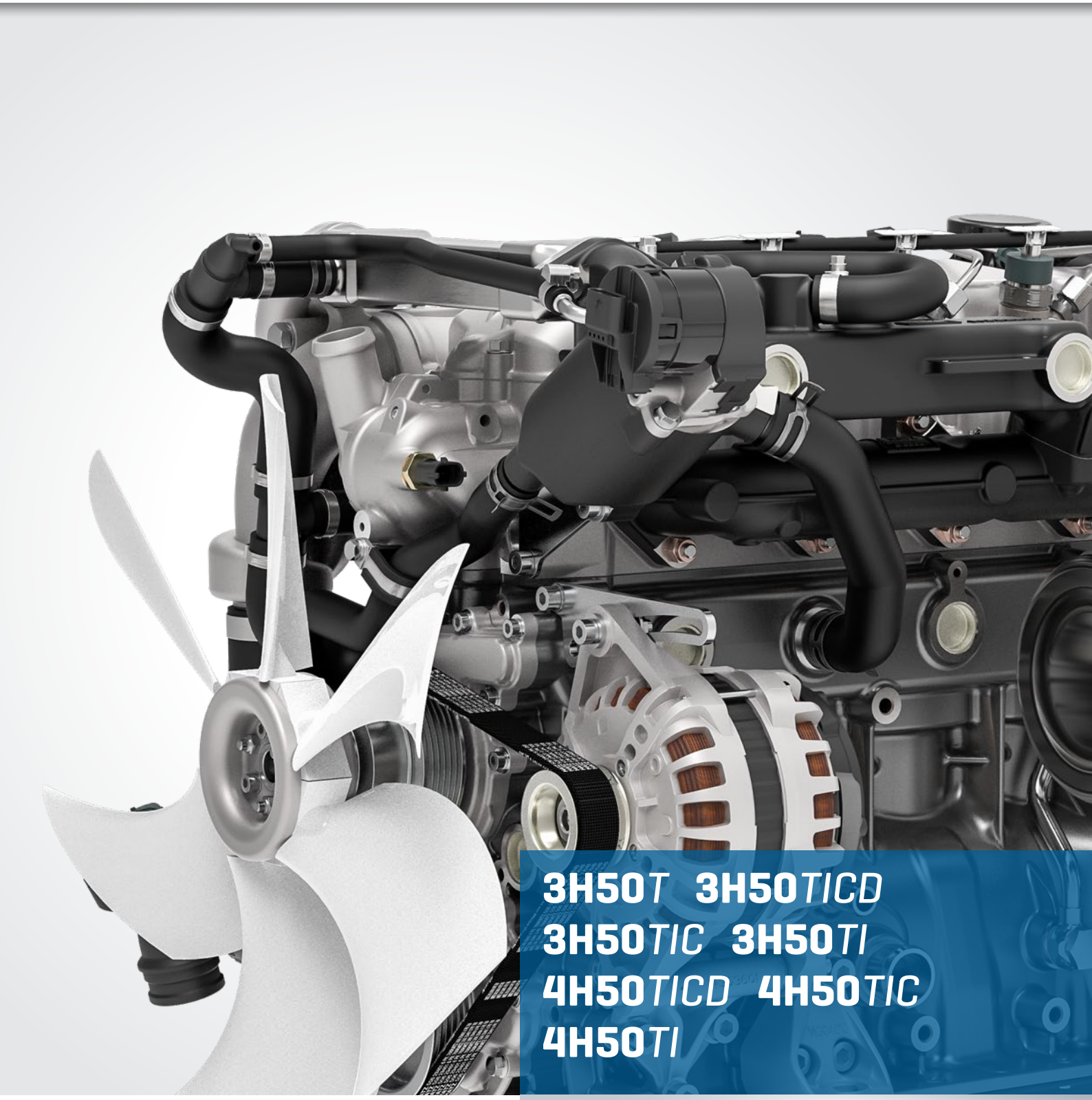
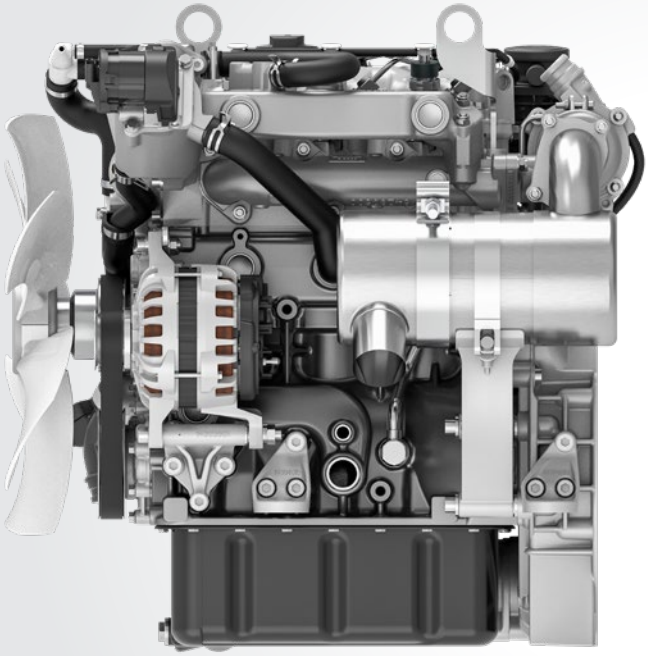
CREATING POWER SOLUTIONS.

