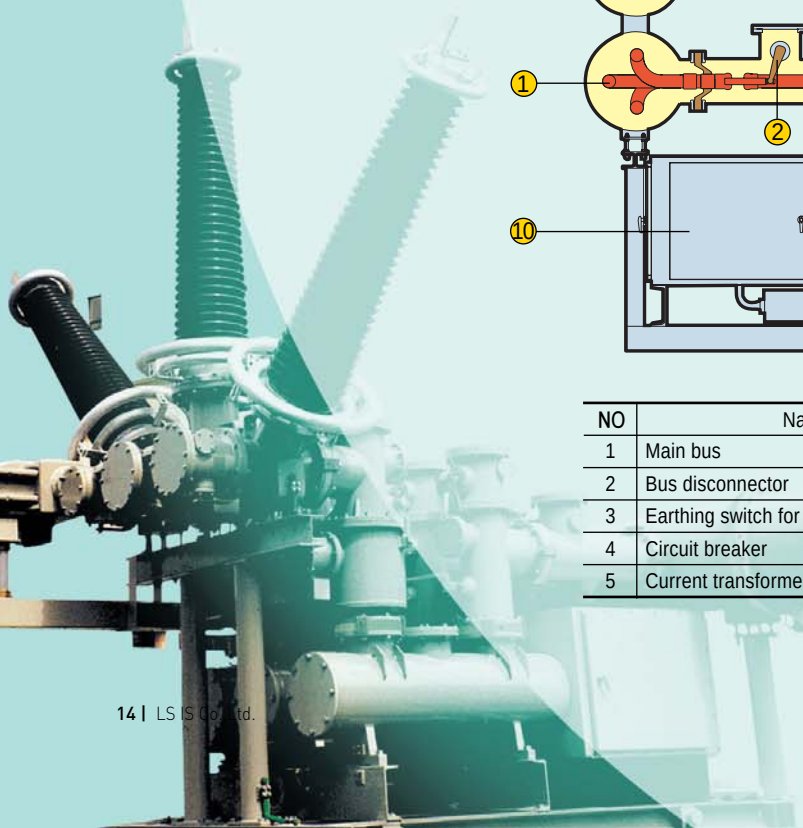
(3phases segregated)

Construction & Single Line Diagram

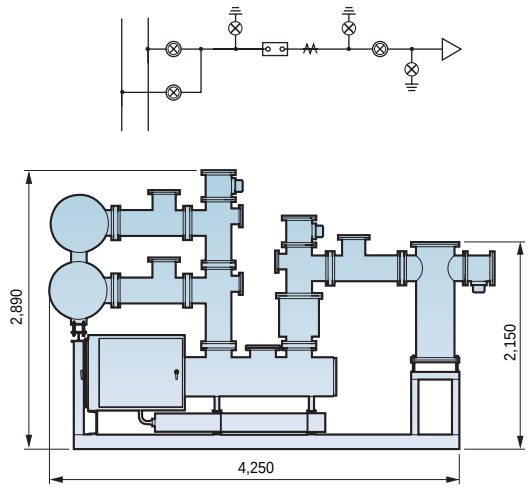
- Developed for Middle East, Asian & European Countries.
- 3phases encapsulated for main bus & 3phases segregated for feeders.



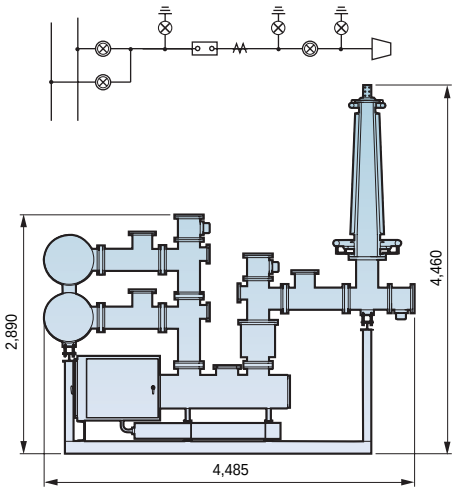
NO	Name	NO	Name
1	Main bus	6	Line disconnector
2	Bus disconnector	7	Earthing switch for making-proof
3	Earthing switch for maintenance	8	Bushing
4	Circuit breaker	9	Insulating spacer
5	Current transformer	10	Operating mechanism for CB



