



**DILO.** Sustainably tight.

Made ■  
in ■  
Germany ■



**DILO – Your flexible technology partner**

## **World's leading brand by quality and innovation**

**If you need a technology partner who combines top quality, sustainability and innovative solutions with the flexibility of a medium-sized company DILO is your perfect partner.**

**Being specialized in the core competence fields of “SF<sub>6</sub> gas handling” and “High pressure tube unions” we offer everything necessary for successful solutions ranging from best product advice to service. With great passion and without any compromises.**

**Therefore DILO has been renowned in the significant technology markets all over the world for more than 60 years.**

Today, we are an important technology partner for switchgear manufacturers and energy utilities in the SF<sub>6</sub> gas handling sector all over the world.

With our wide product range of service carts, measuring devices, special equipment, valves and couplings we offer economical and technically convincing solutions for each application as well as corresponding training and service.

So, sustainability through zero emissions and maximum reuse of SF<sub>6</sub> gas is the mission and our staff gets involved with enthusiasm every day.



- 1951** Market launch of DILO metal-to-metal seal high pressure tube unions
- 1961** Move to the new location in Babenhausen
- 1967** Entry into SF<sub>6</sub> technology; delivery of the first piping system for SF<sub>6</sub> gas insulated switchgear
- 1970** Market launch of valves and couplings for the SF<sub>6</sub> gas product group
- 1972** Market launch of the first SF<sub>6</sub> service cart
- 1984** Development of SF<sub>6</sub> measuring devices

Is the handling of aggressive media under extreme conditions your daily challenge? In this case, our metal to metal seal high pressure tube unions offer the perfect solution for your applications.

The sealing principle developed by DILO allows long term pressure tightness up to 1,000 bar and withstands temperatures of up to 500 °C.

Customers in the power plant and turbine sector, in machinery construction as well as in the chemical industry have been relying on DILO quality "Made in Germany" for many years.

### SF<sub>6</sub> gas handling

Nowadays, SF<sub>6</sub> gas handling contributes the major share of turnover for DILO. As the leading brand worldwide we have all the resources and know how in order to implement individual customer requirements quickly and flexibly.

### High pressure tube unions

The metal-to-metal sealing principle developed by DILO is the system preferred in sectors with extremely high pressures and temperatures as well as aggressive media. Our product range will satisfy practically all pipe diameter and wall thickness requirements.

- 2006** Building of the DILO research and development center with show room and training facility
- 2009** Market launch of new SF<sub>6</sub> service carts with automatic functions and touch screen
- 2010** Development of new measuring devices with multiple measurement and gas return system
- 2011** Company 60<sup>th</sup> anniversary
- 2012** Market launch of leak test equipment for GIS components
- 2014** The newly established service center DILO Asia-Pacific Pte. Ltd. starts operation in Singapore



## Responsibility towards people and nature

# Technology and environment in harmony

**With 300 qualified staff and more than 50 agents all over the world driven by quality, innovation, responsibility and flexibility we focus on healthy growth and sustainability also in the future.**

**Technology and environment in harmony is the clear commitment of DILO towards its staff, customers and partners all over the world. This demand for ecological responsibility is also guaranteed by our product strategy with in-house production and quality "Made in Germany".**

Thus we are able to serve customer priorities promptly and fulfil customers' requirements with flexibility and reliability.

All stages of the cycle from market analysis to product development, construction, production, distribution, training and service are integrated in the DILO quality system. This is how we ensure the high quality standard of our products and services.

Thanks to our education and training center for young people we also fulfil our responsibility for the future: We invest in qualified new staff to meet future market challenges.



## Values for valuable cooperation

### Quality

For us, quality means to continuously exceed clearly defined requirements in all sections.

### Innovation

Thanks to innovative solutions we offer our customers' additional value in safety, handling and economic efficiency.

### Reliability

For us, reliability means to comprehensively fulfil agreements and promises made.

### Flexibility

Facing the challenges of the market with flexibility we help to boost our customers' success as well as our own.