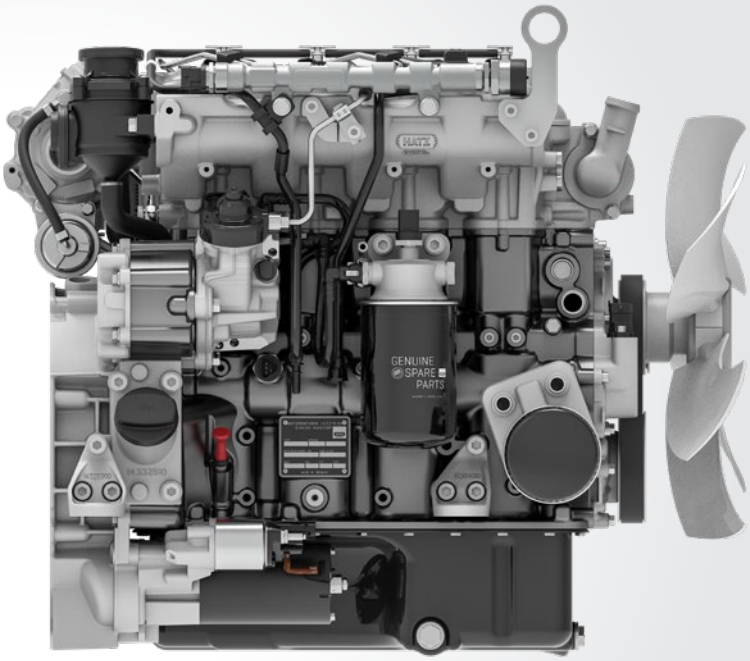
HATZ DIESEL



3H50*T* 3H50*TICD* 3H50*TIC* 3H50*TI* 4H50*TICD* 4H50*TIC* 4H50*TI*

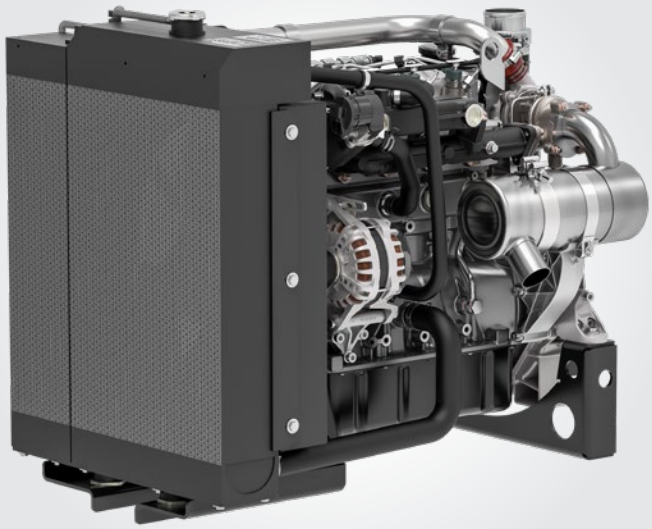
Hatz diesel engines | data sheet



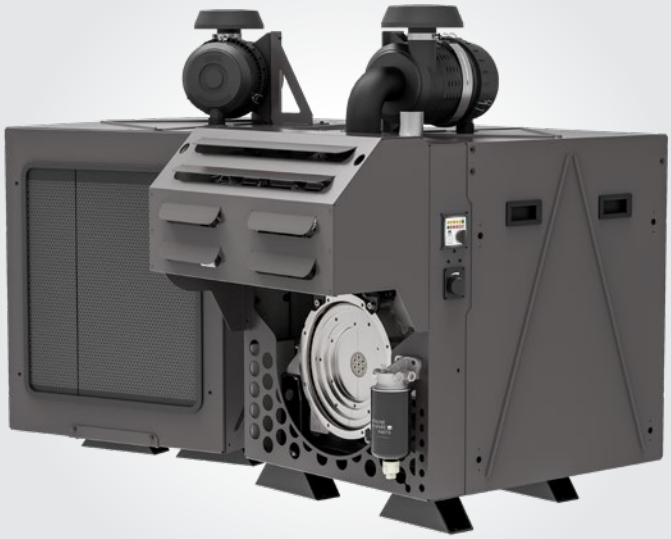


The modern three-and four-cylinder power packages
Compact, light, economical, robust and environmentally friendly: The new Hatz common-rail diesel engine provides everything expected from a powerful and modern industrial engine. It impresses through its quiet running, dynamics and maintenance friendliness. 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 sensor system 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 60 percent more quiet. The powder-coated canopy made from sheet metal provides an efficient weather and touch protection as well. Nevertheless the released ambient temparature of the Silent Packs and the OPU are the same.