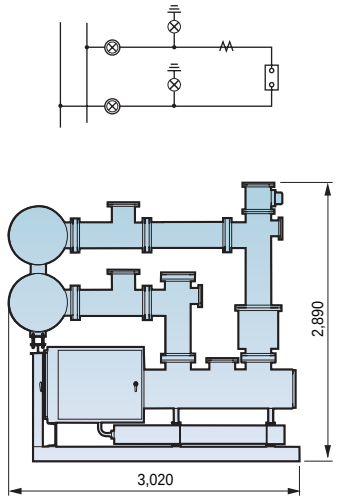
Double Bus (Cable Head)



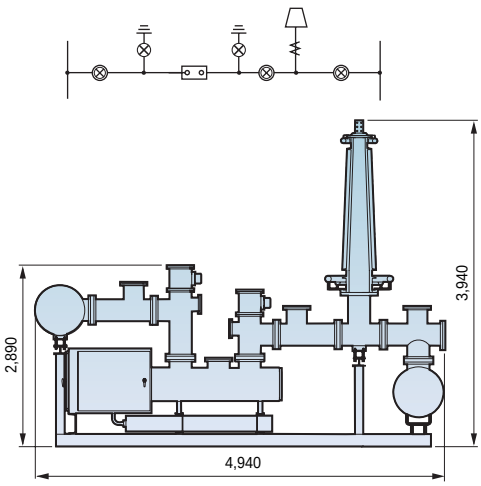
Double Bus (Gas to Air Bushing)



