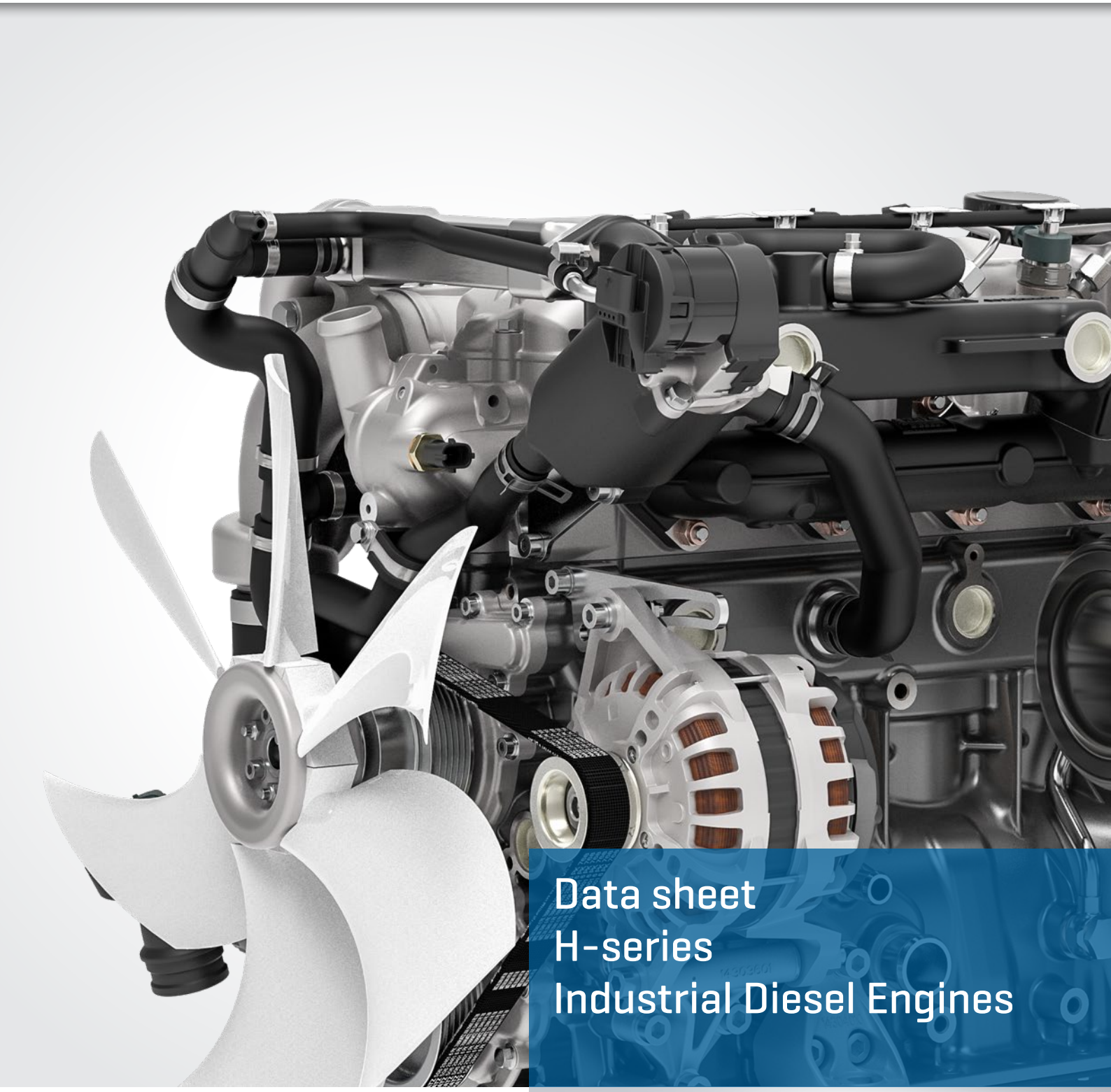
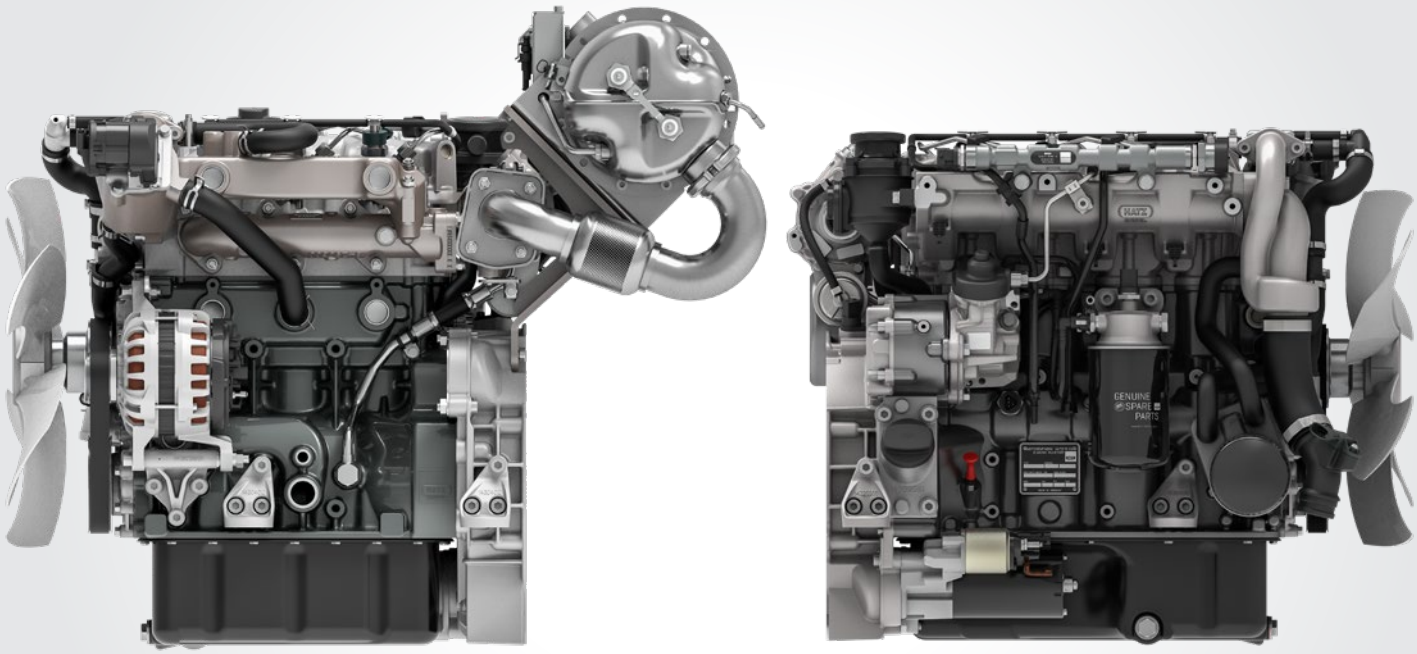
CREATING
POWER
SOLUTIONS