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 1.5 and 2 litres engines that reach a maximum output of 62 kilowatts, setting benchmarks in their performance classes. The fulfilment of the stringent EU Stage IIIB and EPA Tier 4 final is made even without the use of a diesel particulate filter (DPF).

Conservative-innovative engine for a long service life
All mechanical components were designed and developed with a conservative-innovative approach. The Hatz H-series therefore 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.

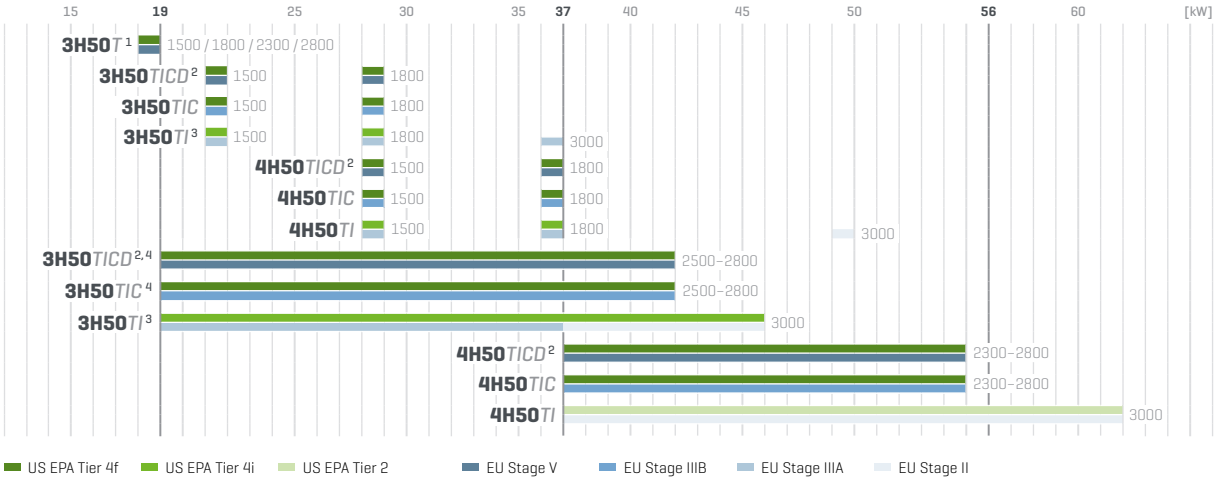
Maintenance-friendly
The H-series also scores highly in terms of user friendliness. Firstly, all maintenance points are accessible on one side of the engine; secondly, the maintenance intervals of 500 engine hours are largely spaced. The extended intervals are attributed to hydraulic valve play compensation and generously sized filters.

Environmental compliance
The Hatz H-series is 90 kilograms lighter compared to its nearest competitor. This weight saving ensures a low power to weight ratio and reduced use of raw materials. The engine meets all current environmental regulations in Europe and North America, even without the use of a particle filter. Of course, the engine will also be available for the EU Stage V regulation for Europe using a DPF.

Common-rail system
One of the key factors for the high efficiency of the Hatz H-series is the common-rail system. Hatz has decided upon the off highway CRS from Bosch with 1800 bar. In standard operation it works with up to three precisely dosed injections per working cycle: pre injection, main injection and post injection. In conjunction with the other ideally matched Bosch 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 220 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. This makes each H-series model the most efficient engine in its power class. A key element therefor is the reduction of internal friction due largely to the conservative design with only a few moving parts. A major contribution to this is made by the 2-valve technology in conjunction with roller tappets as well as the lower camshaft that reduces installation space. In addition, only high-end materials are used for the con-rod and bearings.

H-series – power ranges, certificates and rated speeds



[1] Available early 2019 [2] Available Dec. 2018 [3] Available mid/end 2018 [4] Also available with 36.4 kW @ 2500 rpm for use in California without registration requirements

Technical data, performance table

Technical data			3H50*T*[1]	3H50*TICD*[2]	3H50*TIC*	3H50*TI*[3]	4H50*TICD*[2]	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					
	Exhaust emission after-treatment		—	cEGR, DOC, DPF	cEGR, DOC	—	cEGR, DOC, DPF	cEGR, 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				7.0		
		min. [l]	4.2				6.0		
	Speed control	Lowest idle speed [rpm]	900						
		Control method	CAN J1939 or multi-stage switch						
Installation information	Amount of combustion air @ 2800 rpm approx. [kg/h]		260				340		
	Amount of cooling air @ 2800 rpm approx. [kg/h]		6650						
	Mass moment of inertia J_{engine} [kgm²]		0.217				0.234		
	Starter [V]		12 (2.2 kW / 3.0 hp) | 24 (3.0 kW / 4.1 hp)						
	Cold start temperature [°C]		–25 (12 V) | –32 (24 V)						
	Alternator charging [A]		110 (14 V) | 60 (28 V)						
	Battery capacity max. [Ah]		110 (12 V – 450 A DIN) | 66 (24 V – 300 A DIN)						
Dimensions	Weight [kg]	Fan to flywheel	132	140	154[5]	133	158	173[5]	152
		as Open Power Unit	147[8]	222	236[5]	215	240	255[5]	234
		as New Silent Pack[1, 8]	—	339[5]	327[5]	306	360[5]	348[5]	327
	L x W x H [mm]	Fan to flywheel	660 x 568 x 650	629 x 559 x 691	660 x 613 x 650[5]	660 x 568 x 650	720 x 559 x 691	751 x 613 x 650[5]	751 x 568 x 650
		as Open Power Unit	718 x 568 x 650[8]	805 x 663 x 807	836 x 685 x 807[5]	836 x 663 x 807	896 x 663 x 807	927 x 685 x 807[5]	927 x 663 x 807
		as New Silent Pack[1, 8]	—	1122 x 712 x 974[5]	918 x 712 x 908[5]	918 x 712 x 908	1213 x 712 x 974[5]	1009 x 712 x 908[5]	1009 x 712 x 908