Bus Coupler



Bus Section

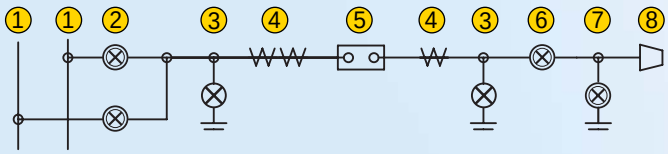


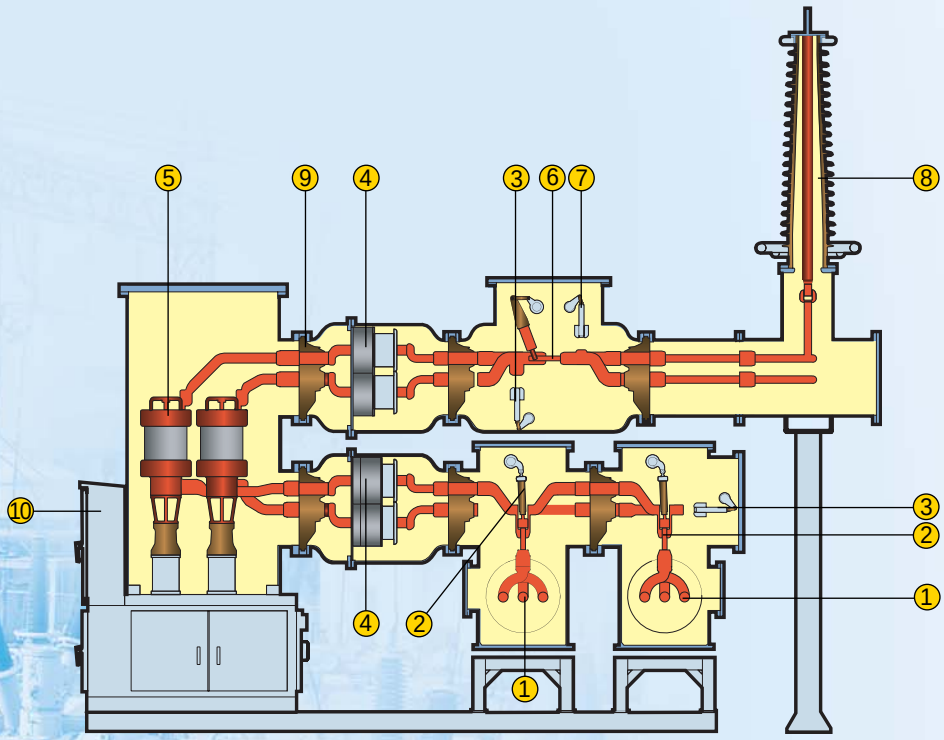
Gas Insulated Switchgear

Construction of 170kV

Construction & Single Line Diagram

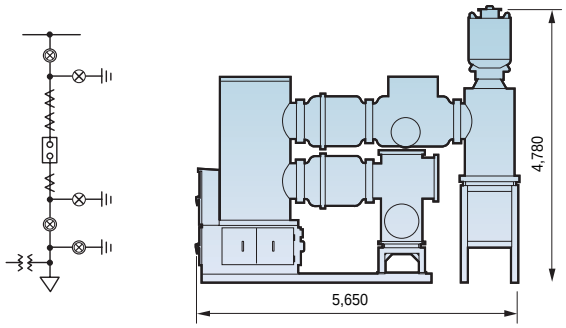
- Condenserless Circuit Breaker.
- Modular design & compact size enables easy installation and extension.
- Vertically installed Circuit Breaker in front of the bay makes it easy maintenance and inspection.



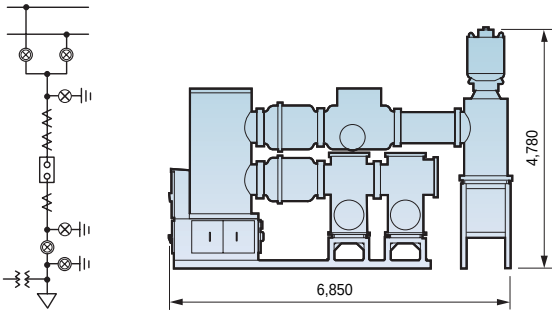


NO	Name	NO	Name
1	Main bus	6	Line disconnector
2	Bus disconnector	7	Earthing switch for Making-proof
3	Earthing switch for maintenance	8	Bushing
4	Current transformer	9	Insulating spacer
5	Circuit breaker	10	Local control panel

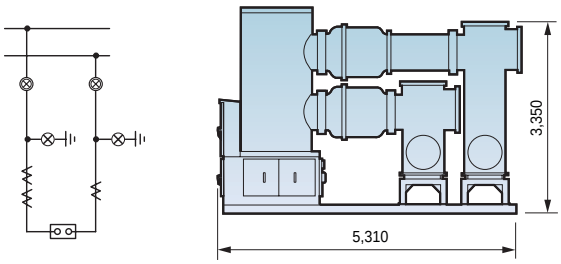
Single Bus / Transmission Line (Cable Head)



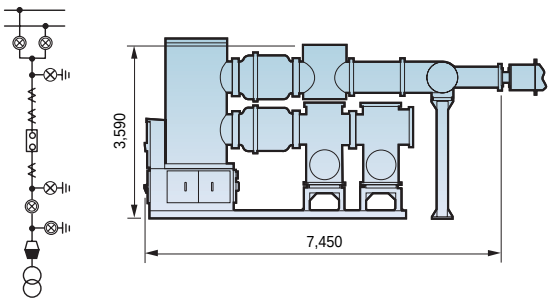
Double Bus / Transmission Line (Cable Head)



