Diesel Engines Series 2000
Stationary Power Generation
MTU Friedrichshafen in Germany and the Detroit Diesel Corporation in the USA - two DaimlerChrysler companies - have combined their off-highway operations.

The combination of the MTU and Detroit Diesel product ranges, supplemented by Mercedes-Benz and VM Motori engines, has created a leading global supplier of engines and systems for the agricultural and construction sectors as well as for heavy-duty vehicles and marine, rail and power generation applications.

In the power generation field MTU system solutions provide technical perfection which is commercially viable. 100,000 MTU and DDC engines and gensets, delivered worldwide prove themselves daily in demanding operational conditions.

MTU has at its disposal a unique drive system know-how and excellent product quality, which results from MTU’s innovative capabilities, reliability, as well as an immense system competence. MTU’s complete product and customer support will ensure that the highest availability is achieved, wherever you are.

A worldwide network of affiliates, agencies and support centers with MTU trained personnel assures expert engine maintenance 24 hours a day.

Series 2000

Model 18V 2000

MTU engines are the basis for the realization of reliable and economically efficient drive solutions. Apart from their reliability and long life-time the engines of the 2000 series have low fuel consumption and emission values at attractively competitive prices.

A large choice of integrated accessories reduces the engineering expenses the unit producer would otherwise have to invest.

The electronic engine management system has been designed to take over a variety of control and monitoring functions to the effect of a considerably reduced planning expenditure making the unit control easier and its price more reasonable. The operator benefits from the engines low fuel consumption and emission values, excellent load acceptance behaviour and, not to forget, from the safety of a worldwide service network.

Optimized for fuel consumption or exhaust emission, the switchable speed engines of the 2000 series cover a perfectly harmonized scope of performances and offer the optimal solution to comply with any individual application.

Your Benefits:

Very Low Assembly and Engineering Expenditure
- Various accessories integrated (cooler, cooling fan etc.)
- Optimal interface arrangement
- Flexible system and unit planning

Optimal Operating Behaviour
- Low vibration operation
- Constant engine power available at intake air temperatures of up to 40°C and site altitudes of up to 400 m above sea level
- Excellent load acceptance behaviour
- High speed or frequency stability

Environmental Compatibility
- Complies with international emission rules
- Low fuel and lube-oil consumption
- Low particle emissions
- Low noise and vibration levels
- Environmentally favourable paint finish

High Availability and Reliability
- Long life-time
- 24 hour service
- Worldwide customer service network with 2,250 support points
- Electronic engine management system with selfdiagnosis function

Low Life Cycle Costs
- Competitive price
- Low fuel consumption
- Low lube-oil consumption
- Easy to service
- High TBO
- REMAN parts
MTU Friedrichshafen in Germany and the Detroit Diesel Corporation in the USA - two DaimlerChrysler companies - have combined their off-highway operations.

The combination of the MTU and Detroit Diesel product ranges, supplemented by Mercedes-Benz and VM Motorex engines, has created a leading global supplier of engines and systems for the agricultural and construction sectors as well as for heavy-duty vehicles and marine, rail and power generation applications.

In the power generation field MTU system solutions provide technical perfection which is commercially viable. 100,000 MTU and DDC engines and gensets, delivered worldwide prove themselves daily in demanding operational conditions.

MTU has at its disposal a unique drive system know how and excellent product quality, which results from MTU’s innovative capabilities, reliability, as well as an immense system competence. MTU’s complete product and customer support will ensure that the highest availability is achieved, wherever you are.

A world wide network of affiliates, agencies and support centers with MTU trained personnel assures expert engine maintenance 24 hours a day.

Series 2000
Model 18V 2000

MTU engines are the basis for the realization of reliable and economically efficient drive solutions. Apart from their reliability and long-life-time the engines of the 2000 series have low fuel consumption and emission values at attractively competitive prices. A large choice of integrated accessories, reduces the engineering expenses the unit producer would otherwise have to invest.