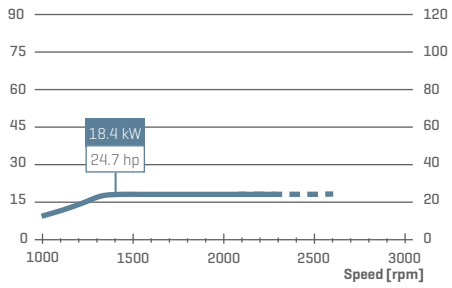
Engine output max. [kW / hp]	[rpm]	3H50*T*[1]	3H50*TICD*[2]	3H50*TIC*	3H50*TI*[3]		4H50*TICD*[2]	4H50*TIC*	4H50*TI*
Blocked ISO brake horsepower (IFN) for intermittent loading according to ISO 3046-1. **3H50***TICD* | **3H50***TIC* Also available with 36.4 kW / 49.4 hp @ 2500 rpm for use in California without registration requirements.	3000	—	—		36.4 / 48.8[6]	42.0 / 56.2[7]	—		55.0 / 73.8
	2800	—	42.0 / 56.2		36.4 / 48.8[6]	42.0 / 56.2[7]	55.0 / 73.8		55.0 / 73.8
	2600	18.4 / 24.7	42.0 / 56.2		36.4 / 48.8[6]	42.0 / 56.2[7]	54.9 / 73.6		54.9 / 73.6
	2300	18.4 / 24.7	41.2 / 55.2		36.4 / 48.8[6]	41.2 / 55.2[7]	54.0 / 72.4		54.0 / 72.4
	2000	18.4 / 24.7	38.8 / 52.0		36.4 / 48.8[6]	38.8 / 52.0[7]	50.3 / 67.5		50.3 / 67.5
	1800	18.4 / 24.7	34.9 / 46.8		34.9 / 46.8[6]	34.9 / 46.8[7]	45.2 / 60.6		45.2 / 60.6
	1500	18.4 / 24.7	28.3 / 38.0		28.3 / 38.0[6]	28.3 / 38.0[7]	37.1 / 49.8		37.1 / 49.8
Blocked ISO brake horsepower (IFNsi) for strong intermittent loading according to ISO 3046-1.	2800	—	—		46.5 / 62.4		—		62.0 / 82.5
	2600	—	—		46.5 / 62.4		—		62.0 / 82.5
	2300	—	—		46.5 / 62.4		—		61.2 / 82.1
	2000	—	—		41.5 / 55.6		—		55.3 / 74.1
	1800	—	—		37.3 / 50.0		—		49.7 / 66.7
	1500	—	—		31.1 / 41.7		—		40.8 / 54.2
Blocked ISO standard power output (no overload permissible) acc. to ISO 3046-1. For constant load (ICFN). Note: indication about maximum power for constant load only, not available as engine rating	2800	—	37.8 / 50.6		37.8 / 50.6		49.5 / 66.4		49.5 / 66.4
	2600	18.4 / 24.7	37.8 / 50.6		37.8 / 50.6		49.4 / 66.4		49.4 / 66.4
	2300	18.4 / 24.7	37.1 / 49.7		37.1 / 49.7		48.6 / 66.2		48.6 / 66.2
	2000	18.4 / 24.7	35.9 / 46.8		35.9 / 46.8		45.2 / 60.8		45.2 / 60.8
	1800	18.4 / 24.7	31.4 / 42.1		31.4 / 42.1		40.7 / 54.5		40.7 / 54.5
	1500	18.4 / 24.7	25.5 / 34.2		25.5 / 34.2		33.4 / 44.8		33.4 / 44.8
Blocked ISO standard power output (no overload permissible) acc. to ISO 3046-1. For constant speed and constant load (ICFN) – e. g. power generators.	3000	—	—		37.8 / 50.6		—		50.0 / 67.0
	1800	18.4 / 24.7	28.8 / 38.6		28.8 / 38.6		36.4 / 48.8		36.4 / 48.8
	1500	18.4 / 24.7	—		18.4 / 24.7		28.7 / 38.5		28.7 / 38.5

[1] Available early 2019 [2] Available Dec. 2018 [3] Available mid/end 2018 [5] Including engine mounted aftertreatment [6] EU Stage IIIA [7] EU Stage II [8] Preliminary values
Spread at box dimensions ± 3 millimeters due to tolerance.

