



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 TRACTION SYSTEMS

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

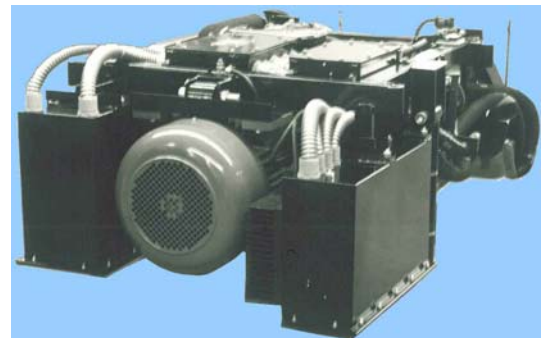


Engine producer VW

Production from 1973 - 1991 more than 200 Generating Sets

Nominal power 25 kW - 40 kW

Location/City: Bern (CH)
Genf (CH)
Lausanne (CH)
Luzern (CH)
Zürich (CH)
Pilsen (CZ)
Arnhem (NL)
San Francisco (USA)



Engine producer DEUTZ

Production from 1994 - 2004 approx. 100 Generating Sets

Nominal power 40 kW, 45 kW and 60 kW

Location/City: Montreux (CH)
Bern (CH)
Biel (CH)
Pilsen (CZ)
Solingen (DE)
Arnhem (NL)
Mailand (IT)
Modena (IT)



APU 50 DPE

COM II A / COM III A

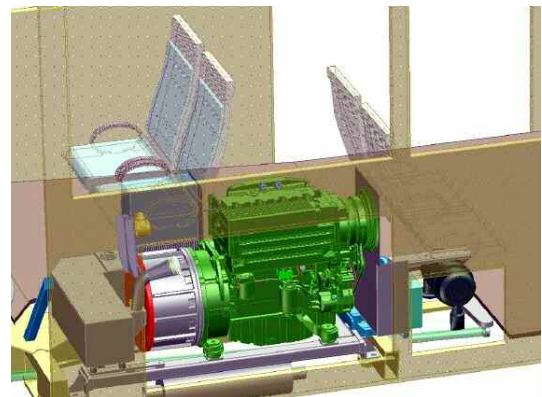
Arnhem (NL)

20 APU 50 DPE 2000 - 2002
Nominal power/Nominal voltage: 50 kW/745 V DC
Engine: DEUTZ 1011/COM II A



Salzburg (AT)

8 APU 50 DPE 2004
Nominal power/Nominal voltage: 50 kW/745 V DC
Engine: DEUTZ 2011/COM II A



Genf (CH)

48 APU 50 DPE 2004 - 2006
Nominal power/Nominal voltage: 50 kW/745 V DC
Engine: DEUTZ 2011/COM II A

Luzern (CH)

3 APU 50 DPE 2006
Nominal power/Nominal voltage: 50 kW/745 V DC
Engine: DEUTZ 2011/COM II A



Zürich (CH)

17 APU 50 DPE 2006
Nominal power/Nominal voltage: 50 kW/745 V DC
Engine: DEUTZ 2011/COM II A

Zürich II und BIEL (CH)

29 APU 50 DPE 2007
Nominal power/Nominal voltage: 50 kW/745 V DC
Engine: DEUTZ 2011/COM II A

St. Gallen (CH)

24 APU 50 DPE - 2008/09/10
Nominal power/Nominal voltage: 50 kW/745 V DC
Engine: DEUTZ 2011/COM III A



Arnhem (NL)

9 APU 50 DPE 2009
Nominal power/Nominal voltage: 50 kW/745 V DC
Engine: DEUTZ 2011/COM III A

Luzern (CH)

16 APU 50 DPE 2008-2009
Nominal power/Nominal voltage: 50 kW/745 V DC
Engine: DEUTZ 2011/COM III A

Salzburg (AT)

23 APU 50 DPE 2009/10/11
Nominal power/Nominal voltage: 50 kW/745 V DC
Engine: DEUTZ 2011/COM III A

Neuchatel (CH)