The electronic engine management system has been designed to take over a variety of control and monitoring functions to the effect of a considerably reduced planning expenditure making the unit control easier and its price more reasonable. The operator benefits from the engines low fuel consumption and emission values, excellent load acceptance behaviour and, not to forget, from the safety of a world-wide service network.

Optimized for fuel consumption or exhaust emission, the switchable speed engines of the 2000 series cover a perfectly harmonized scope of performances and offer the optimal solution to comply with any individual application.

MTU engines show good characteristics in the following fields:

Your Benefits:
- Very Low Assembly and Engineering Expenditure
  - Various accessories integrated (cooler, cooling fan etc.)
  - Optimal interface arrangement
  - Flexible system and unit planning
- Optimal Operating Behaviour
  - Low vibration operation
  - Constant engine power available at intake air temperatures of up to 40°C and site altitudes of up to 400 m above sea level
  - Excellent load acceptance behaviour
  - High speed or frequency stability
- Environmental Compatibility
  - Complies with international emission rules
  - Low fuel and lube-oil consumption
  - Low particle emissions
  - Low noise and vibration levels
  - Environmentally favourable paint finish
- High Availability and Reliability
  - Long life-time
  - 24 hour service
  - World-wide customer service network with 2,250 support points
  - Electronic engine management system with selfdiagnosis function
- Low Life Cycle Costs
  - Competitive price
  - Low fuel consumption
  - Low lube-oil consumption
  - Easy to service
  - High TBO
  - REMAN parts
Superior Technology: Module for Module.

Electronic Fuel Injection System
Single injection pumps mounted in the crankcase, camshaft acts directly on the pump element via roller follower. Short high-pressure lines, closed fuel circuits, electronically controlled injection nozzles.

Benefits:
> Exemplary smoothness of running and speed stability
> Low exhaust gas emission and fuel consumption over entire performance range
> Excellent acceleration and load acceptance behaviour
> No fuel re-cooler needed
> No loss of power even at high fuel temperatures

Turbocharging and Exhaust System
Single stage exhaust gas turbo charging with two high-efficiency turbochargers, charge air cooling and exhaust gas elbow with vertical exhaust discharge

Benefits:
> High engine efficiency
> Optimum load acceptance
> Easily connected with external exhaust system

Engine and Generator Mounts
Elastic engine and generator mounts with rubber elements for different generator construction types.

Benefits:
> Also suitable for cost-advantageous base frames
> Easy installation
> Effective solid-born noise silencing
> Highly efficient vibration damping

Cooling Systems
Single-circuit cooling system with air charge air cooling
Complete system solution with cooler, fan drive, fan and piping. Cooler size can be selected flexibly to meet with different ambient air temperatures (40°C / 50°C) and different pressure relations existing at the cooling side (100/200/300 Pa).

Benefits:
> Optimized system solution
> Compact design
> Easy assembly and low assembly costs
> Can be adapted individually

Dual-circuit cooling system with water charge air cooling
System solution apt for separate installation of mechanically or electromotor driven fan coolers, heat exchangers or desktop type coolers.

Benefits:
> Re-cooling system can be installed separately and be located away from the genset it serves
> Units can be planned flexibly and individually

Engine Management
Electronic control and monitoring system with all-speeds or charging control and integrated safety and self-diagnosis functions extendable by means of interface modules with plug-in connections ready for plug in starting automatics and load profile recorder, engine optimally harmonized in regard to fuel consumption and emissions complete with engine sensory analysis and cabling, suitable for combination with all common power set control systems many additional functions available (e.g. variable p-grade adjustment, changeable speed etc.)

Benefits:
> Optimal operating behaviour
> Easy, fast and cost-advantageous connection possible to external systems
> Maintenance-free design
Superior Technology: Module for Module.