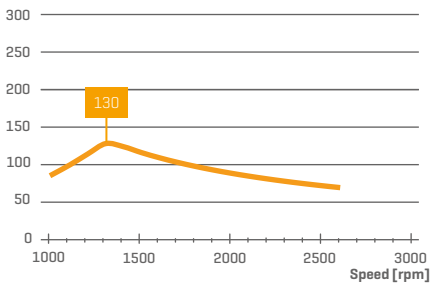
Power output, torque und fuel consumption

3H50*T*[1]

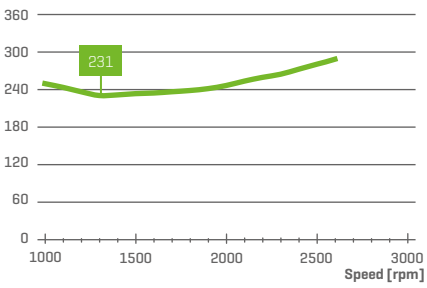
Output [kW / hp][8]



Torque [Nm][8]

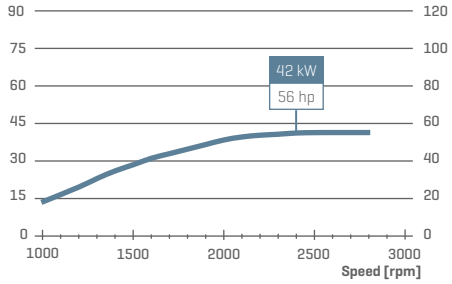


Fuel consumption [g/kWh][8]

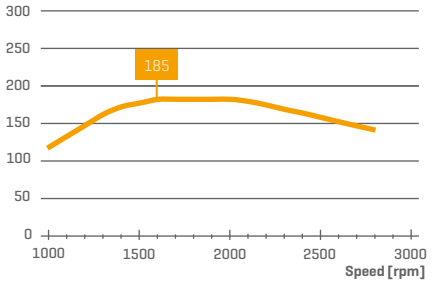


3H50*TICD*[2] | 3H50*TIC*

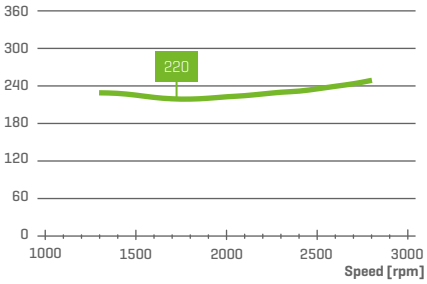
Output [kW / hp]



Torque [Nm]

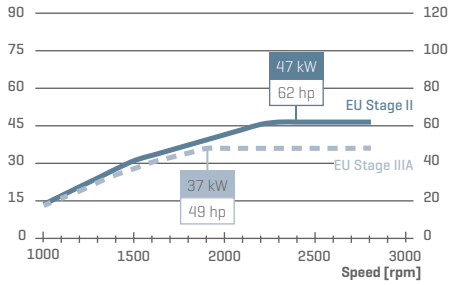


Fuel consumption [g/kWh]

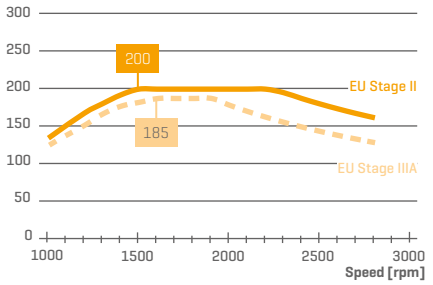


3H50*TI*[3]

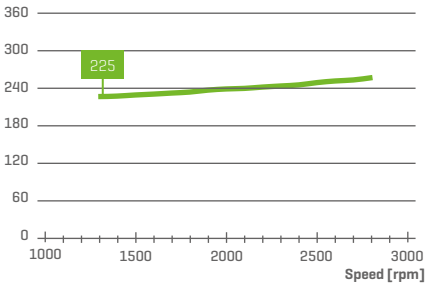
Output [kW / hp][8]



Torque [Nm][8]

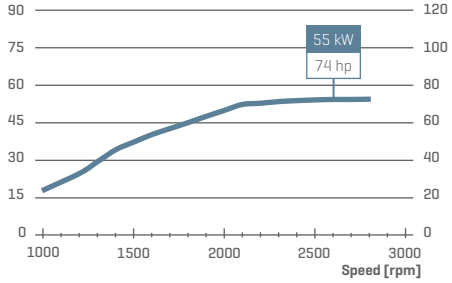


Fuel consumption [g/kWh][8]

