



IN THE RIGHT PLACE. AT THE RIGHT TIME.

STANDBY SYSTEMS

SPECIAL GENERATING SETS

TRACTION SYSTEMS

COMBINED HEAT&POWER STATIONS

SERVICE

## REFERENCE LIST

### GENERATING SETS FOR MILITARY APPLICATIONS

# ABOUT THE ENERGY THAT MAKES US GO.

System solutions for generating sets: this is definitely the most concise way to sum up our work. Yet it doesn't really do justice to what we have been doing day in and day out for over 60 years. Because the quality of our work depends not only on what we do, but also on how we do it, which is what really makes the difference at KIRSCH.

Mobile solutions, stationary solutions, or more precisely, standby systems, special generating sets, traction systems and combined heat and power stations: these are clearly defined tasks that we keep facing anew because we

are guided by our customers' unique specifications – and not, for example, by rigid product categories.

Our maxim: a system solution from KIRSCH is always a solution for the customer. That is why we start each project with an intensive consulting phase in which we view the task at hand from various angles as an indispensable first step toward achieving the best possible results.



**THINKING** ON MULTIPLE LEVELS  
– A SKILL WE PRACTICE SYSTEMATICALLY.

It takes flexibility to devise custom-tailored problem solutions under constantly changing conditions – from planning all the way to final implementation. Especially in demand is our ability to think on various technical levels and link together different areas. This is an ability that we love to demonstrate when developing new products. It has spawned a long list of innovations.

The initial requirement is a team of highly qualified engineers and other specialists. People who are imbued with a heavy dose of passion, ambition, pioneering spirit and

willingness to pitch in and give everything they've got. And our ability to get enthusiastic about every new project is especially obvious each time we put a new KIRSCH system solution through its paces.

CHRONOLOGY

- 1945 Foundation
- 1959 Development of double-insulated welding transformers
- 1965 Development of portable generating sets
- 1970 Development of standby systems
- 1975 Development of capacitor-excited asynchronous generators
- 1980 Development of generating sets to meet military specifications
- 1990 Development of special systems, peak load plants and combined heat and power stations
- 1999 Development of PME (Permanent Magnetic Excitation) and VSCF (Variable Speed Constant Frequency) generating sets
- 2003 Development of APU (Auxiliary Power Units) to comply with the current European exhaust gas standard
- 2008 Takeover by the PRETTL Group
- 2009 Development of various hybrid systems



**German Army - supplied 10.000 generating sets**

**Power:** 1,9 kW / DC / 24 V  
**Engine:** Hatz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24V electrical / manual  
**Sound level:** 70 dB(A) / 7m  
**Weight:** 150 kg  
**Operation temperatures:** -30 °C / +44 °C



**Power:** 2,2 kVA / 230 V / 50 Hz  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical  
**Sound level:** 74 dB(A) / 7 m  
**Weight:** 80 kg  
**Operation temperatures:** -30 °C / +44 °C



**Power:** 2,2 kVA / 230 V / 50 Hz  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical  
**Sound level:** 74 dB(A) / 7 m  
**Weight:** 80 kg  
**Operation temperatures:** -30 °C / +44 °C



**Power:** 5 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Sachs - Stamo 282 / 2 Takt  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** manual  
**Sound level:** 78 dB(A) / 7 m  
**Weight:** 130 kg  
**Operation temperatures:** -30 °C / +44 °C



**German Army - supplied 10.000 generating sets**

**Power:** 6,5 kW / 400 V / 230 V / 50 Hz  
**Engine:** Deutz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Weight:** 325 kg  
**Operation temperatures:** -30 °C / +44 °C



**Power:** 10 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 12V electrical  
**Sound level:** 70 dB (A) / 7 m  
**Weight:** 480 kg  
**Operation temperatures:** -30 °C / +44 °C



**German Army - supplied 10.000 generating sets**

**Power:** 37 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Deutz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Operation temperatures:** -30 °C / +44 °C



**Power:** 100 kW / 400 V / 230 V / 50 Hz  
**Engine:** Deutz/Diesel  
**Alternator:** synchronous IP 23  
**Speed:** 1500 rpm  
**Start:** 24V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Operation temperatures:** -30 °C / +49 °C



**Test control unit for generating sets:**

- 0,5 / 1,2 kW DC / 24 V
- 1,9 kW DC / 24 V
- 2,2 kW / 230 V
- 5 kVA / 400 V / 230 V
- 6,5 kW / 400 V / 230 V

The test control unit is suitable for failure investigation from engine, generator and switch box.