HATZ



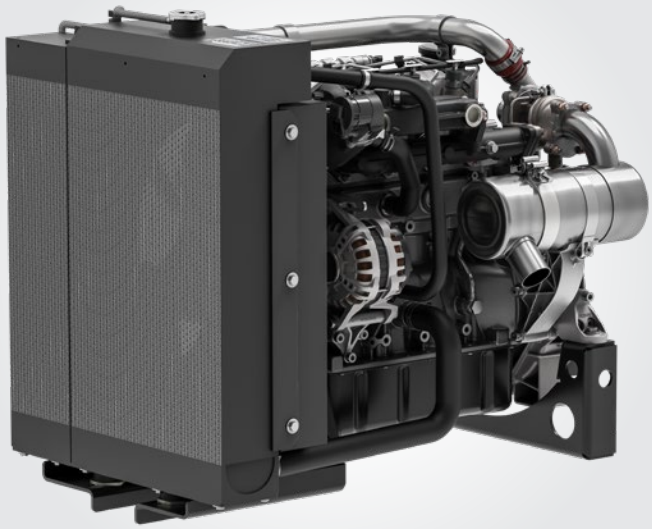
# Data sheet
# H-series
# Industrial Diesel Engines

**Hatz Drive Solutions**



**The Modern Three- and Four-Cylinder Power Packages**
Compact, light, economical, robust and environmentally friendly: The new Hatz common-rail diesel engine provides everything expected from a powerful and modern industrial engine. It impresses through its quiet running, dynamics and maintenance friendliness. Its constantly low fuel consumption over a wide load range sets the benchmark. Only high quality parts are used in the H-series engines. These include an injection system and sensors from well-known manufacturers.

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag



**Open Power Unit – the Plug & Play Solution**
All variants of the H-series are available as a ready-to-install OPU (Open Power Unit) and were completely tested by the manufacturer. In addition to the standard scope of delivery, air filter, radiators, charged air radiators, hosing and cable loom are already pre-installed in the delivery state.

**New Silent Pack – the Most Quiet Hatz Multi-Cylinder Engines**
Based on the OPU version (see left) the Silent Packs are up to 60 percent more quiet. The powder-coated canopy made from sheet metal provides an efficient weather and touch protection as well. Nevertheless the released maximum ambient temparature is the same as the OPU.

# Hatz H-Series:
# Innovation Meets Reliability

A groundbreaking downsizing approach was adopted in the development of the Hatz H-series. The outcome are extremely compact, turbocharged engines that reach a maximum output of 64 kilowatts, setting benchmarks in their performance classes.

**Conservative-innovative engine for a long service life**
The Hatz H-series has two valves per cylinder, which achieves high efficiency, mechanical robustness and functional simplicity. This – as well as the exclusive use of premium products for all important components – leads to the long service life customary from Hatz.

**Maintenance-friendly**
The H-series also scores highly in terms of user friendliness. Firstly, all maintenance points are accessible on one side of the engine; secondly, the maintenance intervals of 500 engine hours are largely spaced. A hydraulic valve play compensation and generously sized filters make it possible. Longer maintenance intervals of up to 3000 hours can also be approved for defined applications.