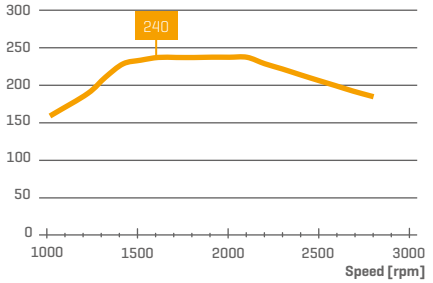


4H50*TICD*[2] | 4H50*TIC*

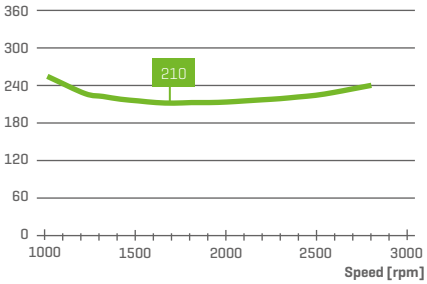
Output [kW / hp]



Torque [Nm]

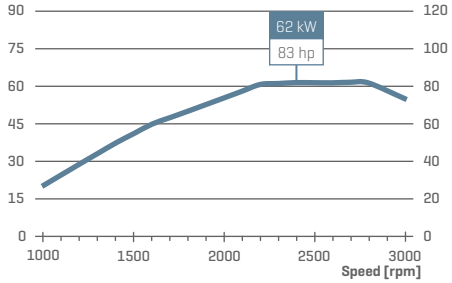


Fuel consumption [g/kWh]

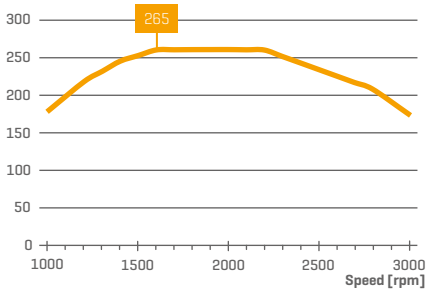


4H50*TI*

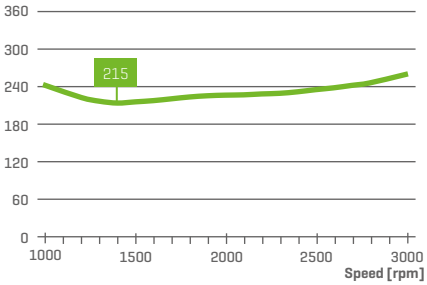
Output [kW / hp]



Torque [Nm]

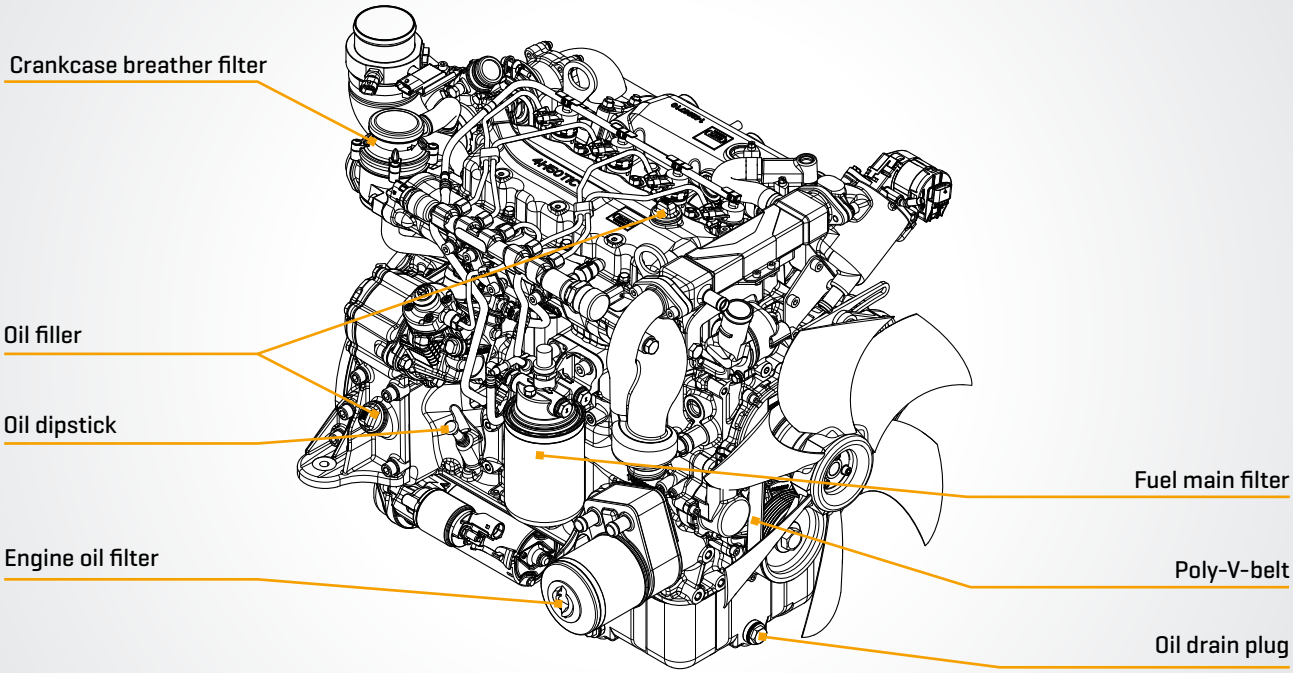


Fuel consumption [g/kWh]

