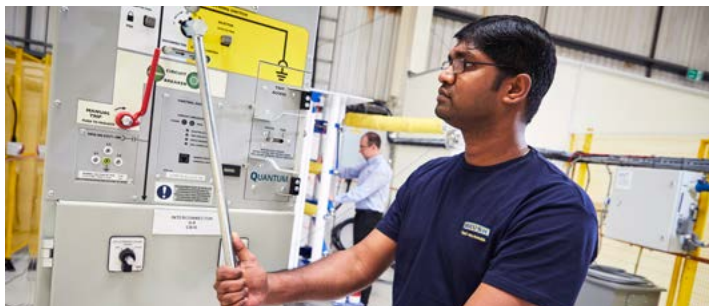




TRUST. WELL EARNED.

# Switchgear

Providing global  
switchgear solutions







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## Switchgear

BRUSH Switchgear (the trading name of Hawker Siddeley Switchgear Ltd), is a leading manufacturer of highly reliable medium voltage indoor and outdoor AC and DC switchgear, providing cutting-edge solutions and excellent customer service across a range of market sectors worldwide.

With over 130 years' expertise, BRUSH Switchgear has a reputation for innovation, first class product performance and delivering high service standards to our customers in the major utilities, industrial, transport and infrastructure sectors across the world.

Our state-of-the art manufacturing facility, highly skilled workforce and innovative Switchgear Technology Centre, all located on one site in South Wales, are the foundations upon which our success is based as we continue to drive innovation and growth in the future.



### BRUSH Switchgear – building on tradition and integrity

We are immensely proud of our heritage which can be traced back to 1888 when Charles Francis Brush established the Brush Electrical Engineering Company at Falcon Works in Loughborough.

Since then, incorporating world renowned switchgear brands such as Hawker Siddeley Switchgear, South Wales Switchgear, BRUSH Switchgear and Whipp & Bourne, BRUSH Switchgear has evolved into today's global switchgear company.

Our heritage of innovation and growth has built our reputation, skills and experience that has established BRUSH at the forefront of switchgear design and a commitment to quality, delivering solutions that our customers can rely upon each and every time.

**Our award-winning magnetic actuator technology and electromagnetic spring innovations are widely acclaimed developments which provide BRUSH with a leading edge in circuit breaker technology.**

It is this tradition and integrity upon which we continue to pioneer ground-breaking technologies and introduce state-of-the-art developments to ensure we meet the need for safe and reliable protection for electricity systems.



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## Switchgear Products

BRUSH Switchgear offer AC and DC switchgear solutions to electrical distribution utilities, and public and private sector end user organisations operating in a variety of market sectors.

**At the heart of all of our products is our award winning magnetic actuator.**

**A technology that ensures reliability & long life with minimal requirement for maintenance.**

**AC Switchgear  
Indoor**

**AC Switchgear  
Outdoor**

**DC Switchgear**



**ECLIPSE**

**QUANTUM**

**BSR**

**SWR12**



**HORIZON**

**HORIZON COMPACT**

**GVR RECLOSER**



**LIGHTNING**

**SAFE BOND**



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## AC Switchgear - Indoor

BRUSH offer a complete range of AC Switchgear indoor solutions for use throughout the distribution network for both primary and secondary applications.

The product range comprises fixed-pattern, air insulated metalclad panels with vacuum circuit breaker technology and a range of OEM designed retrofit products, enabling the removal of oil and SF<sub>6</sub> circuit breakers from our legacy products. The current voltage range is 3.3-15kV with standards meeting IEC and ANSI requirements.

### ECLIPSE

#### 12kV Fixed-Pattern Indoor Metalclad Vacuum Switchgear

The Eclipse is designed to provide a lifetime of unrivalled service, bringing together one of the most advanced operating mechanisms available on the market today – the award winning magnetic actuator technology.



### QUANTUM

#### 12kV Fixed-Pattern Indoor Metalclad Vacuum Switchgear

Quantum expands the BRUSH Switchgear portfolio of medium voltage indoor switchgear with its deserved reputation for great reliability and low maintenance.



### BSR

#### The Retrofit Solution

The BSR is an OEM designed retrofit circuit breaker for both the BRUSH Switchgear VSI range of Oil Circuit Breakers and the VMV Vacuum Circuit Breaker, to IEC 62271-100.



### SWR12

#### The Retrofit Solution

The SWR12 is an OEM designed retrofit circuit breaker for both the South Wales Switchgear C & D range Oil Circuit Breaker and the HG12 Gas Circuit Breaker, to IEC 62271-100.