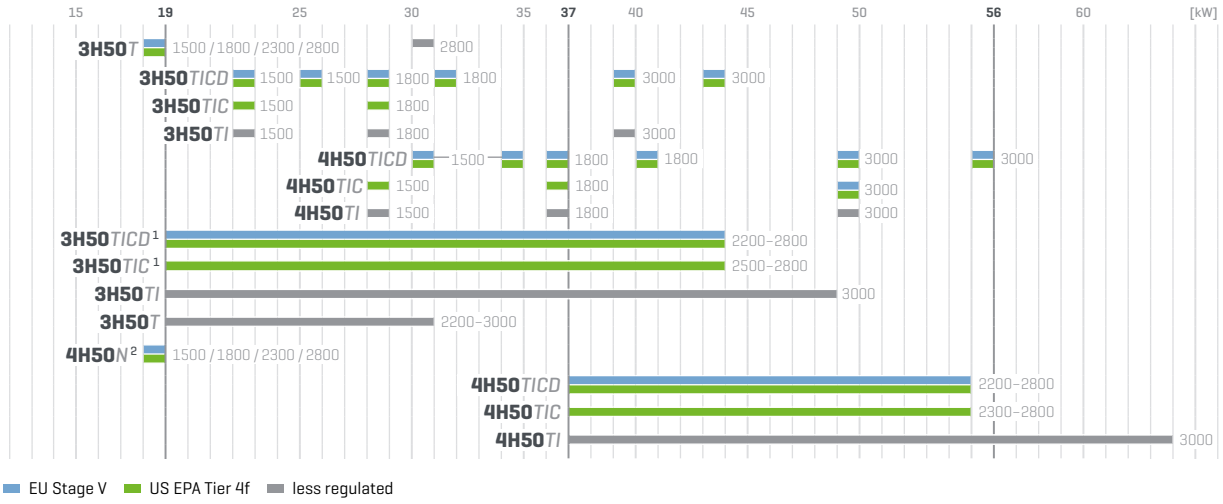
**Environmental compliance**
The Hatz H-series is up to 90 kilograms lighter compared to its nearest competitor. This weight saving not only results in a lower power-to-weight ratio, but also in a reduced need for raw materials. The engine family meets all emission requirements of the EU and the USA, the latter even without the use of a particulate filter.

**Common-rail system**
One of the key factors for the high efficiency of the Hatz H-series is its injection technology: the Bosch common rail system in the more robust off-highway version. In conjunction with other ideally matched system components, the perfect balance between dynamics, quiet combustion noise, low emissions and economy is reached.

**Extraordinarily high fuel efficiency**
When it comes to fuel efficiency, the Hatz H-series models with a specific fuel consumption of less than 210 grams per kilowatt hour at the most effective level set new standards. However, the special feature is that consumption economy values close to the optimum are also achieved over a large load and speed range. A key to the exceptionally high fuel efficiency is the reduction of internal friction, which is largely due to the conservative design with few moving parts. This makes each H-series model the most efficient engine in its power class.

**Raising digital potentials**
The engines can be linked to the Hatz Digital Solutions. These allow key information on machine operation to be integrated into fleet management, thereby enabling machine operators to make better decisions. Also possible: optimization of the machine disposition and maintenance, localization and geofencing, and maximization of machine productivity.

**H-series – power ranges, emission classes and rated speeds**




[1] Also available with 36.4 kW @ 2500 rpm for use in California without registration requirements [2] Available as of 2024