Electronic Fuel Injection System
Single injection pumps mounted in the crankcase, camshaft acts directly on the pump element via roller follower. Short high-pressure lines, closed fuel circuits, electronically controlled injection nozzles

Benefits:
- Exemplary smoothness of running and speed stability
- Low exhaust gas emission and fuel consumption over entire performance range
- Excellent acceleration and load acceptance behaviour
- No fuel re-cooler needed
- No loss of power even at high fuel temperatures

Turbocharging and Exhaust System
Single stage exhaust gas turbo charging with two high-efficiency turbochargers, charge air cooling and exhaust gas elbow with vertical exhaust discharge

Benefits:
- High engine efficiency
- Optimum load acceptance
- Easily connected with external exhaust system

Engine and Generator Mounts
Elastic engine and generator mounts with rubber elements for different generator construction types

Benefits:
- Also suitable for cost-advantageous base frames
- Easy installation
- Effective solid-born noise silencing
- Highly efficient vibration damping

Cooling Systems
Single-circuit cooling system with air charge air cooling
Complete system solution with cooler, fan drive, fan and piping. Cooler size can be selected flexibly to meet with different ambient air temperatures (40°C / 50°C) and different pressure relations existing at the cooling side (100/200/300 Pa)

Benefits:
- Optimized system solution
- Compact design
- Easy assembly and low assembly costs
- Can be adapted individually

Dual-circuit cooling system with water charge air cooling
System solution apt for separate installation of mechanically or electromotor driven fan coolers, heat exchangers or desktop type coolers.

Benefits:
- Re-cooling system can be installed separately and be located away from the genset it serves
- Units can be planned flexibly and individually

Engine Management
Electronic control and monitoring system with all-speeds or charging control and integrated safety and self-diagnosis functions extendable by means of interface modules with plug-in connections ready for plug in starting automatics and load profile recorder, engine optimally harmonized in regard to fuel consumption and emissions complete with engine sensory analysis and cabling, suitable for combination with all common power set control systems many additional functions available (e.g. variable p-grade adjustment, changeable speed etc.)

Benefits:
- Optimal operating behaviour
- Easy, fast and cost-advantageous connection possible to external systems
- Maintenance-free design
## Technical Data

### Diesel Engine Series 2000

**Configuration**
- 8V, 12V, 16V, 18V

**Bore**
- 130/150 mm

**Swept volume**
- 1.99 l/cyl.

**Fuel specification**
- EN 590, Grade Nr. 1-D/2-D (ASTM D975-00)

### Application Group

<table>
<thead>
<tr>
<th>Application Group</th>
<th>Standby Power</th>
<th>Prime Power Limited</th>
<th>Prime Power</th>
<th>Continuous Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited 3D</td>
<td>3D</td>
<td>3C</td>
<td>3B</td>
<td>3A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mode of operation</th>
<th>Standby with variable load</th>
<th>Standby with variable load</th>
<th>Contin. operation with variable load</th>
<th>Contin. operation with 100 % load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load factor</td>
<td>&lt; 85%</td>
<td>&lt; 75%</td>
<td>≤ 100%</td>
<td>100%</td>
</tr>
<tr>
<td>Annual operating hours</td>
<td>max. 500</td>
<td>max. 1000</td>
<td>unrestricted</td>
<td>unrestricted</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rating definition</th>
<th>DIN ISO 3046</th>
<th>ICXN capability ICXN capability ICXN capability ICXN</th>
</tr>
</thead>
</table>

#### Engine Model

**Engine Model**
- Engine Power (kW) at 1500 rpm (50 Hz) with Air or Water Charge Air Cooling

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Air or Water Charge Air Cooling</td>
<td>625 / 692</td>
<td>680 / 761</td>
<td>805 / 914</td>
<td>895 / 1007</td>
<td>985 / 1115</td>
<td>895 / 1115</td>
<td>895 / 1115</td>
<td>895 / 1115</td>
</tr>
</tbody>
</table>