**“Our team is impressed by the emission-free solutions and the high performance of DILO SF<sub>6</sub> service carts.”**

Michael Neuenhaus,  
Amprion GmbH



## DILO SF<sub>6</sub> gas handling

### Zero emissions and maximum gas re-use is our goal

**It has been our aim to meet customer requirements such as switchgear manufacturers or power utilities for emission-free SF<sub>6</sub> gas handling – consistently and without any compromises.**

As SF<sub>6</sub> is a major greenhouse gas with a high global warming potential and listed in the Kyoto protocol, it is among the six gases subject to monitoring. SF<sub>6</sub> has to be used in closed systems in order to avoid emissions.

This is exactly where our core competence – as the world wide leading manufacturer of emission-free gas handling products for medium and high voltage switchgear – lies. Our customers include renowned companies in the field of energy production and distribution.

Nowadays most emissions are generated by inadequate SF<sub>6</sub> gas handling. Therefore we have created our “Zero Emission Concept” which defines a technological closed cycle to cover all gas handling processes with high reliability and without any emissions.

No matter whether the gas quality has to be determined, the gas needs to be recovered and purified, the purified gas quality is to be measured or the gas compartment has to be refilled, we offer a wide product range including all sizes and performance levels. With our valves and couplings we also take care of safe connection to switchgear. Thanks to our special versions we can meet specific customer requirements in SF<sub>6</sub> gas handling.

Our new generation service carts show that it is possible to combine technological competence, economic efficiency and sustainability: These service carts allow the recovery of SF<sub>6</sub> gas down to a final vacuum of < 1 mbar and exceed IEC regulations by far.



**Product range:**

- Gas refilling and evacuating devices
- Service carts
- Special equipment
- Accessories
- Measuring devices
- Valves and couplings

**Thus, you benefit from:**

- Emission-free SF<sub>6</sub> gas handling
- Use of only oilfree and gas tight compressors
- Highest economic efficiency and reliability
- Specialists with 40 years experience
- Wide range of products from small devices to large equipment
- Individual solutions for customer specific requirements
- Comprehensive technical services
- Training and certification for the authorisation to recover SF<sub>6</sub> gas



## DILO SF<sub>6</sub> gas handling

### Services with additional benefits

**Do you fancy a complete range of services for SF<sub>6</sub> gas handling? We can offer it all: an all-inclusive service package of perfectly matched modules. In addition to technical services we have systematically enlarged our range of customer specific training and certification training in the past few years.**

This includes comprehensive on-site service which is provided by our staff and our 50 agents and service centers all over the world. Our personnel will also carry out complete SF<sub>6</sub> gas handling operations for our customers if required.

Besides technical services in the past few years we have also focused on training and certification of participants for the acquisition of the permission to carry out the recovery of SF<sub>6</sub> gas in accordance with EU regulations.

Many power utility and switchgear manufacturer personnel have been qualified for the emission-free recovery of SF<sub>6</sub> gas in our company's training center.

DILO is one of the few companies in Europe accredited for SF<sub>6</sub> certification.

In summary, we offer solutions perfectly adapted to each customer's requirements, generating additional benefits for you as our customers and partners.





