

An aerial photograph of an industrial facility, likely a geothermal power plant, situated in a volcanic landscape. The facility consists of several large, light-colored buildings and cylindrical tanks. A large plume of white steam rises from one of the buildings. The surrounding terrain is rugged and rocky, with patches of green vegetation. In the background, there are rolling hills and a large body of water under a cloudy sky.

# Strategic Spare Parts Management

FAQ ABOUT PARTS. YOUR QUESTIONS ANSWERED.

# Why spare parts matter - Your top 10 questions answered

Reliable power generation is critical for our customers operations. To protect against loss of revenue through unscheduled outages and ensure the reliable operation of capital equipment, BRUSH recommend a combination of OEM certified Operational Spares, Maintenance Spares, Strategic Spares and Commissioning Spares based on site configuration and site specific operational conditions.

**In this document we will address the 10 most common questions we receive from customers concerning spare parts...**



Spare parts carefully packaged for dispatch.

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BRUSH spare parts experts are here to help.

# 1.

## Why should I buy spare parts?

The principle purpose of buying spare parts is to insure against the unscheduled interruption of power generation and to facilitate an effective maintenance regime. Whereas BRUSH generators are designed to give many years of trouble-free operation between scheduled maintenance intervals, certain components may need to be replaced to ensure the highest uptime.

Some of these parts may have long delivery times. BRUSH therefore recommends having parts stocked at site to be available, if and when needed. The cost of these parts is often when compared with the loss of revenue of an unscheduled or prolonged outage.

### Key takeaway

**The principle purpose of buying spare parts is to insure against downtime limiting of power generation.**



*“ A deliberate investment in spare parts helps us to reduce the risk of potentially lengthy power generation disruptions and maximize uptime of our plant. ”*

## 2.

# Why does BRUSH not stock all the parts I might require for my generator?

BRUSH is committed to stock as many parts for the convenience of its customers as possible. The selection of parts stocked by BRUSH is guided by the frequency of parts demand from our customers. Because many parts of a BRUSH generator are specially engineered for its application to match specific power plant requirements, BRUSH cannot stock every one of these unique component parts.

*We invest in strategic spare parts to keep downtime risk to an absolute minimum.*



### Key takeaway

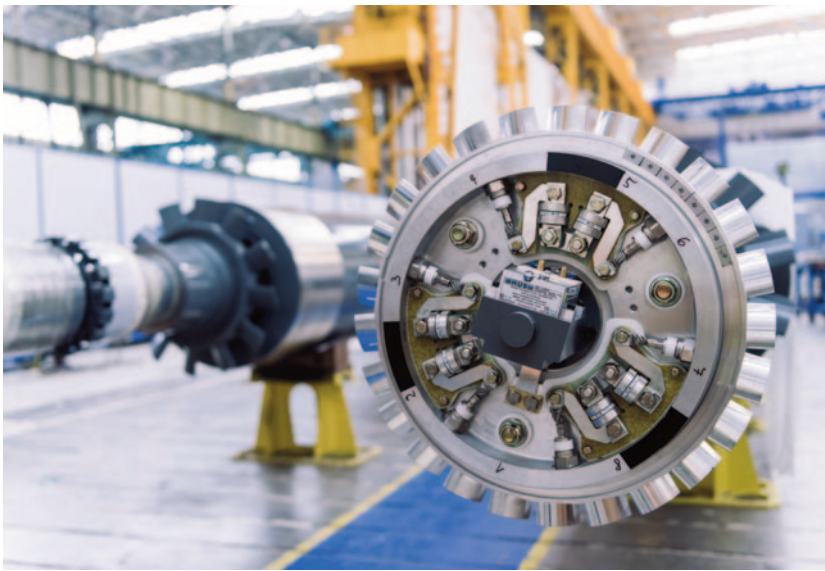
**BRUSH generators are custom-engineered for site specific applications and many parts therefore cannot practically be held in stock for all different custom-designs.**

# 3.

## What types of parts should I buy?

Different categories of spares have been established on the basis of their primary purpose. These categories serve as a guide to help plant owners distinguish and evaluate in what types of parts to invest to manage risk.