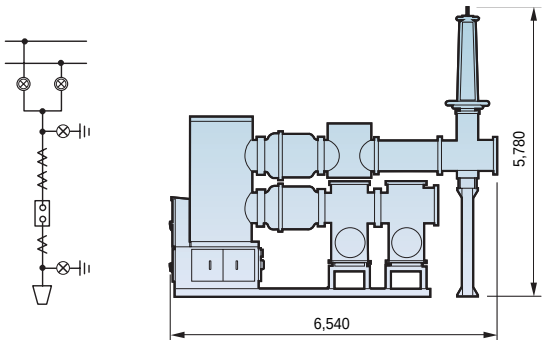
Bus Tie



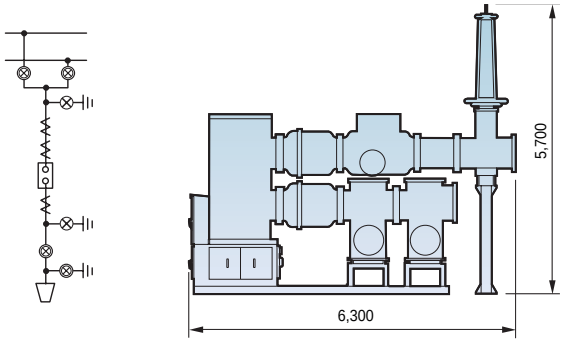
Transformer Feeder (Gas to Oil Bushing)



Overhead Line TR Feeder (Gas to Air Bushing)



Overhead Line T/L Feeder (Gas to Air Bushing)



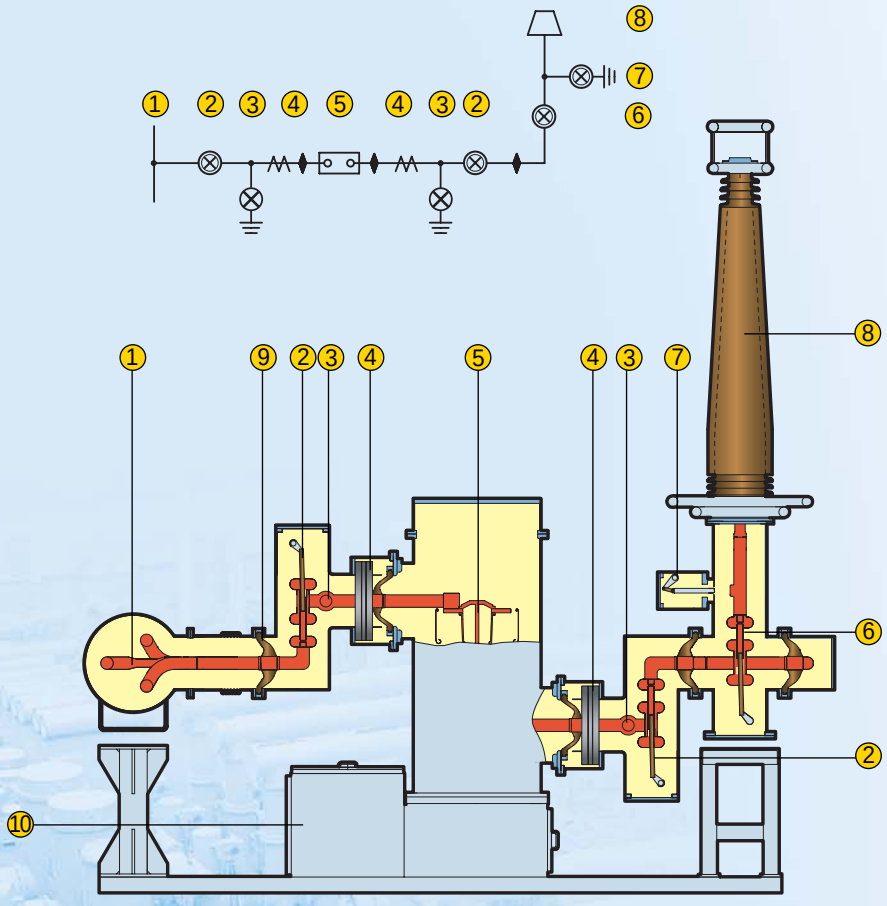
Gas Insulated Switchgear

Construction of 245~362kV

(one break)