# Technical Data, Performance Table

| Technical data | | | 3H50*T* | 3H50*TICD* | 3H50*TIC* | 3H50*TI* | 4H50*N*[2] | 4H50*TICD* | 4H50*TIC* | 4H50*TI* |
|---|---|---|---|---|---|---|---|---|---|---|
| Engine | Type | | Liquid-cooled 4 stroke diesel engine | | | | | | | |
| | Cylinder | | 3 | | | | 4 | | | |
| | Injection system | | Direct injection with Bosch off-highway common-rail system | | | | | | | |
| | Injection pressure [bar] | | 1800 | | | | | | | |
| | Aspiration | | Turbo without charge air cooling | Turbocharger with charge air cooling | | — | Turbocharger with charge air cooling | | | |
| | Exhaust emission after-treatment | | — | gAGR, DOC, DPF | gAGR, DOC | — | | gAGR, DOC, DPF | gAGR, DOC | — |
| | Bore x stroke [mm] | | 84 x 88 | | | | | | | |
| | Displacement [l] | | 1.464 | | | | 1.952 | | | |
| | Mean piston speed @ 3000 rpm [m/s] | | 8.8 | | | | | | | |
| | Compression ratio | | 17.5:1 | | | | | | | |
| | Lubrication oil consumption. related to full load | | max. 0.5 % of fuel consumption | | | | | | | |
| | Oil filling | max. [l] | 5.0 | | | | 9.0 | 7.0 | | |
| | | min. [l] | 4.2 | | | | 8.0 | 6.0 | | |
| | Speed control | Lowest idle speed [rpm] | 900 | | | | 1250 | 900 | | |
| | | Control method | CAN J1939 or multi-stage switch | | | | | | | |
| Installation information | Amount of combustion air @ 2800 rpm approx. [kg/h] | | 199[8] | 260 | | | 111[8] | 340 | | |
| | Amount of cooling air @ 2800 rpm approx. [kg/h] | | 199[8] | 6650 | | | 111[8] | 6650 | | |
| | Mass moment of inertia $J_{engine}$ [kg m²] | | 0.217 | | | | 0.234 | | | |
| | Starter [V] | | 12 (2.2 kW / 3.0 PS) \| 24 (3.0 kW / 4.1 PS) | | | | | | | |
| | Cold start temperature [°C] | | –25 (12 V) \| –32 (24 V) | | | | | | | |
| | Alternator charging [A] | | 110 (14 V) / 150 (14V. Option) \| 60 (28 V) | | | | | | | |
| | Battery capacity max. [Ah] | | 110 (12 V – 450 A DIN) \| 66 (24 V – 300 A DIN) | | | | | | | |
| Dimensions | Weight [kg] | Basic engine | 132 | 140 | 154[3] | 133 | 159 | 158 | 173[3] | 152 |
| | | as Open Power Unit | 147 | 222 | 236[3] | 215 | 174 | 240 | 255[3] | 234 |
| | | as New Silent Pack[5] | — | 339[3] | 327[3] | 306 | — | 360[3] | 348[3] | 327 |
| | L x W x H [mm][9] | Basic engine | 583 x 558 x 654 | 585 x 558 x 601 | 585 x 613 x 601[3] | 583 x 570 x 601 | 675 x 536 x 660 | 673 x 558 x 601 | 673 x 613 x 601[3] | 670 x 570 x 601 |
| | | as Open Power Unit | 700 x 570 x 652 | 806 x 660 x 807 | 806 x 685 x 807[3] | 806 x 660 x 807 | 789 x 538 x 719 | 893 x 660 x 807 | 893 x 685 x 807[3] | 893 x 663 x 807 |
| | | as New Silent Pack[5] | — | 1122 x 712 x 922[3] | 918 x 712 x 922[3] | 918 x 712 x 922 | — | 1213 x 712 x 922[3] | 1009 x 712 x 922[3] | 1009 x 712 x 922 |

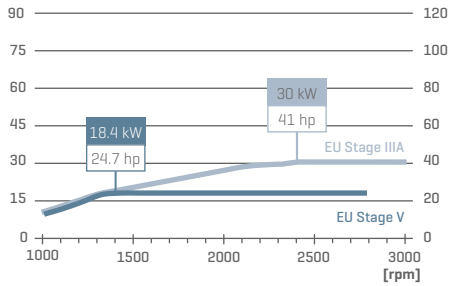
| Engine output max. [kW / hp] | [rpm] | 3H50*T* | 3H50*TICD* | 3H50*TIC* | 3H50*TI* | 4H50*N*[2] | 4H50*TICD* | 4H50*TIC* | 4H50*TI* |
|---|---|---|---|---|---|---|---|---|---|
| **Blocked ISO fuel stop power (IFN) for intermittent loading according to ISO 3046-1.[6] Applies to variable speed.** **3H50***TICD* \| **3H50***TIC* Also available with 36.4 kW / 49.4 hp @ 2500 rpm for use in California without registration requirements. | 3000 | — | — | — | 44.2 / 59.2 | — | 55.4 / 74.2 | — | 55.0 / 73.7 |
| | 2800 | 18.4 / 24.7 | 43.7 / 58.6 | 43.6 / 58.4 | | — | 55.4 / 74.2 | 55.4 / 74.2 | |
| | 2300 | 18.4 / 24.7 | 42.8 / 57.4 | 41.5 / 55.6 | | — | 55.4 / 74.2 | 55.4 / 74.2 | |
| | 1800 | 18.4 / 24.7 | 35.4 / 47.4 | 35.4 / 47.4 | | — | 45.7 / 61.2 | 45.4 / 61.2 | |
| | 1500 | 18.4 / 24.7 | 28.6 / 38.3 | 28.6 / 38.3 | | — | 37.4 / 50.1 | 37.4 / 50.1 | |
| **Blocked ISO fuel stop power (IFN) for intermittent load according to ISO 3046-1. Applies to constant speed.** | 3000 | — | 43.6 / 58.4 | — | — | — | 55.4 / 74.2 | — | — |
| | 1800 | — | 31.3 / 41.9 | — | 31.3 / 41.9 | — | 41.0 / 55.0 | 41.0 / 55.0 | — |
| | 1500 | — | 25.5 / 34.2 | — | 25.5 / 34.2 | — | 35.0 / 46.9 | 35.0 / 46.9 | — |
| **Blocked ISO fuel stop power (IFNsi) for strongly intermittent load according to ISO 3046-1.[7]** | 2800 | — | 43.7 / 58.6[6] | 43.6 / 58.4[6] | 48.2 / 64.6 | — | — | — | 63.7 / 85.4 |
| | 2300 | — | 42.8 / 57.4[6] | 42.5 / 57.0[6] | 47.5 / 63.7 | — | — | — | 62.2 / 83.3 |
| | 1800 | — | 38.2 / 51.2[6] | | 38.2 / 51.2 | — | — | — | 50.2 / 67.3 |
| | 1500 | — | 29.3 / 39.3[6] | 29.3 / 39.3[6] | 31.4 / 42.1 | — | — | — | 41.1 / 55.1 |
| **Blocked ISO standard power (ICFN; not overloadable) according to ISO 3046-1. Applies to variable speed and constant load.** Note: Not available as power rating. | 3000 | — | — | — | 39.8 / 53.3 | — | 49.9 / 66.9 | — | 49.5 / 66.3 |
| | 2800 | 18.4 / 24.7 | 39.3 / 52.7 | 39.2 / 52.5 | | — | 49.9 / 66.9 | 49.9 / 66.9 | |
| | 2300 | 18.4 / 24.7 | 38.3 / 51.3 | 37.4 / 50.1 | | — | 49.9 / 66.9 | 49.9 / 66.9 | |
| | 1800 | 18.4 / 24.7 | 31.9 / 42.7 | 31.9 / 42.7 | | 18.4 / 24.7 | 41.1 / 55.1 | 41.3 / 54.3 | |
| | 1500 | 18.4 / 24.7 | 25.7 / 34.4 | 25.7 / 34.4 | | 18.4 / 24.7 | 33.7 / 45.2 | 33.7 / 45.2 | |
| **Blocked ISO standard power (ICFN; not overloadable) according to ISO 3046-1. Applies to constant speed and constant load (e. g. generators).** | 3000 | — | 39.2 / 52.5 | — | — | — | 49.9 / 66.9 | — | 49.9 / 66.9 |
| | 1800 | 18.4 / 24.7 | 28.5 / 38.2 | — | 28.5 / 38.2 | 18.4 / 24.7 | 36.4 / 48.8 | 36.4 / 48.8 | |
| | 1500 | 18.4 / 24.7 | 22.6 / 30.3 | — | 22.6 / 30.3 | 18.4 / 24.7 | 31.0 / 41.6 | 31.0 / 41.5 | |