Before making stocking decisions, customers typically consider the likelihood of wear or failure, consequences of failure, lead-times for replacement parts and related opportunity costs.



### Key takeaway

**BRUSH can assist you with deciding which spares are best for you. Note that this can depend on fleet size, age, anticipated future operating regimes etc.**

## The four broad categories for spare parts are:



### Commissioning:

Spare parts, which are likely to be consumed during the installation and commissioning period. However, we recommend these parts be also maintained during the operational period of the Generator as they might need to be replaced in standard operating environment as well as during the commissioning phase.



### Operational:

Spare parts which cover requirements for operation and include components which may be required to maintain machine protection and monitoring systems.



### Maintenance:

Spares to be replaced as required, usually at scheduled outages.



### Strategic:

Spares for components which would not normally be expected to fail or sustain damage but which we recommend are held, dependent upon the strategic importance of the plant to the user, because of long lead times for their manufacture.

Our recommendation for stocking spare parts at site are usually a combination of the four categories and are determined by user's experience, policy requirements, as well as operational and financial constraints. In making a stocking decision, the user must consider the likelihood of wear or failure, the consequence of failure, the replenishment time, and the opportunity cost during that time. In making these evaluations the user needs to be aware of some hidden influences on these parameters, they include plant insurance requirements, customer regulations and potential delays, and emergency capability of the OEM. Faced with evaluating these situations for a large number of Parts, users generally and justifiably err on the side of safety when stocking spare parts as the capital investment is negligible when compared with loss of generation.

# 4.

## How do I order Spare Parts from BRUSH?

Spare parts data is provided with the acquisition of the generator inside the Operations & Maintenance handbook. Lacking these, BRUSH would be glad to help in supplying the necessary data if it has gone missing.

Spare Parts are part number driven. Because parts are specifically engineered in many cases and over time designs and material selections may have changed, it is essential to specify the serial number of the generator. An ideal inquiry would contain the following information:

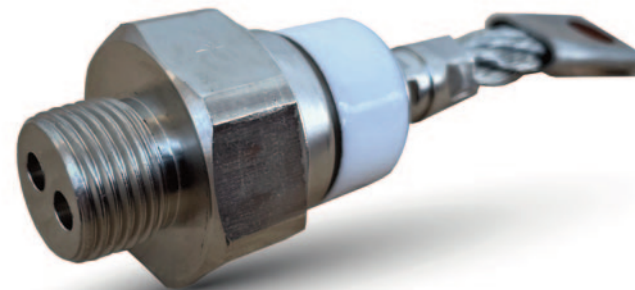
- Serial number
- Part number
- Part description
- Quantity

If part number is unknown or if in doubt BRUSH can assist.

*Ordering spare parts from BRUSH could not be simpler and ensures that our equipment is fitted with OEM parts to ensure a long and reliable life.*