Construction & Single Line Diagram

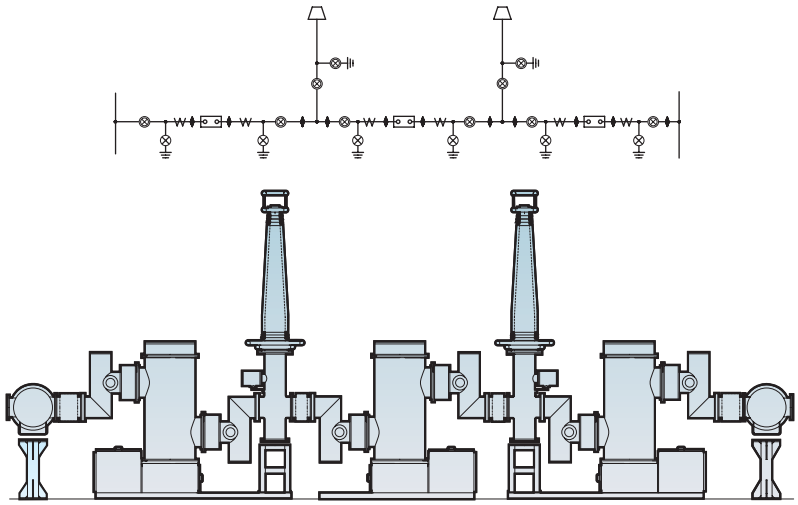
- Highly reliable one breake circuit breaker.
- Vertically installed circuit breaker makes it easy assembly and installation.



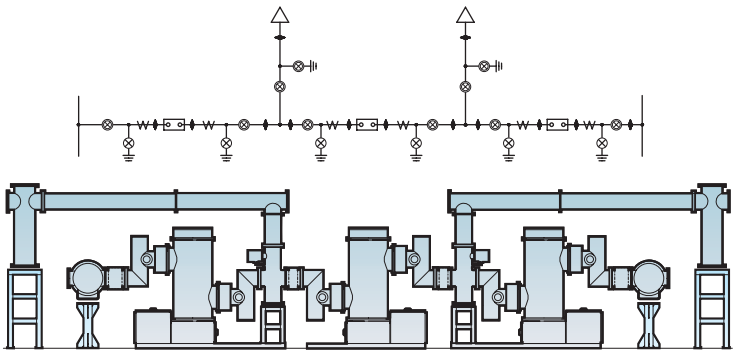
NO	Name	NO	Name
1	Main bus	6	Line disconnector
2	Bus disconnector	7	Earthing switch for making-proof
3	Earthing switch for maintenance	8	Bushing
4	Current transformer	9	Insulating spacer
5	Circuit breaker	10	Operating mechanism for CB

※What is break per pole?
This term means numbers of break per pole. If the arc quenching chamber is one, we call it one break per pole circuit breaker and if arching chamber is two, we call it two breakes per pole circuit breaker.

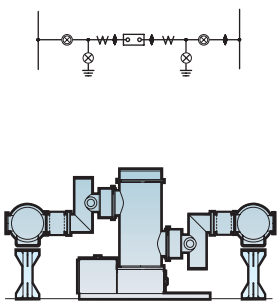
Double Bus Feeder (1 1/2 CB Bushing Type)



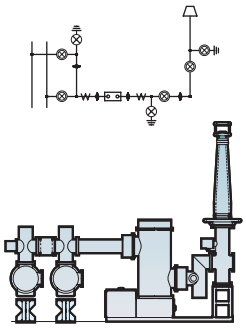
Double Bus Feeder (1 1/2 CB Cable Head Type)