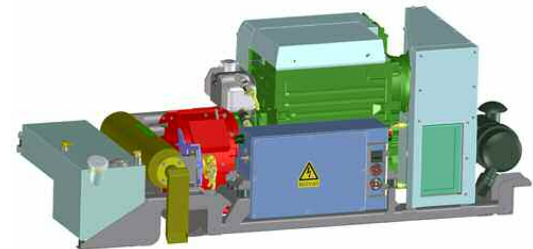
20 APU 50 DPE 2009/10
Nominal power/Nominal voltage: 50 kW/745 V DC
Engine: DEUTZ 2011/COM III A

Sofia (BG)

30 APU 50 DPE 2010
Nominal power/Nominal voltage: 50 kW/745 V DC
Engine: Deutz 2011/COM III A

Landskrona (SE)

1 APU 50 DPE – 2010
Nominal power/Nominal voltage: 50 kW/745 V DC
Engine: DEUTZ 2011/COM III A



APU 80 DIPME

EURO III - EURO V



Solingen (DE)

35 APU 80 DPE 2000 - 2002
Nominal power/Nominal voltage: 80 kW/600 V DC
Engine: DEUTZ 1013/COM III A

Bergen (NO)

6 APU 80 DIPME 2003
Nominal power/Nominal voltage: 80 kW/708 V DC
Engine: Iveco NEF 4-cyl./EURO III



Neapel (IT)

10 APU 80 DIPME 2004
Nominal power/Nominal voltage: 80 kW/708 V DC
Engine: Iveco NEF 4-cyl./EURO III

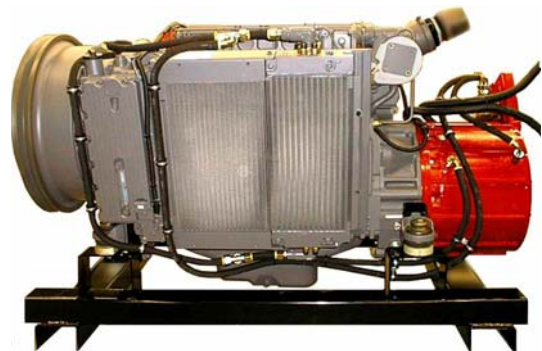


Debrecen (HU)

5 APU 80 DIPME 2004 - 2005
Nominal power/Nominal voltage: 80 kW/708 V DC
Engine: Iveco NEF 4-cyl./EURO III

Luzern (CH)

10 APU 80 DIPME 2006
Nominal power/Nominal voltage: 80 kW/708 V DC
Engine: Iveco NEF 4-cyl./EURO III

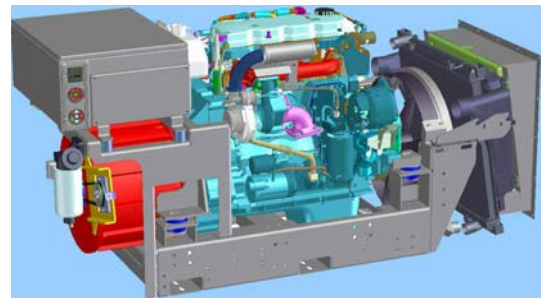


Lecce (IT)

12 APU 80 DIPME 2007
Nominal power/Nominal voltage: 80 kW/708 V DC
Engine: Iveco NEF 4-cyl./EURO IV

San Remo (IT)

2 APU 80 DIPME 2007
Nominal power/Nominal voltage: 80 kW/708 V DC
Engine: Iveco NEF 4-cyl./EURO IV



Avelino (IT)

11 APU 80 DIPME 2009
Nominal power/Nominal voltage: 80 kW/708 V DC
Engine: Iveco NEF 4-cyl./EURO V

Bari (IT)

3 APU 80 DIPME 2009
Nominal power/Nominal voltage: 80 kW/708 V DC
Engine: Iveco NEF 4-cyl./EURO V



Chieti (IT)