[2] Available as of 2024 [3] Including engine mounted aftertreatment [4] 2300/1800/1500: Based on 2800 rpm recordset, other settings on request.
[5] 2300/1800/1500: Based on 2800 rpm recordset, other engine speed only with CAN limitation. [6] Same engine output as IFN, but higher torque.
[7] Spread at box dimensions ± 3 millimeters due to tolerance. [8] @ 2800 rpm ca.

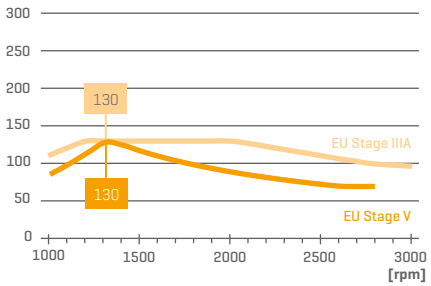
# Power Output, Torque and Fuel Consumption

## 3H50*T*

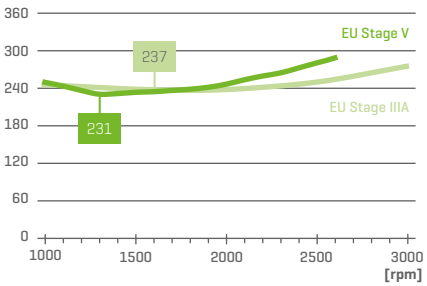
### Output [kW / hp]




### Torque [Nm]

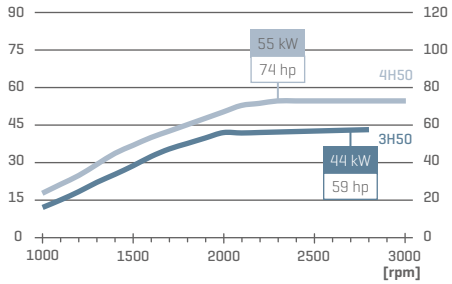



### Fuel consumption [g/kWh]

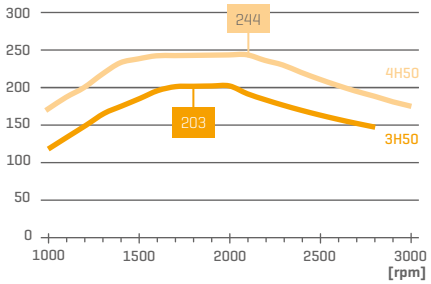



## 3H50*TIC/TICD* | 4H50*TIC/TICD*

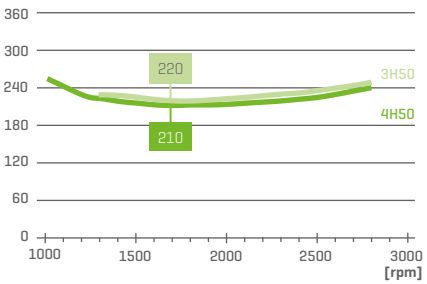
### Output [kW / hp]