**“The certification offered by DILO guarantees my staff a high level of qualification.”**

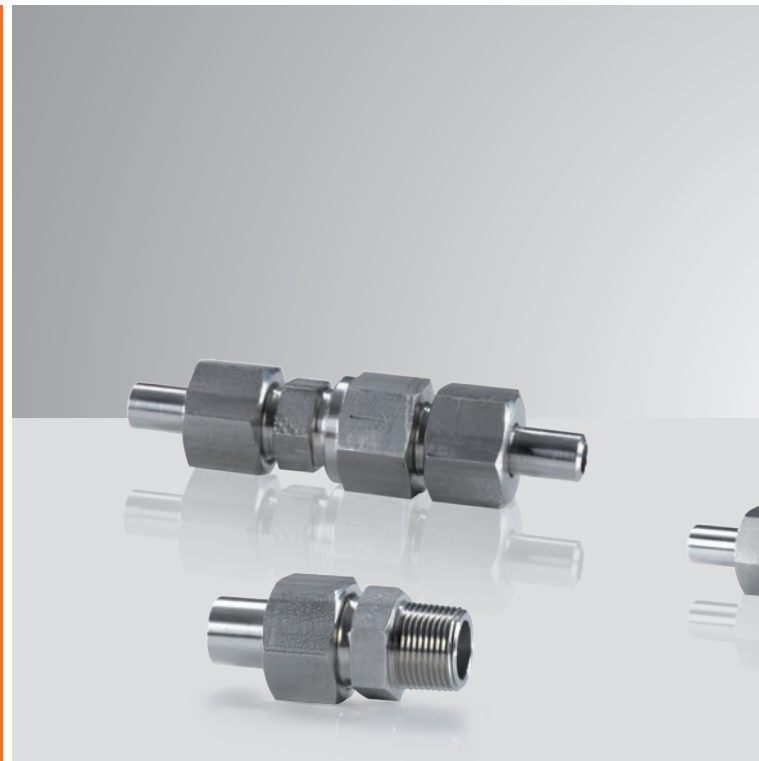
Jürgen Trauner,  
EnBW Regional AG

**Thus you benefit from:**

- Comprehensive on-site service
- Preventive maintenance works
- Flexible spare parts logistics
- Online registration of devices
- Rental equipment
- Retrofit
- SF<sub>6</sub> gas handling on site
- Preparation of SF<sub>6</sub> gas
- Leak tests of GIS components
- Service centers all over the world
- Training and seminars
- SF<sub>6</sub> certification

**“I am totally convinced  
by the high safety  
level even under extreme  
pressure.”**

Christian Komm,  
Siemens AG, Power Generation



## DILO high pressure tube unions

# Long lasting pressure tightness even under extreme conditions

**Do you have to handle high pressures, extreme temperatures, aggressive media or hot vapours with high process reliability? Here are DILO's high pressure tube unions!**

**Our high pressure tube unions are hermetically tight even under critical operating conditions. There is no chance of leaks.**

The basis is the metal-to-metal sealing principle developed by DILO.

The high pressure metal tube unions are sealed without any intermediate seal, achieved by direct contact of the sealing surfaces of the tongue and groove parts.

The sealing principle developed by DILO allows long term pressure resistance up to 1,000 bar and withstands temperatures of up to 500 °C (dependent on the material used).

DILO high pressure tube unions are completely maintenance-free and can be loosened and re-connected as often as required. Our products are the first choice where maintenance work on pipework systems is required frequently. The product range includes nominal diameters from DN3 to DN50 covering all requirements with pressure ranges of up to PN1000.

Different materials are available so that high process reliability is maintained for all media. The high quality and safety standard is confirmed by ISO 9001:2008 certification as well as by additional approvals and certificates.

Well known customers in the power plant and turbine sector, in the chemical and petrochemical industry, in pipework systems and plant construction as well as in many other sectors have been relying on DILO quality “Made in Germany” for many years.



#### Product range:

- Weld-on tube unions
- Screw-in tube unions
- Throttlefree angle-swivel unions
- Gauge connecting screw unions
- Blanking disks
- Manual blocking valves / non-return valves
- Superheated steam unions for applications up to 500 °C
- High pressure hoses

#### Application advantages:

- Permanently tight with a leak rate of about  $< 1 \text{ cm}^3$  in 3 years
- Suitable for pressures up to 1,000 bar and vacuum range
- Temperature resistant up to 500 °C (dependent on the material used)
- Applicable for all media depending on the chosen material grade
- Permanently high level of gas tightness even when tube unions are frequently loosened and re-connected
- Little depth of immersion which allows simple assembly and disassembly
- Resistant to vibrations without any additional protection
- Complete interchangeability of pieces of the same type



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