5 APU 80 DIPME 2010
Nominal power/Nominal voltage: 80 kW/708 V DC
Engine: Iveco NEF 4-cyl./EURO V

APU 100 DIPME

EURO III - EURO V

Winterthur (CH)

10 APU 100 DIPME 2005
Nominal power/Nominal voltage: 100 kW/700 V DC
Engine: Iveco NEF 4-cyl./EURO III

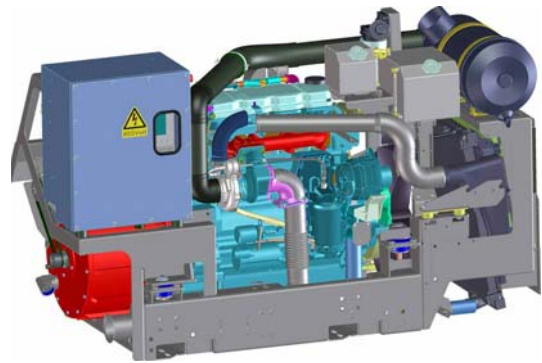


Minsk (BY)

1 APU 100 DIPME 2006
Nominal power/Nominal voltage: 100 kW/700 V DC
Engine: Iveco NEF 4-cyl./EURO III

Debrecene (HU)

11 APU 100 DIPME 2007
Nominal power/Nominal voltage: 100 kW/708 V DC
Engine: Iveco NEF 4-cyl./EURO IV



Timisoara (RO)

50 APU 100 DIPME 2007/08
Nominal power/Nominal voltage: 100 kW/708 V DC
Engine: Iveco NEF 4-cyl./EURO IV

Riga (LV)

90 APU 100 DIPME 2007/08/09
Nominal power/Nominal voltage: 100 kW/708 V DC
Engine: Iveco NEF 4-cyl./EURO IV



Minsk (BY)

1 APU 100 DIPME 2008
Nominal power/Nominal voltage: 100 kW/708 V DC
Engine: Iveco NEF 4-cyl./EURO IV

Mailand (IT)

50 units APU 100 DIPME 2008/09
Nominal power/Nominal voltage: 100 kW/708 V DC
Engine: Iveco NEF 4-cyl./EURO V



Solingen (D)

15 APU 100 DIPME 2008/09
Nominal power/Nominal voltage: 100 kW/700 V DC
Engine: Iveco NEF 4-cyl./EURO V

Several Cities (CZ/SK)

16 APU 100 DIPME 2007/08/09/10
Nominal power/Nominal voltage: 100 kW/700 V DC
Engine: Iveco NEF 4-cyl./EURO IV



Coimbra (PT)

1 APU 100 DIPME 2009
Nominal power/Nominal voltage: 100 kW/700 V DC
Engine: Iveco NEF 4-cyl./EURO V

lausanne (CH)

35 APU 100 DIPME 2009/10
Nominal power/Nominal voltage: 100 kW/700 V DC
Engine: Iveco NEF 4-cyl./EURO V

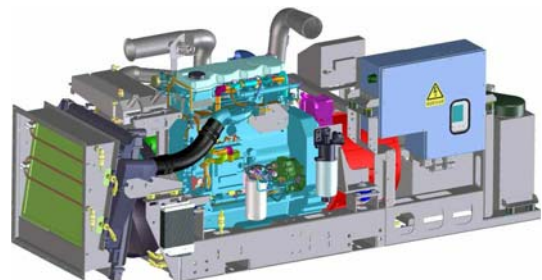


Fribourg (CH)

12 APU 100 DIPME 2010
Nominal power/Nominal voltage: 100 kW/700 V DC
Engine: Iveco NEF 4-cyl./EURO V

Minsk (BY)

1 APU 100 DIPME 2010
Nominal power/Nominal voltage: 100 kW/700 V DC
Engine: Iveco NEF 4-cyl./EURO IV



Eberswalde (D)