Weight: 40 kg



**Swiss Army - supplied 13.000 generating sets**

**Power:** 0,5 / 1,5 / 2,5 / 4 kVA / 230 V / 50 Hz  
**Engine:** Kubota/Petrol  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** manual  
**Sound level:** 75 dB(A) / 7 m  
**Weight:** 40 / 58 / 80 / 115 kg  
**Operation**  
**temperatures:** -20 °C / +40 °C  
**Protectionclass** II



**Power:** 1,2/2 kW / DC / 24 V  
**Engine:** Kubota/Petrol  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** manual  
**Sound level:** 72 dB(A) / 7 m  
**Weight:** 61 kg  
**Operation**  
**temperatures:** -20 °C / +40 °C



**Power:** 6 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Weight:** 260 kg  
**Operation**  
**temperatures:** -20 °C / +40 °C



**Power:** 6 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 12 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Weight:** 430 kg  
**Fuel tank:** 36 l  
**Operation**  
**temperatures:** -20 °C / +40 °C



**Swiss Army - supplied 13.000 generating sets**

**Power:** 37 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Deutz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Operation temperatures:** -30 °C / +44 °C



**Power:** 6 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 12 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Weight:** 430 kg  
**Fuel tank:** 20 l  
**Operation temperatures:** -20 °C / +40 °C



**Power:** 12 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 12 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Weight:** 400 kg  
**Fuel tank:** 36 l  
**Operation temperatures:** -20 °C / +40 °C



**Power:** 12 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 12 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Weight:** 520 kg  
**Fuel tank:** 36 l  
**Operation temperatures:** -20 °C / +40 °C



**Swiss Army - supplied 13.000 generating sets**

**Power:** 25 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Deutz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 1500 rpm  
**Start:** 12 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Weight:** 960 kg  
**Fuel tank:** 65 l  
**Operation temperatures:** -20 °C / +40 °C



**VSCF (Variable Speed Constant Frequency) technology**

**Power:** 8 - 44 kVA / 400 V / 230 V / 50 Hz / VSCF  
**Engine:** Deutz/Diesel  
**Alternator:** Kirsch PME  
**Speed:** 1300 - 2600 rpm  
**Start:** 12 V electrical  
**Sound level:** 65 - 70 dB(A) / 7 m  
**Weight:** 1100kg  
**Fuel tank:** 65 l  
**Operation temperatures:** -20 °C / +40 °C



**Power:** 8 - 44 kVA / 400 V / 230 V / 50 Hz / VSCF  
**Engine:** Deutz/Diesel  
**Alternator:** Kirsch PME  
**Speed:** 1300 - 2600 rpm  
**Start:** 24 V electrical  
**Sound level:** 65 - 70 dB(A) / 7m  
**Weight:** 980 kg  
**Operation temperatures:** -20 °C / +40 °C



**Why VSCF technology?**

- Clear cost-cutting over the entire period of utilisation (LCC – life cycle costs)
- Reduced sound emissions
- Low fuel consumption
- Optimum combustion for low loads
- Reduced pollutants emissions
- Longer service life (MTBF)
- Wide power spectrum
- Less variety of resources



**British Army - supplied 100 generating sets**

**Power:** 20 kVA / 400 V / 230 V / 115 V / 50 Hz  
**Engine:** Deutz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 1500 rpm  
**Start:** 12 V electrical  
**Sound level:** 63 dB(A) / 7 m  
**Fuel tank:** 68 l  
**Weight:** 980 kg  
**Operation temperatures:** -20°C / +40 °C



**Power:** 9 kVA / 400 V / 230 V / 115 V / 50 Hz  
**Engine:** Ruggerini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 12 V electrical  
**Sound level:** 70 dB(A)/7m  
**Fuel tank:** 20 l  
**Weight:** 230 kg  
**Operation temperatures:** -20 °C / +40 °C