### Key takeaway

**The only information we need is the serial number of your machine to identify the correct parts.**

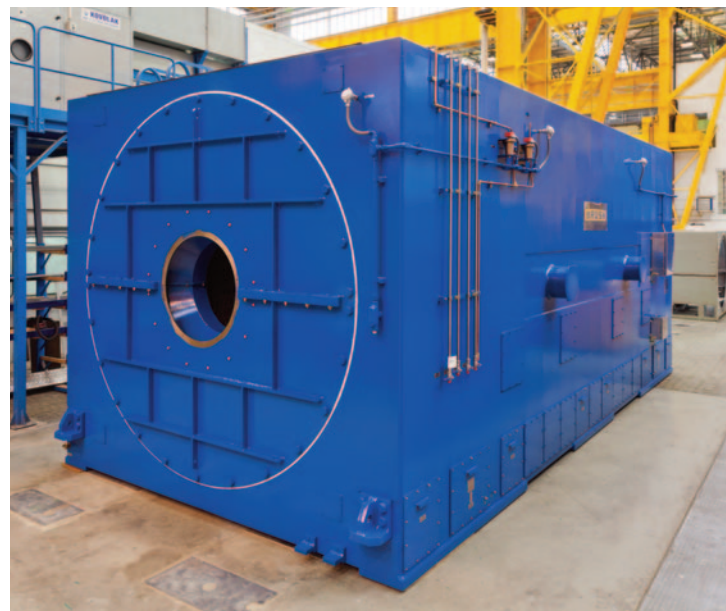


# 5.

## Why do Spare Parts numbers keep changing?

BRUSH invest continually and substantially in the improvement of its product portfolio. Great advances have been made in analytical tools, new materials and manufacturing processes. Operating experience is also fed back into the design. Most of these improvements are also incorporated into spare parts for installed generators to prolong the lifetime of the generator. The new improved part is identified with a new part number.

Buying from BRUSH means we are safe in the knowledge that we always get the latest revision of fully approved parts for our plant.



### Key takeaway

**BRUSH continues to improve its parts for its older generators (over ten years old) with new and better designs.**



# 6.

## Who is responsible for updating Parts documentation?

When quoting Spare Parts BRUSH will always identify the old part, the new part and the degree of interchangeability between them to the buyer. This data should be captured by the buyer in his operating system. Where this does not happen quotations can be delayed and in the worst instances the wrong part is bought as a result. BRUSH recommends regular Parts inventory checks which consist of review of correct Parts data in customers' data system as well as physical inspection of the Parts.

*This information needs to be captured and updated accordingly in the customer system and corresponding inventory reviewed to see if any stocked Parts have been replaced / upgraded.*



### Key takeaway

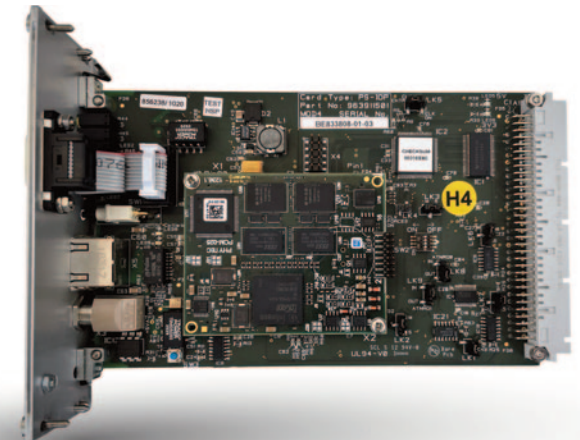
**BRUSH can advise on new Parts and Parts interchangeability and provides updated Parts.**

# 7.

## What standards and specifications should be applied to Spare Parts?

When the generator was originally purchased, standards and specifications for the equipment were clearly defined and agreed. BRUSH evolved these specifications into each component part design including all the necessary processes and acceptance standards. This data is retained in BRUSH data warehouse through drawings, process specifications, and quality plans.

When BRUSH supplies a part, it is implicit that all the original specifications are applied to the replacement part. Specifications only become a worry if the part is not supplied by BRUSH. It is therefore recommended to buy spares from BRUSH; assurance of correct specification, improvements are incorporated, guarantee of performance, and full support provided.



*We buy parts from BRUSH to ensure that all standards and specifications for our machines are adhered to and risk of failure is kept to absolute minimum.*

### Key takeaway

**All Parts brought through BRUSH will carry the correct specification to maintain the standard and specification for the Generator.**

# 8.

## Where should I buy components that BRUSH buys from a vendor?

It is a fact that many manufacturers and vendors contribute to the making of a generator. Components made by others are incorporated into the BRUSH generator. BRUSH tested these bought-in components before applying to any generator design to ensure the proper functioning with the generator. The bought-in component is at least specified and sometimes modified by BRUSH for optimal use with the generator. Operating experience can also lead to BRUSH change the specification. This information will not be available if a user would acquire the part from a 3rd party. One must be very sure of the situation before bypassing OEM's advice.