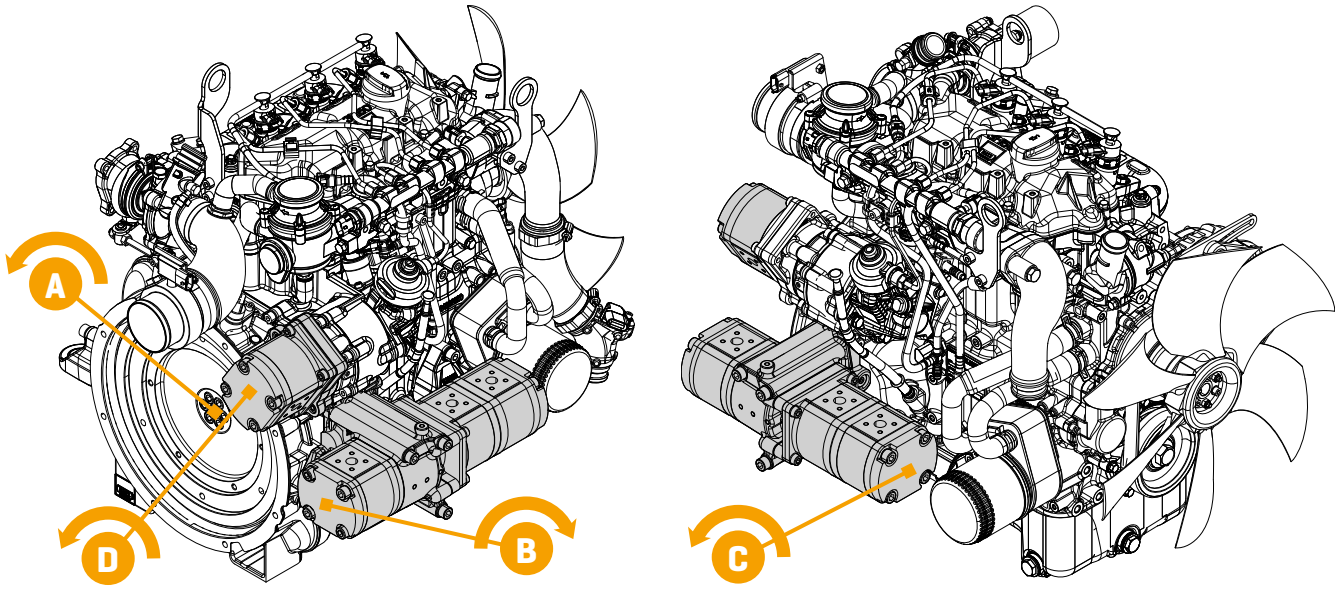


Power ratings

Power reduction chart available on request. Up to 1460 metres no power reduction. Power reduction based on temperature is depending on cooling system, no derating from 50 to 60 °C depending on the operations level for Hatz OPU or New Silent Pack. The power requirement of fan and alternator are already considered in the charts above.



Power take off



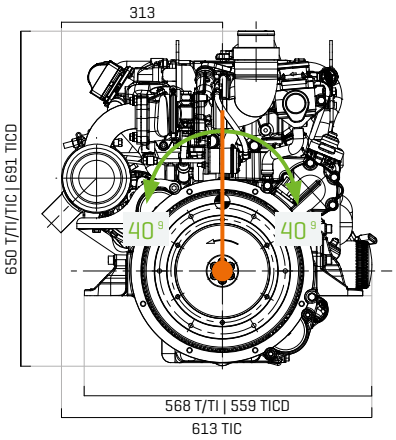
Power take off		3H50*T*[1]	3H50*TICD*[2]	3H50*TIC*	3H50*TI*[3]	4H50*TICD*[2]	4H50*TIC*	4H50*TI*
Transmittable torque	A	100 %						
	B	∑ = 100 Nm; i = 1.1						
	C							
	D	∑ = 80 Nm; i = 1.0						

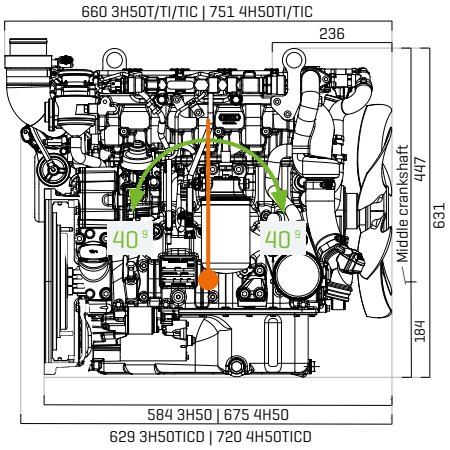
[1] Available early 2019 [2] Available Dec. 2018 [3] Available mid/end 2018
[9] Inclinations maximum 7 hours, 30 ° without time limit. For more extreme angles, inclined position options are available on request.