The generating set is suitable for stand alone and parallel operation with up to three generating sets of the same type

In case of parallel operation the start-up of the generating sets has to take place in accordance with the operating instructions of the parallel connection unit



**Dutch Army - supplied 2000 generating sets**

**Power:** 1,9 kW / DC / 24 V  
**Engine:** Hatz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24V electrical/ manual  
**Sound level:** 70 dB(A) / 7 m  
**Fuel tank:** 13 l  
**Weight:** 150 kg  
**Operation temperatures:** -30 °C / +44 °C



**Power:** 2,2 kVA / 230 V / 50 Hz  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical  
**Sound level:** 74 dB(A) / 7 m  
**Weight:** 80 kg  
**Operation temperatures:** -32 °C / +44 °C



**Power:** 3 / 6 kW / 230 V / 50 Hz  
**Engine:** Hatz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical / manual  
**Sound level:** 70 dB(A) / 7 m  
**Fuel tank:** 36 l  
**Weight:** 270kg / 430 kg  
**Operation temperatures:** -32 °C / +44 °C



**Power:** 25 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Hatz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 1500 rpm  
**Start:** 24 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Fuel tank:** 60 l  
**Weight:** 1000 kg  
**Operation temperatures:** -32 °C / +44 °C



### Dutch Army - supplied 2.000 generating sets

**Power:** 35 kW / 400 V / 230 V / 50 Hz  
**Engine:** Deutz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Start:** 24 V electrical  
**Sound level:** 65 dB(A) / 7m  
**Fuel tank:** 200 l  
**Operation temperatures:** -32 °C / +44 °C  
 The generating set is suitable for stand alone and parallel operation with up to three generating sets of the same type



**Power:** 75 kW/400V/230V/50Hz  
**Engine:** Deutz/Diesel  
**Alternator:** synchronous IP 23  
**Start:** 24 V electrical  
**Sound level:** 65 dB(A) / 7 m  
**Fuel tank:** 270 l  
**Operation temperatures:** -32 °C / + 44 °C

The generating set is suitable for stand alone and parallel operation with up to three generating sets of the same type



### New Zealand Army - supplied 380 generating sets

**Power:** 1,9 kW / DC / 24 V  
**Engine:** Hatz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** manual  
**Sound level:** 70 dB(A) / 7 m  
**Weight:** 120 kg  
**Operation temperatures:** -25 °C / +49 °C



**Power:** 5,0 kVA / 230 V / 50 Hz  
**Engine:** Hatz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Fuel tank:** 36 l  
**Weight:** 430 kg  
**Operation temperatures:** -32°C / +44 °C



## Slovenian Army - supplied 600 generating sets

**Power:** 1,5/2,5 kVA / 230 V / 50 Hz  
**Engine:** Kubota/Petrol  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** manual  
**Sound level:** 75 dB(A) / 7 m  
**Weight:** 58 kg / 80 kg  
**Operation temperatures:** -20 °C / +40 °C



**Power:** 2 kW / DC / 24 V  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical/manual  
**Sound level:** 76 dB(A) / 7 m  
**Weight:** 120 kg  
**Operation temperatures:** -20 °C / +40 °C



**Power:** 3,5 kVA / 230 V / 50 Hz  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 12 V electrical / manual  
**Sound level:** 76 dB(A) / 7 m  
**Weight:** 120 kg  
**Operation temperatures:** -20 °C / +40 °C



## Slovenian Army - supplied 600 generating sets

**Power:** 9 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Ruggerini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 12 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Fuel tank:** 20 l  
**Weight:** 230 kg  
**Operation temperatures:** -20 °C / +40 °C



**Power:** 10 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Lombardini/Diesel  
**Alternator:** synchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Weight:** 480 kg  
**Operation temperatures:** -20 °C / + 40 °C



### Hydraulic light

**Power:** 18 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Deutz/Diesel  
**Alternator:** synchronous IP 23  
**Speed:** 1500 rpm  
**Start:** 24 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Operation temperatures:** -20 °C / +40 °C



Civil protection and disaster relief for the Republic of Slovenia.  
Generating set 18 kVA with lights on a 9m hydraulic telescopic  
mast mounted on a single-axle trailer.