### Torque [Nm]

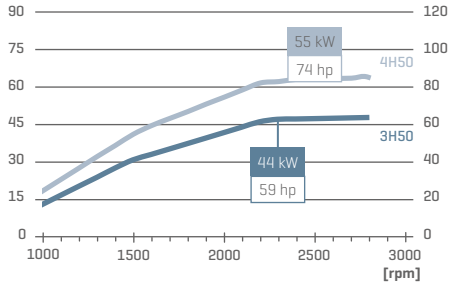



### Fuel consumption [g/kWh]

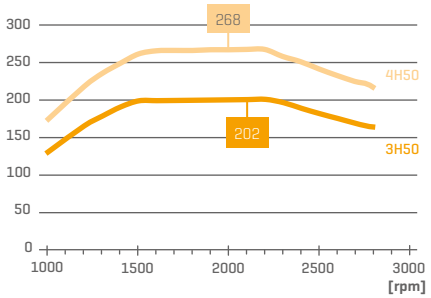



## 3H50*TI* | 4H50*TI*

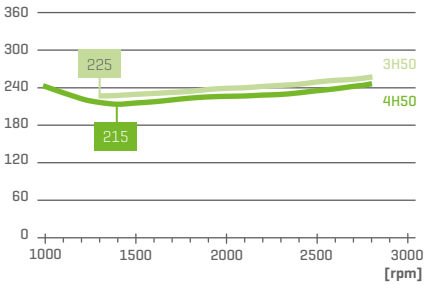
### Output [kW / hp]




### Torque [Nm]

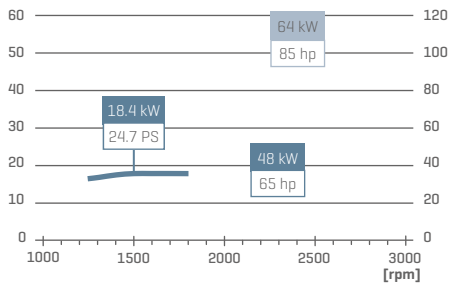



### Fuel consumption [g/kWh]

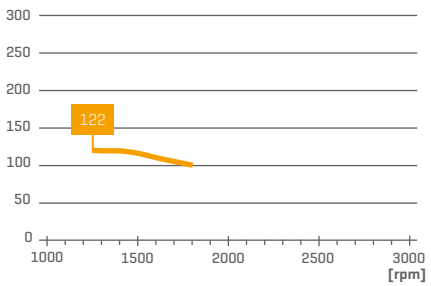



## 4H50*N*²

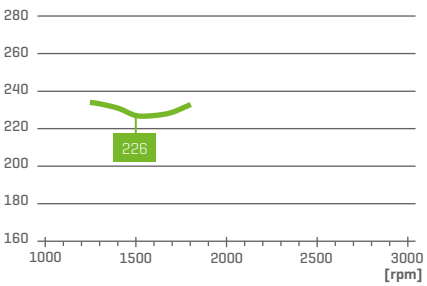
### Output [kW / hp]