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## AC Switchgear - Outdoor

The BRUSH AC Switchgear outdoor range comprises the Horizon product range to meet the need for outdoor, ground-mounted circuit breakers, and our well established GVR product range, where highly-reliable Reclosers and Sectionalisers are required. These products are available in a voltage range of 15kV - 38kV with standards meeting the IEC and ANSI requirements.

### **HORIZON 38kV Outdoor Circuit Breaker**

The Horizon fills the market need for outdoor, ground-mounted circuit breakers and features the award winning magnetic actuator.



### **HORIZON COMPACT 15/27kV Outdoor Circuit Breaker**

A substation frame, stand or pole-mounted vacuum circuit breaker with SF<sub>6</sub> insulation in a self-contained package, the Horizon Compact expands our Horizon family of products.



### **GVR RECLOSER Pole Mounting & Substation Applications**

BRUSH Switchgear's world renowned GVR Recloser was the first in a range of equipment utilising one of the most advanced operating mechanisms available on the market, featuring the award winning magnetic actuator.





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## DC Switchgear

BRUSH offer a range of DC Switchgear solutions for the global traction market.

As a result of the high performance and resilience of BRUSH Switchgear's DC circuit breakers technology, the company has deservedly earned a reputation as one of the world's leading suppliers of technology into the rail and mass transit systems of major companies throughout North America, the United Kingdom, the Middle East and Asia.

### LIGHTNING

#### Incorporating the NDC Circuit Breaker

The BRUSH Switchgear Lightning product, incorporating the high speed NDC Circuit Breaker utilises proven technologies with the award winning magnetic actuator and provides an innovative DC switchgear solution for a variety of markets and demanding applications.



### SAFE BOND

#### Integrated Track Feeder and Negative Shorting Panel

The BRUSH Switchgear SafeBond product integrates the feeder circuit breaker function and the remote bonding function into one standard Lightning panel footprint, a big advantage in floor space saving, civil engineering, cabling and operational consistency and safety.





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## Switchgear Services

The BRUSH Switchgear product range is extensive and our experienced and highly skilled Services Team provide a comprehensive package of activities that are designed to ensure the maximum benefits are delivered for your Switchgear products.

With global coverage for our current and heritage products, Switchgear Services include Servicing and Repairs, Retrofit Solutions, Asset Management, Spares, Training and the support for our Heritage products,

including Hawker Siddeley Switchgear, BRUSH Switchgear, South Wales Switchgear or Whipp & Bourne Switchgear.



**Servicing  
and Repairs**

**Retrofit  
Solutions**

**Asset  
Management**

**Spares**

**Training**



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### **Servicing and Repairs**

BRUSH operate throughout the world and offer a comprehensive service including routine maintenance, repair, installation and modification, followed by pre-commissioning, test and final commissioning as required.

- Maintenance of Primary Plant
- Protection and Control Equipment
- Gas Handling, Decontamination, Maintenance or Disposal of SF<sub>6</sub>
- Condition Monitoring



### **Retrofit Solutions**

BRUSH Switchgear offer OEM retrofits for our Heritage products.

Retrofitting switchgear can extend the life expectancy of current assets by 30 years, dependent on the switchgear panel's condition, whilst offering minimal disruption.

A typical retrofit solution involves the replacement of old circuit breakers with modern vacuum circuit breakers, providing environmental benefits in addition to asset life extension.

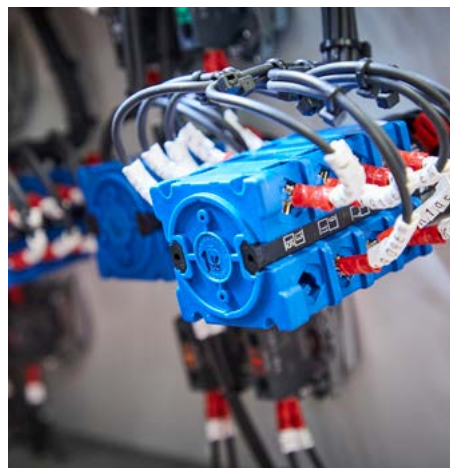


### **Asset Management**

BRUSH Switchgear as a major Original Equipment Manufacturer (OEM), offer different versions of maintenance contracts and extended warranties to suit your particular requirements.

### **Spares**

Through our comprehensive asset records we can offer an extensive range of component and engineering spares.



### **Training**

Operation and Maintenance Training BRUSH Switchgear can offer bespoke training courses to help your staff operate and maintain your switchgear safely, correctly and efficiently.