### Slovenian Army - supplied 600 generating sets

**Power:** 20 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Deutz/Diesel  
**Alternator:** synchronous IP 23  
**Speed:** 1500 rpm  
**Start:** 12 V electrical  
**Sound level:** 63 dB(A) / 7 m  
**Fuel tank:** 58 l  
**Weight:** 1100 kg  
**Operation temperatures:** -20 °C / +40 °C



#### Pneumatic light

**Power:** 20 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Deutz/Diesel  
**Alternator:** synchronous IP 23  
**Speed:** 1500 rpm  
**Start:** 24 V electrical  
**Sound level:** 60 dB(A) / 7 m  
**Fuel tank:** 70 l  
**Weight:** 2400 kg  
**Operation temperatures:** -20 °C / +40 °C



#### Pneumatic light

**Power:** 20 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Deutz/Diesel  
**Alternator:** synchronous IP 23  
**Speed:** 1500 rpm  
**Start:** 24 V electrical  
**Sound level:** 60 dB(A) / 7 m  
**Fuel tank:** 70 l  
**Weight:** 2400 kg  
**Operation temperatures:** -20 °C / +40 °C



**Slovenian Army - supplied 600 generating sets**

Power: 125 kVA / 400 V / 230 V / 50 Hz  
 Engine: IVECO/Diesel  
 Alternator: synchronous IP 23  
 Speed: 1500 rpm  
 Start: 12 V/24 V electrical  
 Sound level: 67 dB(A) / 7 m  
 Fuel tank: 180 l  
 Weight: 3200 kg  
 Operation temperatures: -20 °C / +40 °C



**20' Container**

**Power:** 300 kVA / 400 V / 230 V / 50 Hz  
 Engine: IVECO/Diesel  
 Alternator: synchronous IP 23  
 Speed: 1500 rpm  
 Start: 24 V electrical  
 Sound level: 65 dB(A) / 7m  
 Fuel tank: 1000 l  
 Operation temperatures: -20 °C / +40 °C



### Luxemburg Army - supplied 30 generating sets

**Power:** 2,6 kW / 230 V / 50 Hz  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical/manual  
**Sound level:** 76 dB(A) / 7 m  
**Fuel tank:** 5 l  
**Weight:** 80 kg  
**Operation temperatures:** -20 °C / +40 °C



**Power:** 2 kW / DC / 24 V  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical/manual  
**Sound level:** 76 dB(A) / 7 m  
**Fuel tank:** 5 l  
**Weight:** 75 kg  
**Operation temperatures:** -20 °C / +40 °C



### Austrian Army - supplied 250 generating sets

**Power:** 1,2 kW / DC / 24 V  
**Engine:** Kubota/Petrol  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** manual  
**Sound level:** 72 dB(A) / 7 m  
**Weight:** 61 kg  
**Operation temperatures:** -20 °C / +40 °C



### Hungarian Army - supplied 150 generating sets

**Power:** 2 kW / DC / 24 V  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical-automatic /manual  
**Sound level:** 76 dB(A) / 7 m  
**Fuel tank:** 5 l  
**Weight:** 110 kg  
**Operation temperatures:** -20 °C / +40 °C



**Power:** 4 kVA / 230V / 50 Hz  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 12 V electrical/manual  
**Sound level:** 76 dB(A) / 7 m  
**Fuel tank:** 5 l  
**Weight:** 115 kg  
**Operation temperatures:** -20 °C / +40 °C



**Power:** 9 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Ruggerini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 12 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Fuel tank:** 20 l  
**Weight:** 230 kg  
**Operation temperatures:** -20 °C / +40 °C



### Hungarian Army - supplied 150 generating sets

**Power:** 9 kVA / 230 V / 50 Hz  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 12 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Weight:** 520 kg  
**Fuel tank:** 36 l  
**Operation temperatures:** -20 °C / +40 °C



**Power:** 6 / 12 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Lombardini/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 12 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Weight:** 430 kg/520 kg  
**Fuel tank:** 36 l  
**Operation temperatures:** -20 °C / +40 °C