### Torque [Nm]

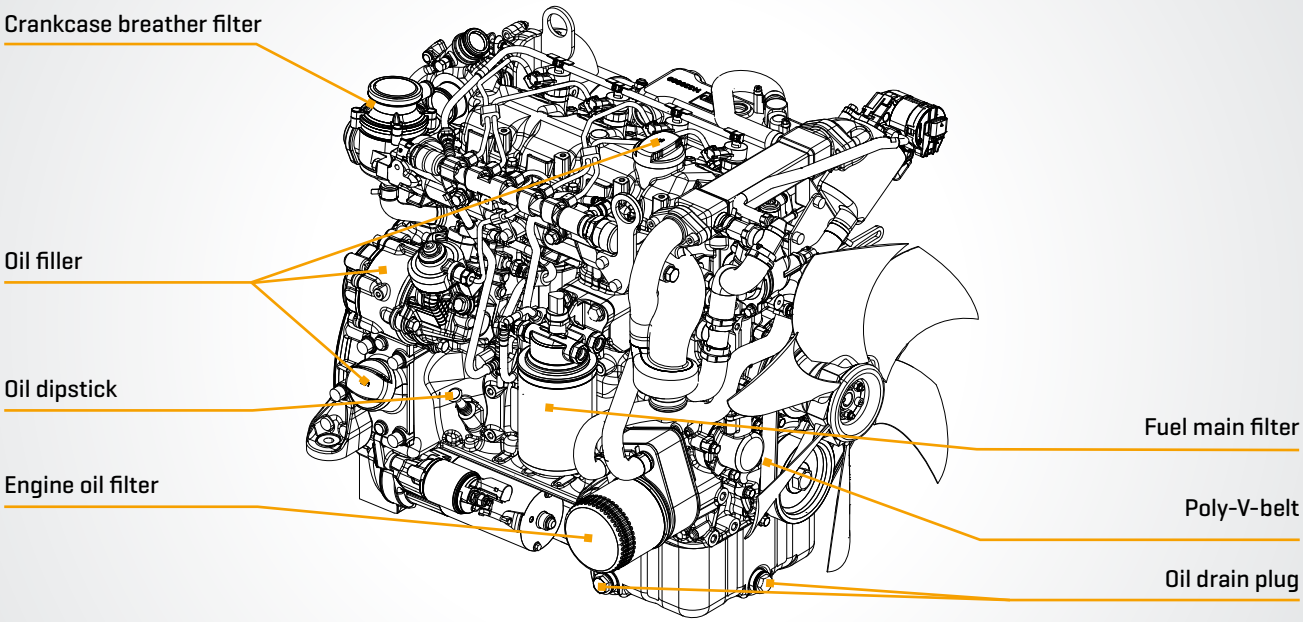



### Fuel consumption [g/kWh]

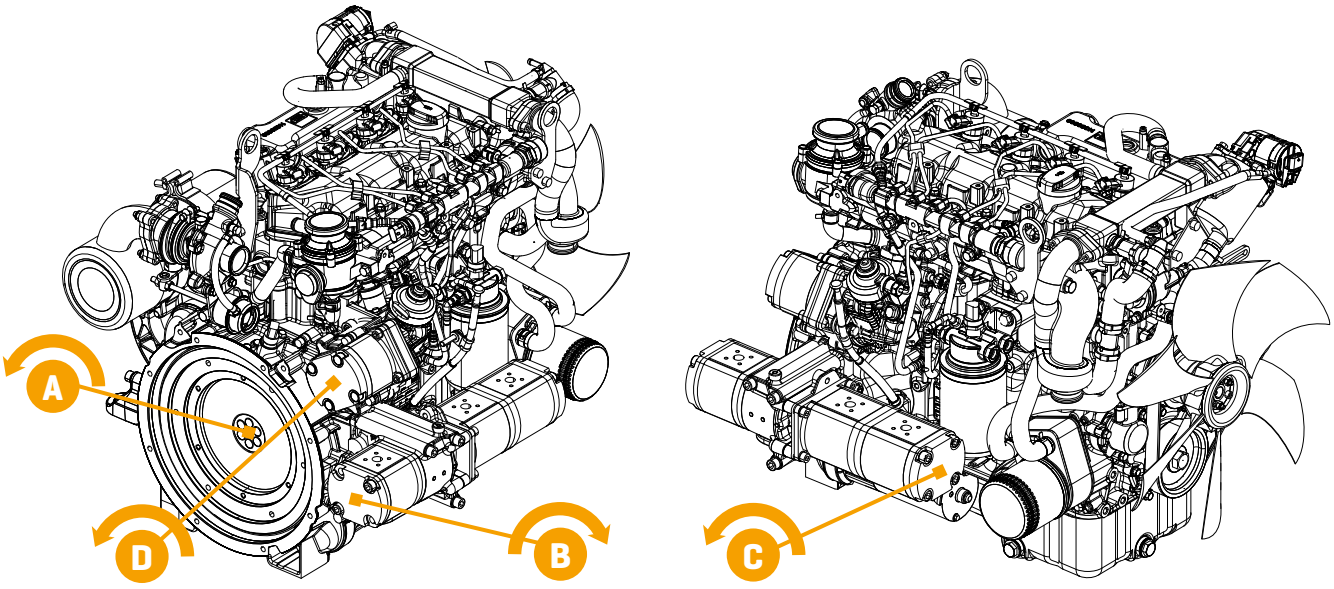



**Power ratings**
Power reduction chart available on request. Up to 1460 metres no power reduction. No power reduction necessary up to the released maximum ambient temperature.
The power requirement of the alternator is already considered in the charts above.

# Maintenance and Operating Points




## Power Take-off



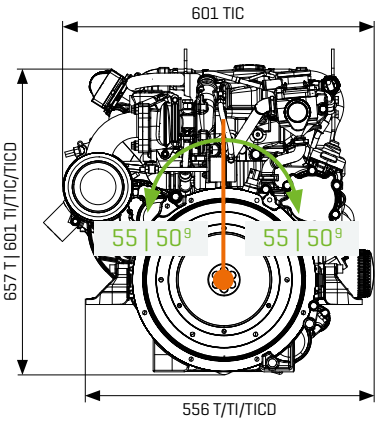

| Power take-off | | 3H50*T* | 3H50*TICD* | 3H50*TIC* | 3H50*TI* | 4H50*N*[2] | 4H50*TICD* | 4H50*TIC* | 4H50*TI* |
|---|---|---|---|---|---|---|---|---|---|
| Transmittable torque | A | 100 % | | | | | | | |
| | B | ∑ = 100 Nm; i = 1.1 | | | | | | | |
| | C | | | | | | | | |
| | D | ∑ = 80 Nm; i = 1.0 | | | | | | | |

