

### GRT Series SF6 Gas Recovery, Purification & Refilling Units



#### Application

As an insulating gas with non-toxic, non-flammable, good insulation and arc-quenching capabilities, SF6 gas is widely used in circuit breakers, GIS (gas insulated switchgears), high-voltage transformers, high-voltage transmission lines, substations, etc. However over time the SF6 gas can deteriorate, particularly if the equipment has experienced regular switching. Inferior gas quality can diminish the above mentioned capabilities, which compromises the performance and safety of the equipment. Checking the quality of the gas in equipment, as part of a preventative maintenance program, can extend the product life. It can sometimes be the case that some customers hold unwanted, nonconforming or contaminated SF6 that is no longer required due to the cost, or lack, of removal options. As part of ACORE's commitment to helping customers reduce their environmental impact, the GRT SF6 Gas Recovery Units accept any quality of SF6 for purifying and restoration, removal of other nongaseous contaminants is done with absorbents. The solid waste products, now safely concentrated and contained, can be disposed of in a safe environmentally friendly process. ACORE's complete solution assists companies in reducing their environmental impact and lowers the costs associated with the administration and inventory management of SF6 gas. This allows the product life cycle of SF6 to be extended and removes the need for energy intensive incineration. It also provides a viable route for utilities to decrease their stored stockpiles of contaminated SF6 gas.



GRT Series Gas Recovery Unit is mainly used for manufacture, installation and maintenance of SF6 electrical equipments, such as circuit breakers, GIS (gas insulated switchgears), high-voltage transformers, high-voltage transmission lines, substations, etc. It is composed of vacuum system, compression systems, purification systems, storage system, condensing system and re-filling system. It is suitable for. The main advantage of GRT Units as following:

1. Recycled SF6 gas is directly stored into the container in the form of compressed liquid and does not need to be vented into the atmosphere.
2. Faster vacuum pumping speed, drying and filtration of SF6 gas, removing hazardous moisture and contaminants.
3. Refilling SF6 gas into electric element, reusing the existing SF6 gas minimizing the requirement of purchasing new gas.

### Features

1. The use of foreign companies advanced principles and technology, advanced design, functional and reasonable structure, the operation simple and clear.
2. Adopts imported USA semi-enclosed compressor, stable performance and service life is greatly extended.
3. Vacuum system uses Germany vane vacuum pump, fast vacuum pumping speed.
4. Purification system uses USA Neil filter with two-stage built-in electric heating and efficient absorption (without frequent replacement of adsorbent), greatly improving quality of SF6 gas
5. The latest patented SF6 special instruments and valves, more reliable instrument ball valve.
6. Interlocked protective system can avoid overload, over voltage, electricity leak and prevent any damages to equipments due to operating error or power failure.
8. The equipment uses air-cooler, can be used without external water conditions.

### Technical Specifications:

1. Type: Mobile trolley type
2. Power Supply: 380V, 50HZ, 3Phase (or Customized)
3. Ambient Temperature: -10°C to 40°C
4. Ultimate vacuum  $\leq 10$  Pa (special requirements can be  $\leq 5$ Pa)
5. Vacuum pumping speed: 14 to 200 m<sup>3</sup> / h (different model with different speed)
6. Gas filling: initial pressure  $< 133$ Pa, final pressure  $\leq 0.8$ M Pa, Inflating speed  $> 6$ m<sup>3</sup> / h
7. Gas recovery: initial pressure  $\leq 0.8$ Mpa, final pressure: standard  $\leq 0.05$ MP or higher  $\leq 10 \times 133$ Pa, recovery speed  $\geq 12$ m<sup>3</sup> / h (different model with different speed), recovery rate: 99.5%
8. Maximum storage pressure 4.0M Pa
9. Annual Leakage Rate  $< 1\%$
10. Storage tank capacity: 100-500 kg (different model with different capacity)
11. Storage type: liquid
12. Noise  $\leq 75$ dB sound pressure level
13. Continuously trouble-free operation  $> 1000$  hours, cumulative trouble-free operation  $> 5000$  hours

### Model Specification:

Model	Storage capacity	Recovery speed	Vacuum pumping speed
GRT-30	30kg	4 m <sup>3</sup> /h	14 liters/s
GRT-50	50kg	4 m <sup>3</sup> /h	14 liters/s
GRT-100	100kg	12 m <sup>3</sup> /h	28 liters/s
GRT-150	150kg	12 m <sup>3</sup> /h	54 liters/s
GRT-200	200kg	12 m <sup>3</sup> /h	54 liters/s
GRT-250	250kg	24 m <sup>3</sup> /h	54 liters/s
GRT-300	300kg	24 m <sup>3</sup> /h	100 liters/s
GRT-500	500kg	24 m <sup>3</sup> /h	100 liters/s