**Power:** 20 / 40 kVA / 400 V / 230 V / 50 Hz  
**Engine:** Deutz/Diesel  
**Alternator:** synchronous IP 23  
**Speed:** 1500 rpm  
**Start:** 12 V electrical  
**Sound level:** 63 dB(A)/7m  
**Fuel tank:** 68l  
**Weight:** 980 kg  
**Operation temperatures:** -20°C / + 40°C



## Hungarian Army - supplied 150 generating sets

**Power:** 25 kVA / 230 V / 50 Hz  
**Engine:** Hatz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 1500 rpm  
**Start:** 24 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Fuel tank:** 60 l  
**Operation temperatures:** -20 °C / +40 °C



**Power:** 25 kVA / 230 V / 50 Hz  
**Engine:** Hatz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 1500 rpm  
**Start:** 24 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Fuel tank:** 60 l  
**Operation temperatures:** -20 °C / + 40 °C



**Power:** 8 - 44 kVA / 400 V / 230 V / 50 Hz / VSCF  
**Engine:** Deutz/Diesel  
**Alternator:** Kirsch PME  
**Speed:** 1300 - 2600 rpm  
**Start:** 24 V electrical  
**Sound level:** 65 - 70 dB(A) / 7 m  
**Weight:** 1350 kg  
**Fuel tank:** 104 l  
**Operation temperatures:** -20 °C / +40 °C



### Norwegian Army - supplied 160 generating sets

**Power:** 7,5 kVA / 230 V / 3~ / 50 Hz  
**Engine:** Hatz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Weight:** 430 kg  
**Operation temperatures:** -32 °C / +44 °C

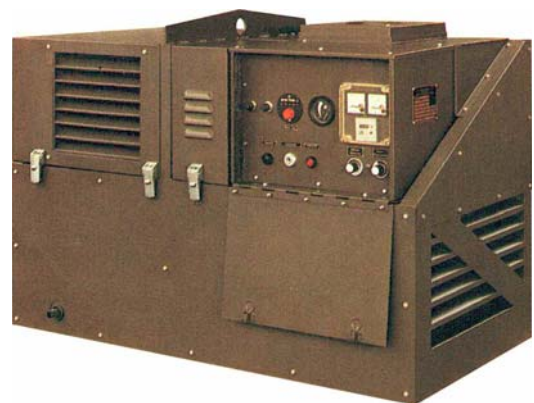


**Power:** 25 kVA / 230 V / 3~ / 50 Hz  
**Engine:** Hatz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 1500 rpm  
**Start:** 24 V electrical  
**Sound level:** 70 dB(A) / 7 m  
**Fuel tank:** 60 l  
**Weight:** 1000 kg  
**Operation temperatures:** -32 °C / +44 °C



### Syrian Army - supplied 150 generating sets

**Power:** 5,6 kW / DC / 12 V  
**Engine:** Deutz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 12 V electrical/manual  
**Sound level:** 70 dB(A) / 7 m  
**Fuel tank:** 10 l  
**Weight:** 370kg  
**Operation temperatures:** -15 °C / +44 °C



**NATO - AFCENT - supplied 30 generating sets**

**Power:** 75 kW / 400 V / 230 V / 50 Hz  
**Engine:** Deutz/Diesel  
**Alternator:** synchronous IP 23  
**Start:** 24 V electrical  
**Sound level:** 65 dB(A) / 7 m  
**Operation**  
**Temperatures:** -32 °C / +44 °C

The generating set is suitable for stand alone and parallel operation with up to three generating sets of the same type



### Belgian Army - supplied 440 generating sets

**Power:** 1 kW / DC / 24 V  
**Engine:** Kubota/Petrol  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** manual  
**Sound level:** 75 dB(A) / 7 m  
**Weight:** 58 kg  
**Operation temperatures:** -20 °C / +40 °C