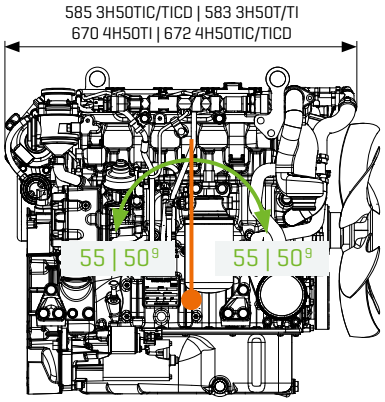
[9] Applies to 4H50 models only

# Dimensions [mm] and Inclinations [°]

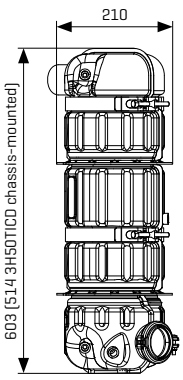
Dimensions for DPF on request.
Spread at box dimensions ± 3 millimeters due to tolerance.
Drawings with detail and connection dimensions as PDF and DXF can be found at hatz.com.

## Basic Engine

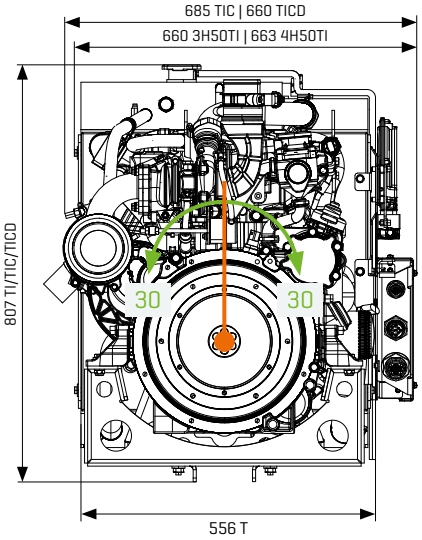


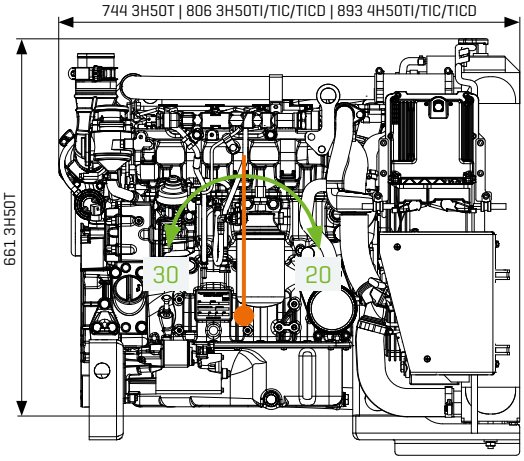




## DPF

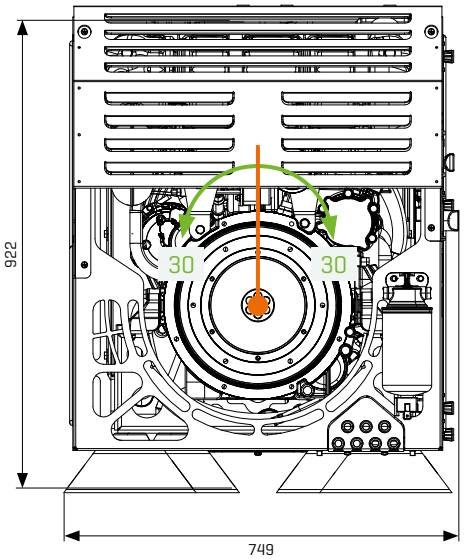


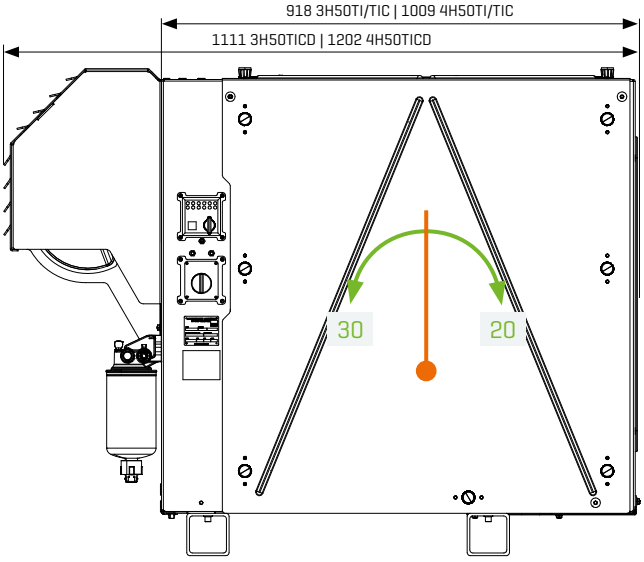

## OPU (Open Power Unit)




## New Silent Pack



**Motorenfabrik Hatz GmbH & Co. KG**
Ernst-Hatz-Str. 16
94099 Ruhstorf a. d. Rott
Germany
Phone +49 8531 319-0
marketing@hatz.com
hatz.com

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