**Engine Model**
- Engine Power (kW) at 1800 rpm (60 Hz) with Air or Water Charge Air Cooling

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Air or Water Charge Air Cooling</td>
<td>645</td>
<td>617</td>
<td>570</td>
<td>735</td>
<td>835</td>
<td>1007</td>
<td>1115</td>
<td>1250</td>
</tr>
</tbody>
</table>

**Reference Conditions**
- Standard Power
  - Intake air temperature: 25°C
  - Altitude above sea level: 100 m
  - Charge-air coolant temperature: 55°C

**Exhaust emission**
- (EPA 40 CFR 89, Tier 1)
- (EPA 40 CFR 89, Tier 2)

*Charge-air coolant temperature for engines equipped with Water-to Air Charge Air Cooling.*

### Engine Power (kW) at 1500/1800 rpm (50/60 Hz switchable) with Air or Water Charge Air Cooling

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Air or Water Charge Air Cooling</td>
<td>625 / 692</td>
<td>680 / 761</td>
<td>805 / 914</td>
<td>895 / 1007</td>
<td>985 / 1115</td>
</tr>
</tbody>
</table>

### Fuel consumption

If a cooler fan is fitted, the fan power must be deducted from the engine power.
### Diesel Engine Series 2000

**Configuration**
- 8V, 12V, 16V, 18V

**Bore**
130/150

**Swept volume**
1.99

**Fuel specification**
EN 590, Grade Nr. 1-D/2-D (ASTM D975-00)

### Technical Data

#### Application Group

<table>
<thead>
<tr>
<th>Standby Power</th>
<th>Prime Power Limited</th>
<th>Prime Power</th>
<th>Continuous Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>3D</td>
<td>3C</td>
<td>3B</td>
<td>3A</td>
</tr>
</tbody>
</table>

#### Mode of operation
- Standby with variable load
- Standby with variable load
- Contin. operation with variable load
- Contin. operation with 100 % load

#### Load factor
- < 85%
- < 75%
- < 75%
- ≤ 100%

#### Annual operating hours
- max. 500
- max. 1000
- unrestricted
- unrestricted

#### Rating definition
- Fuel stop power
- ICXN capability

#### Engine Model

<table>
<thead>
<tr>
<th>Engine Model</th>
<th>Engine Power (kW) at 1500/1800 rpm (50/60 Hz switchable) with Air or Water Charge Air Cooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimization</td>
<td>(1) 625 / 692 (2) 625 / 692 (3) 565 / 620 (4) - (5) 515 / 561 (6) - (7) 452 / 515</td>
</tr>
<tr>
<td>12V 2000 G23</td>
<td>-</td>
</tr>
<tr>
<td>12V 2000 G63</td>
<td>-</td>
</tr>
<tr>
<td>16V 2000 G23</td>
<td>-</td>
</tr>
<tr>
<td>16V 2000 G63</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Reference Conditions

<table>
<thead>
<tr>
<th>Engine Model</th>
<th>Engine Power (kW) at 1800 rpm (60 Hz) with Air or Water Charge Air Cooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimization</td>
<td>(1) 455 (2) 410 (3) 370 (4) - (5) 465 (6) - (7) 415 (8) - (9) 370</td>
</tr>
<tr>
<td>8V 2000 G1*</td>
<td>-</td>
</tr>
<tr>
<td>8V 2000 G2*</td>
<td>-</td>
</tr>
<tr>
<td>8V 2000 G3*</td>
<td>-</td>
</tr>
<tr>
<td>12V 2000 G43</td>
<td>-</td>
</tr>
<tr>
<td>12V 2000 G83</td>
<td>-</td>
</tr>
<tr>
<td>16V 2000 G43</td>
<td>-</td>
</tr>
<tr>
<td>16V 2000 G83</td>
<td>-</td>
</tr>
</tbody>
</table>

* Engines available with Air Charge Air Cooling only.

* with Optimisation (1)

* with Optimisation (2)
Diesel Engines Series 2000
Stationary Power Generation