Dimensions [mm] and inclinations [°]

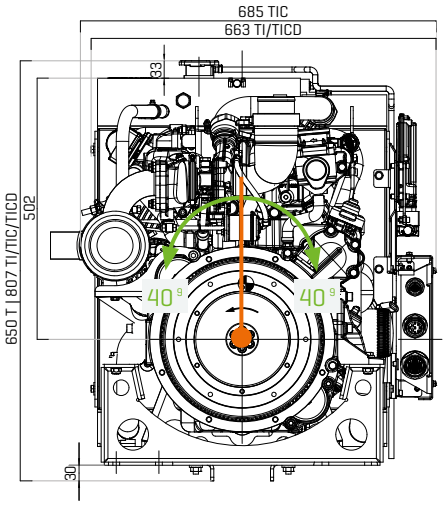
Dimensions for DPF on request.
Spread at box dimensions ± 3 millimeters due to tolerance.
Drawings with detail and connection dimensions as PDF and DXF
can be found at www.hatz-diesel.com.

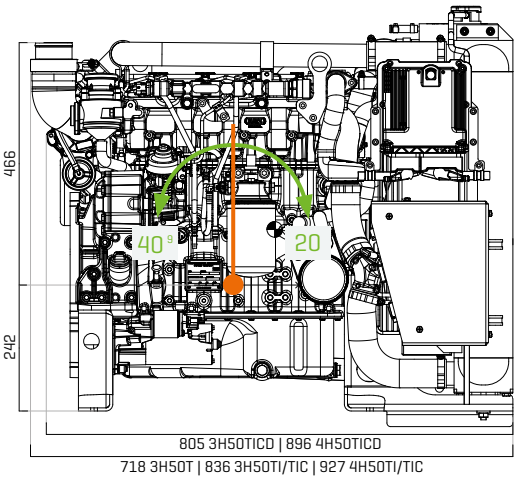
Fan to flywheel



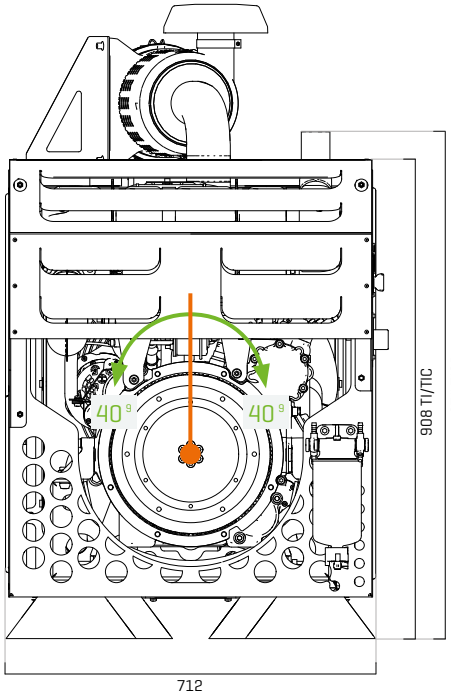


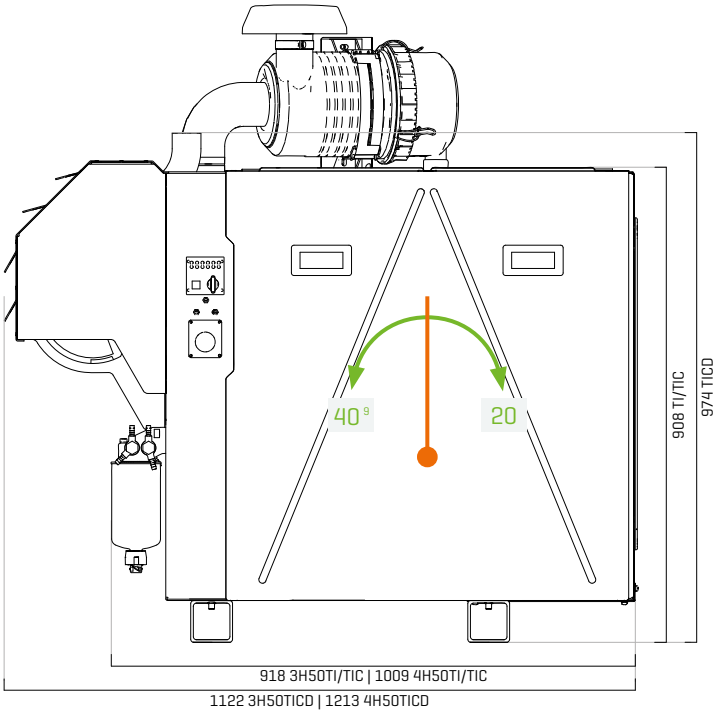
OPU (Open Power Unit)





New Silent Pack





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