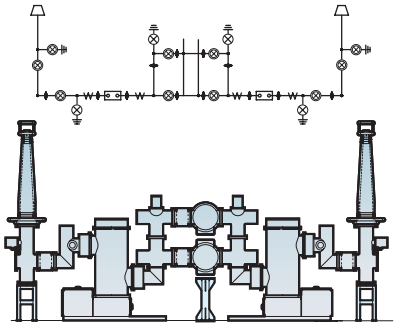
Bus Tie

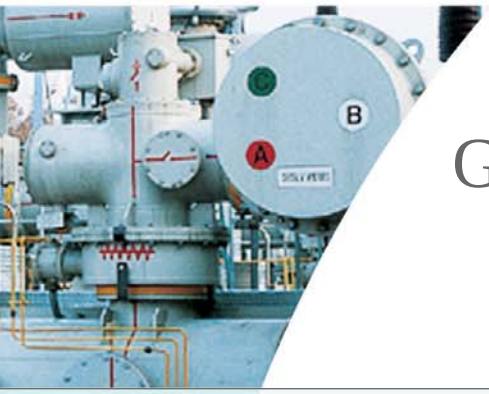


Double Bus Feeder



Double Bus Feeder





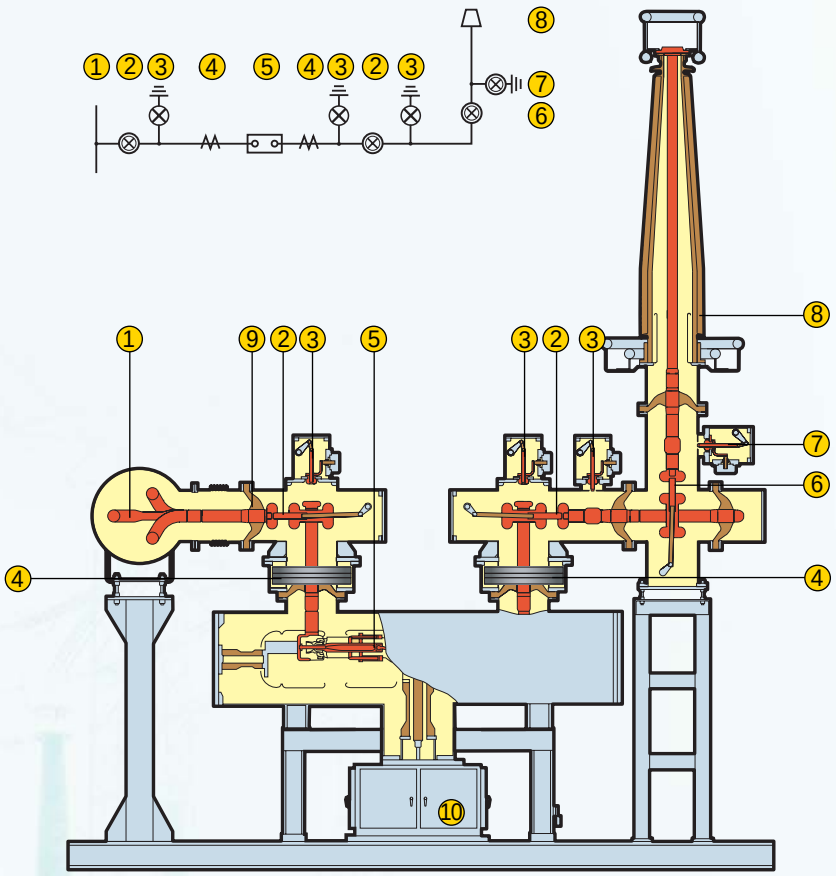
Gas Insulated Switchgear

Construction of 245~362kV

(two breakes)

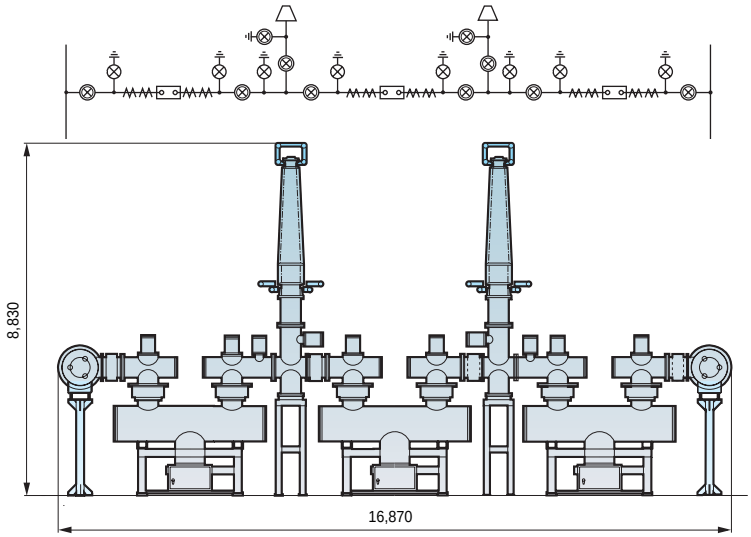
Construction & Single Line Diagram

- Maximum breaking current is 63kA
- Easy installation and extension
- Fine sighted appearance

