MITSUBISHI ELECTRIC
Changes for the Better

Gas Insulated Transformer (GIT)

Safety Transformer

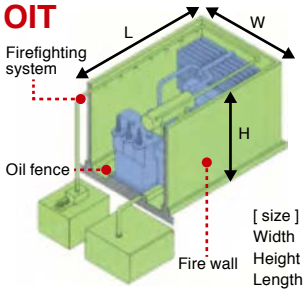
❶ **Non-flammable and non-explosive**
❷ **Flexible arrangement**

IEC-60076 part 15
gas-filled power transformers
enacted in 2008

Non-Flammable and Non-Explosive

Comparison of Oil-Immersed Transformers (OIT) and GIT

OIT



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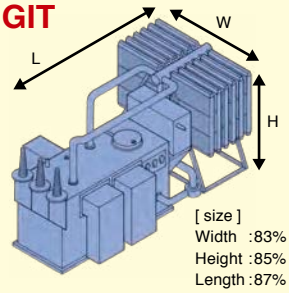
- OITs are an explosion risk
- OITs require a firefighting system

GIT



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MITSUBISHI have supplied more than **1000** GIT units with **0** explosions

- The tank of the MITSUBISHI GIT is insulated with non-flammable SF_6 gas
- Lower total system volume

Features

- SF_6 gas is non-flammable
- Non-flammable and non-explosive

Advantages

- No firefighting system required
- Lower total volume

Flexible Arrangement

Flexible Radiator Arrangement

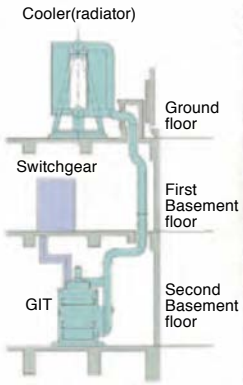
SF_6 gas has an extremely low density, making the flexible arrangement of radiators possible.

Features

- Top-mounted cooler
- Cooler can only be mounted outdoors

Advantages

- Reduced cooler maintenance costs
- Easy to replace coolers in under-ground S/S

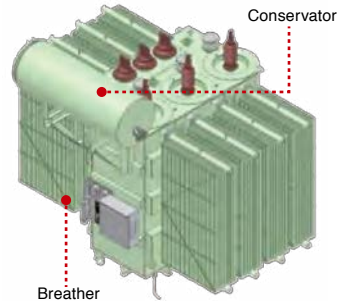


Easy Maintenance

Maintenance Comparison with OITs

Maintenance Points

OIT Main Body



- **Oil oxidization (DGA test)**
- **Replacing conservator cells**
- **Check breather**
- Check oil temp
- Check oil level
- Check oil pump

Less Maintenance

GIT Main Body

- SF_6 gas (basically requires no maintenance)
- Check gas temp
- Check gas pressure
- Check gas blower

On-Load Tap Changer (Oil)

- Oil contamination
- Average lifetime: electrical components = **200,000** hours, mechanical components = 800,000 hours

Long Maintenance Interval

On-Load Tap Changer (Vacuum Switch)

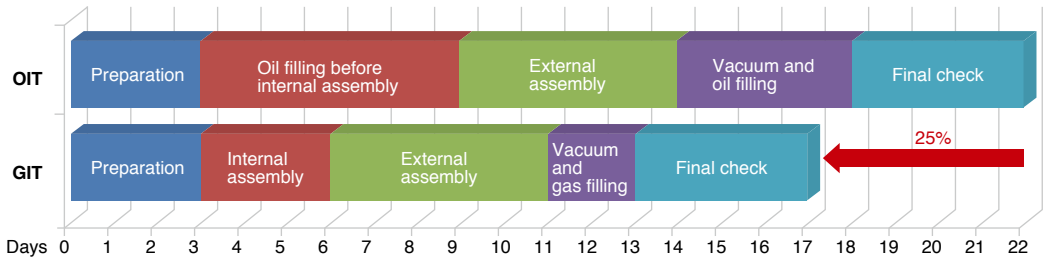
- No contamination
- Average lifetime: electrical components = **500,000** hours, mechanical components = 800,000 hours

Reduced Installation Times and High Reliability

Comparison of Installation Schedules and Transportation Volumes

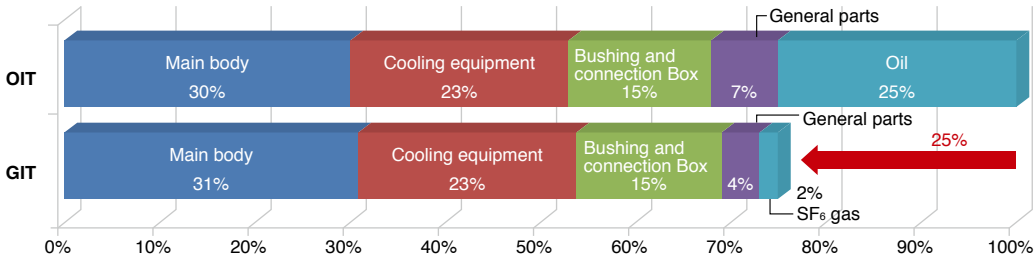
Installation Schedules

- Installation schedule for a GIT is approximately 25% shorter than for an OIT



Transportation Volume

- Transportation volume of the GIT is approximately 25% less than the OIT.



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