### Key takeaway

**Only when bought through BRUSH you get complete peace of mind that all parts are OEM approved, safe and reliable.**



# 9.

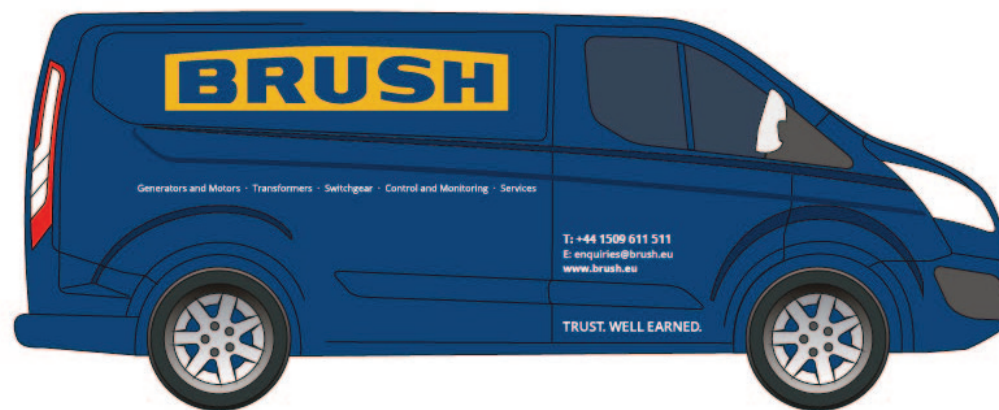
## Can I get faster delivery?

BRUSH holds a significant stock of parts however many parts are customer specific and therefore command longer lead times. Delivery can often be improved however, at times extra costs can be incurred to get material or labor premium rate. Naturally it is better and more cost effective to plan but in real emergencies BRUSH can be counted on to marshal resources to assist.

### Key takeaway

**BRUSH can support customers with expedited spare parts in urgent situations, however it is always better to have the Parts already in inventory to remove risk and avoid additional costs.**

*"The team have been fantastic in dealing with our urgent part request, getting the equipment to site in record time and really helping us out!"*



# 10.

## How can I reduce my Spare Parts inventory?

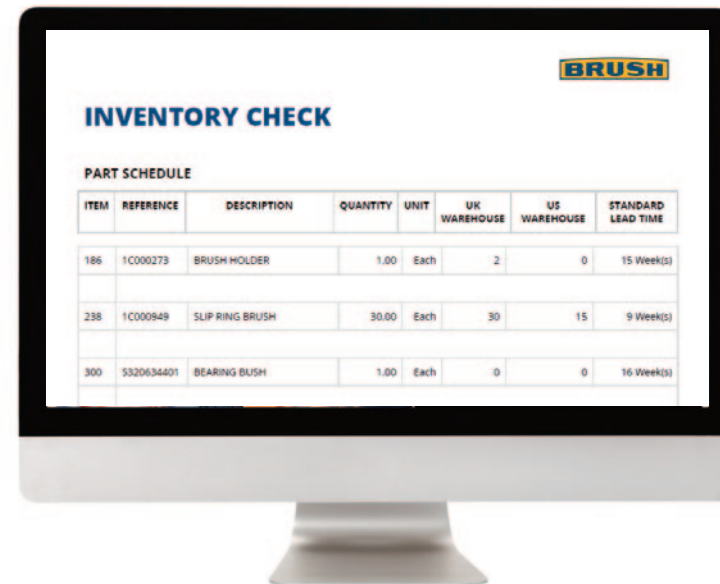
BRUSH customers can reduce spare parts inventory without materially affecting plant reliability. Here are some tips.

- Eliminate obsolete or damaged inventory, besides taking up space and incurring carrying charges, obsolete inventory gives a false sense of security
- Examine inventory for duplication. The same part could have been inventoried over the years under different stock numbers.
- Examine the inventory for interchangeability. Some parts may be suitable for several generators. – BRUSH can support you with a recommended spares list for the fleet of machines.
- Check your supplier delivery lead times and recalculate your minimum stock quantity.

“ The critical parts manager has been a fantastic tool to help us keep our parts inventory optimised and effective. ”

### Key takeaway

**BRUSH supports customers in finding the most efficient inventory holdings to help with reduced downtime and security.**



**BRUSH**

TRUST. WELL EARNED.

**IF YOU HAVE ANY DOUBTS AT ALL ...  
DON'T BE AFRAID TO GET IN TOUCH.**

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