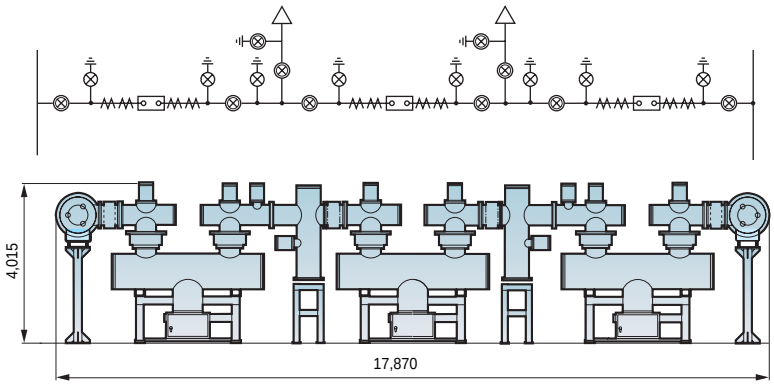


NO	Name	NO	Name
1	Main bus	6	Line disconnector
2	Bus disconnector	7	Earthing switch for making-proof
3	Earthing switch for maintenance	8	Bushing
4	Current transformer	9	Insulating spacer
5	Circuit breaker	10	Operating mechanism for CB

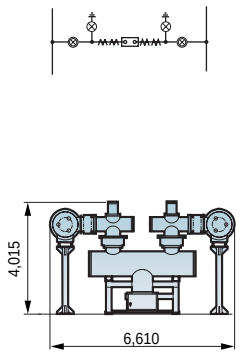
Double Bus Feeder (1 1/2 CB Bushing Type)



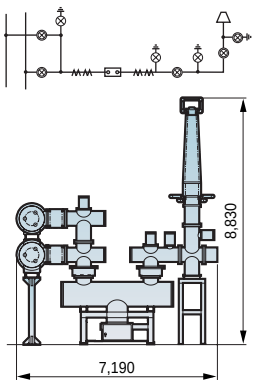
Double Bus Feeder (1 1/2 CB Cable Head Type)