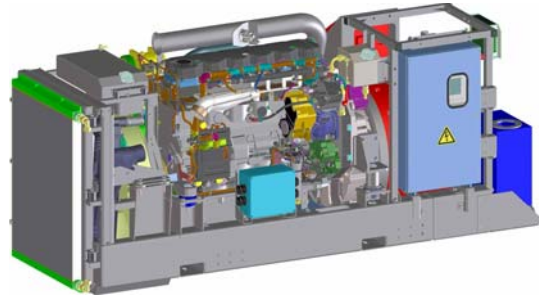
12 APU 100 DIPME 2010/11
Nominal power/Nominal voltage: 100 kW/700 V DC
Engine: Iveco NEF 4-cyl./EURO V

MPU 175 DIPME - Duo-Buses

EURO IV - EURO V

Genua (IT)

17 MPU 175 DIPME 2007
Nominal power/Nominal voltage: 175 kW/700 V DC
Engine: Iveco NEF 6-cyl./EURO IV



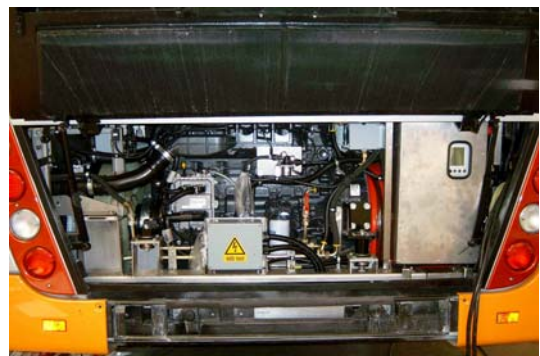
Rimini (IT)

7 MPU 175 DIPME 2007
Nominal power/Nominal voltage: 175 kW/700 V DC
Engine: Iveco NEF 6-cyl./EURO IV



Bologna (IT)

11 MPU 175 DIPME 2010
Nominal power/Nominal voltage: 175 kW/700 V DC
Engine: Iveco NEF 6-cyl./EURO V



Fribourg (CH)

9 G 175 DMPME 2003
Nominal power/Nominal voltage: 175 kW/700 V DC
Engine: MAN D0836/EURO III

MPU 200 DIPME/EURO V

Hybrid-Buses

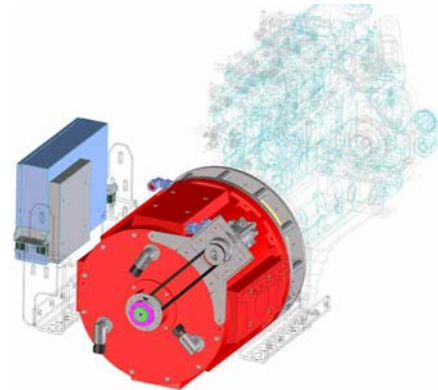
Hybridbus (several cities in D and CH) 2009/2010
10 MPU 200 DIPME 2010
Nominal power/Nominal voltage: 195 kW/700 V DC
Motor: Iveco NEF 6-cyl./EURO V



PME Alternators

Hybridbusse

Eindhoven (NL)
12 KIRSCH PME-Alternators 2000-2003
Nominal power 150 kW
Engine: customer supplied liquid gas engine



Luxembourg (LU)
2 KIRSCH PME-Alternators 2009
Nominal power 200 kW
Motor: customer supplied diesel engine

Darmstadt (DE)
2 KIRSCH PME-Alternators 2010
Nominal power 200 kW
Motor: customer supplied diesel engine

Enschede (NL)
2 KIRSCH PME-Alternators 2009
Nominal power 200 kW
Motor: customer supplied diesel engine