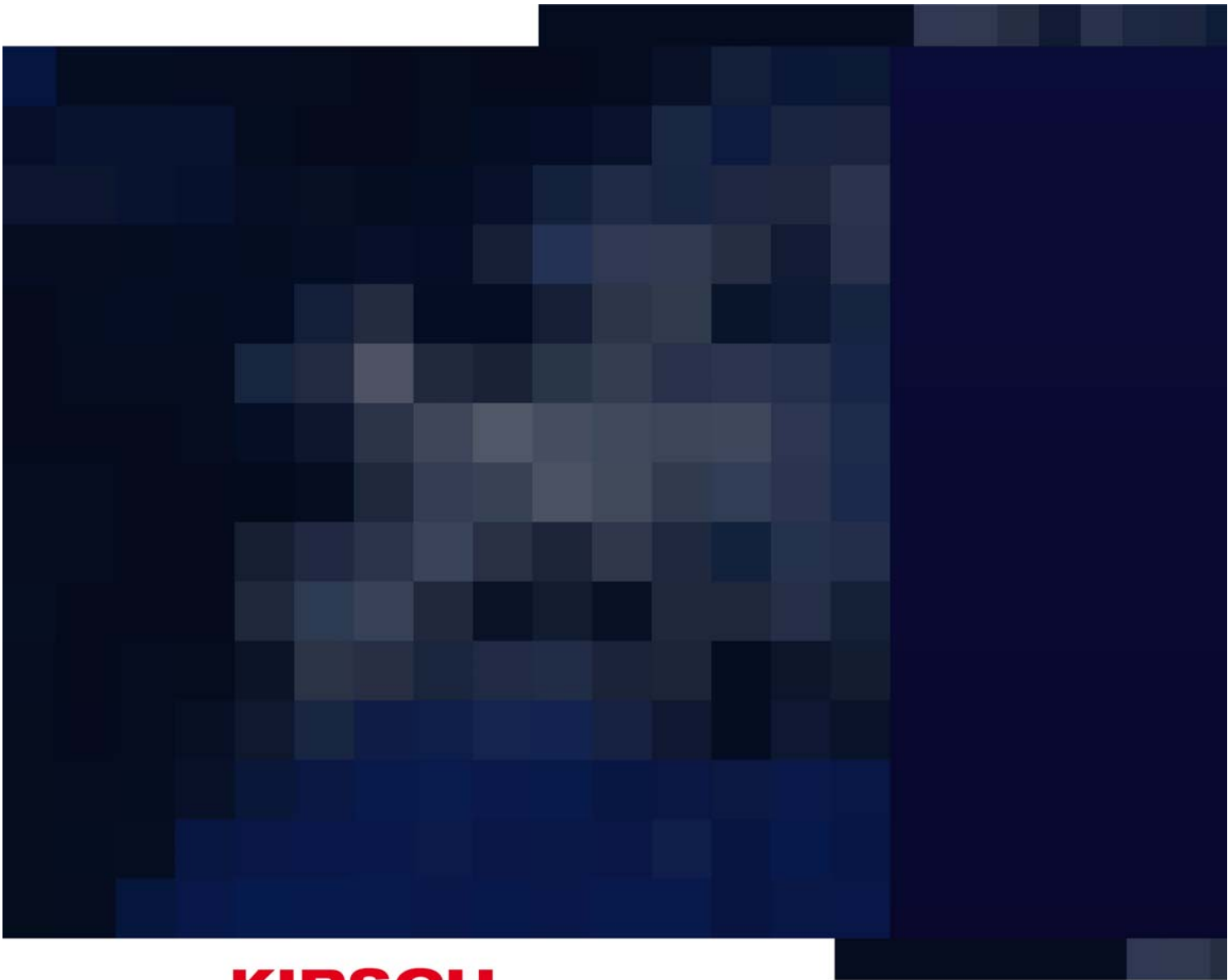
**Power:** 1,5 kVA / 230 V / 50 Hz  
**Engine:** Hatz/Diesel  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24 V electrical/manual  
**Sound level:** 76 dB(A) / 7 m  
**Weight:** 120 kg  
**Operation temperatures:** -20 °C / +40 °C  
**Protection class II**



### Oman Army - supplied 210 generating sets

**Power:** 1,9 kW combined AC / 230 V and DC / 24 V  
**Engine:** Kubota/Petrol  
**Alternator:** Kirsch asynchronous IP 54  
**Speed:** 3000 rpm  
**Start:** 24V electrical/manual  
**Sound level:** 75 dB(A) / 7 m  
**Weight:** 80kg  
**Operation temperatures:** -20 °C / +49 °C





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