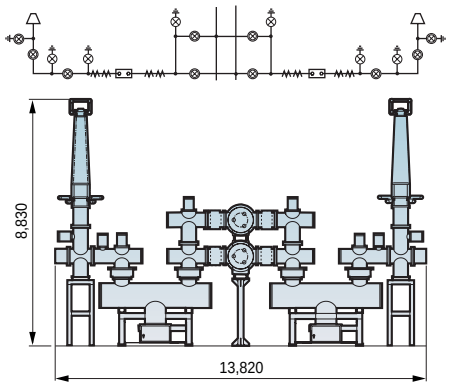
Bus Tie



Double Bus Feeder

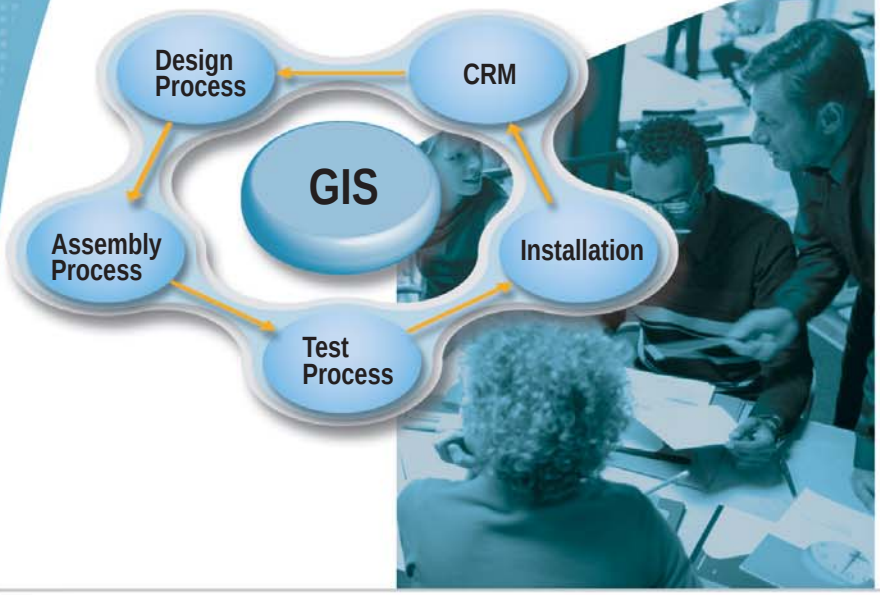


Double Bus Feeder



Gas Insulated Switchgear

Quality Control

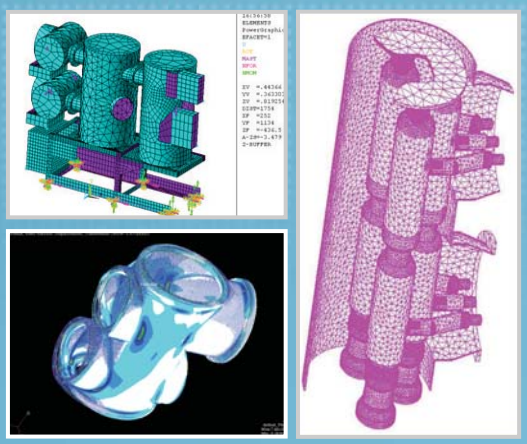


Based on our motto, Quality Product & Services Lead Customer's Satisfaction", world best products has be developed & produced.

LSIS is leading the future of electrical and automation industry by providing customers with quality products and best services. LSIS has acquired ISO 9001 certificate over all the products and assists its sub suppliers to get Quality System by operating TCS program.
Our policy "First Quality to Customer" naturally provides the customer with satisfactory services.

Design Process

Based on internationally recognized advanced technology, LSIS provides high quality products with customers through continuous improvement, research & development.
Dedicated engineers' electrical & mechanical design will provide the optimized solution for the customers.

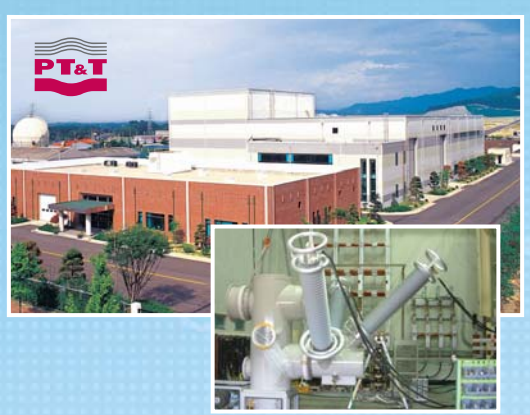


Assembly Process

ERP system manages all the processes automatically from assembling & after services and every procedures are controlled by the quality system(ISO 9001) which has be implemented in our company more than 10 years.
All fabrication works are done in clean-room in our factory and it will basically prevent any causes of defects or quality deterioration of our product.

Test Process

All test and inspection will be done on the base of IEC or any other international code, if required by the customers.
LSIS established Testing and Correction Institute at first among private enterprise in Korea. PT&T (Power Testing & Technology Institute) which has been internationally recognized by KOLAS (Korea Laboratory Accreditation Scheme) always enables us to improve performance and reliability of our products by developing core technology.



Installation

Compact size GIS reduces time and efforts in transportation and installation at site.
Modular design makes customers easy & fast installation & extension.

Green Innovators of Innovation

Safety Instructions

- For your safety, please read user's manual thoroughly before operating.
- Contact the nearest authorized service facility for examination, repair, or adjustment.
- Please contact qualified service technician when you need maintenance.
  Do not disassemble or repair by yourself!
- Any maintenance and inspection shall be performed by the personnel having expertise concerned.

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Specifications in this catalog are subject to change without notice due to continuous product development and improvement.

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