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## Heritage Brands

BRUSH Switchgear incorporates the following Heritage Brands:



### BRUSH Switchgear

Charles Francis BRUSH established the BRUSH Electrical Engineering Company in 1888 and were the pioneers behind the development of Vacuum Switchgear.

In the last 30 years, successes have included the first Vacuum Switchgear Circuit Breaker (FV and OFV) in Europe and India, and the world's first Ring Main Unit (Falcon Beta).



### Whipp & Bourne

Established in 1903, Whipp & Bourne has long been a leader in heavy-duty electrical switchgear, introducing arc and oil circuit breakers in 1908 and 1909 respectively.

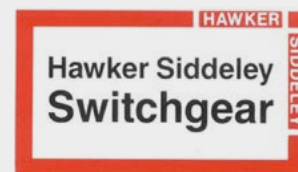
In 1975 the company launched its vacuum insulated switchgear and was acquired by Babcock International Limited. In 1987, Whipp & Bourne became part of FKI plc then merged with Hawker Siddeley in 1996.



### South Wales Switchgear

Formed in 1941 in Treforest, South Wales, South Wales Switchgear (SWS) led the way in exploiting SF<sub>6</sub> gas as a medium of interruption and insulation.

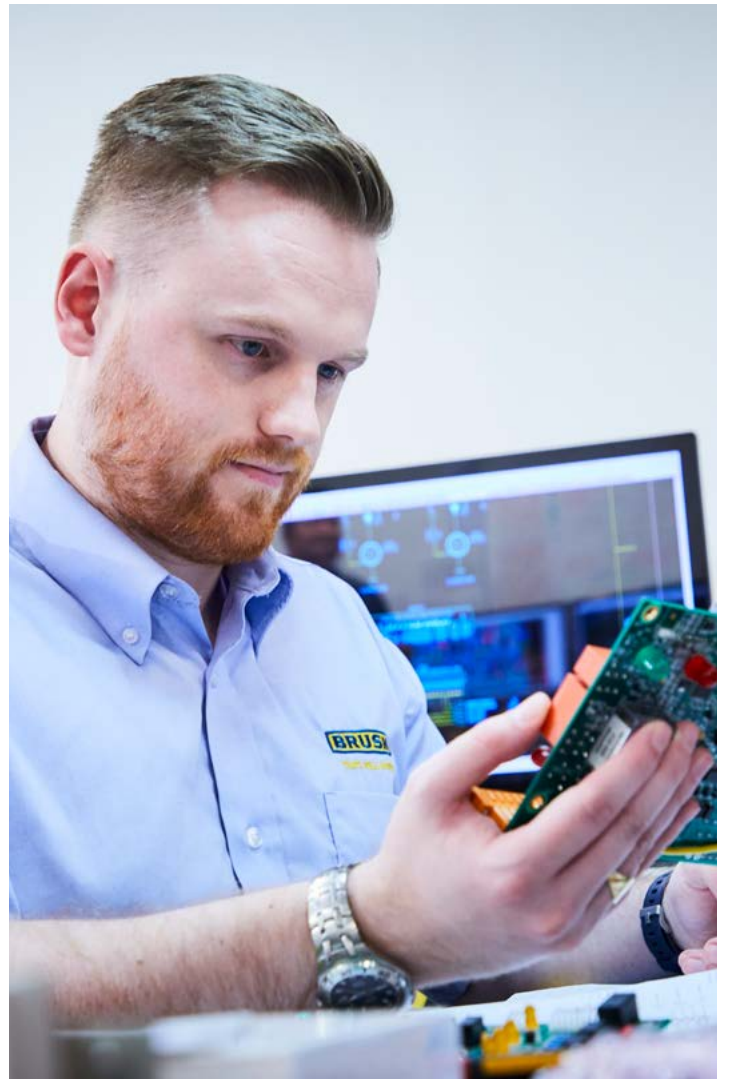
Traditionally, South Wales Switchgear were involved in the design and manufacture of 11kV – 33kV switchgear and DC type switchgear for naval projects.



### Hawker Siddeley Switchgear

In 1991, South Wales Switchgear merged with BRUSH Switchgear to form Hawker Siddeley Switchgear Ltd. Hawker Siddeley Switchgear Ltd was then acquired by FKI plc in November 1996.

The company relocated to the present Blackwood site in South Wales and created a Centre of Excellence for the manufacture of MV Distribution Switchgear. In 2008 Melrose Plc acquired FKI Switchgear where it returned to its former brand of Hawker Siddeley Switchgear.





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