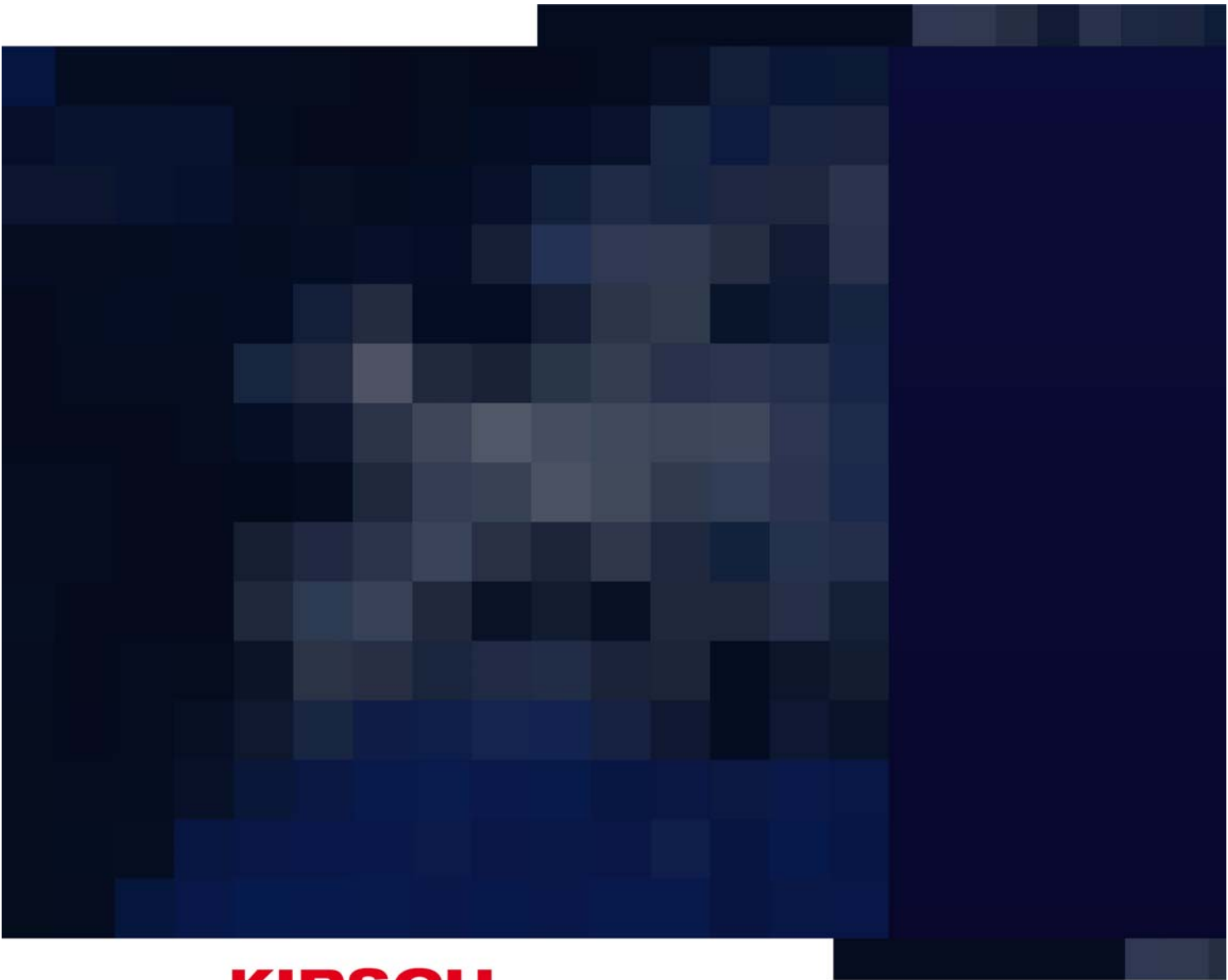


Südkorea
1 KIRSCH PME-Alternator 2008
Nominal power 150 kW
Motor: customer supplied diesel engine

Hybrid- Locomotive

Alstom
1 MPU 200 DDPME 2006 (Prototype)
Nominal power: 200 kW
Nominal voltage: 600 V DC
Engine: DEUTZ TCD 2013/COM III A
Generating set for electrical power supply of the
Alstom hybridlocomotive BR 202





KIRSCH
energy systems

Kirsch GmbH • Biewerer Str. 231 • 54293 Trier • Germany
Phone: +49 (0)651 966 00 • Fax: +49 (0)651 966 0400 • info@kirsch-energie.de • www.kirsch-energie.de