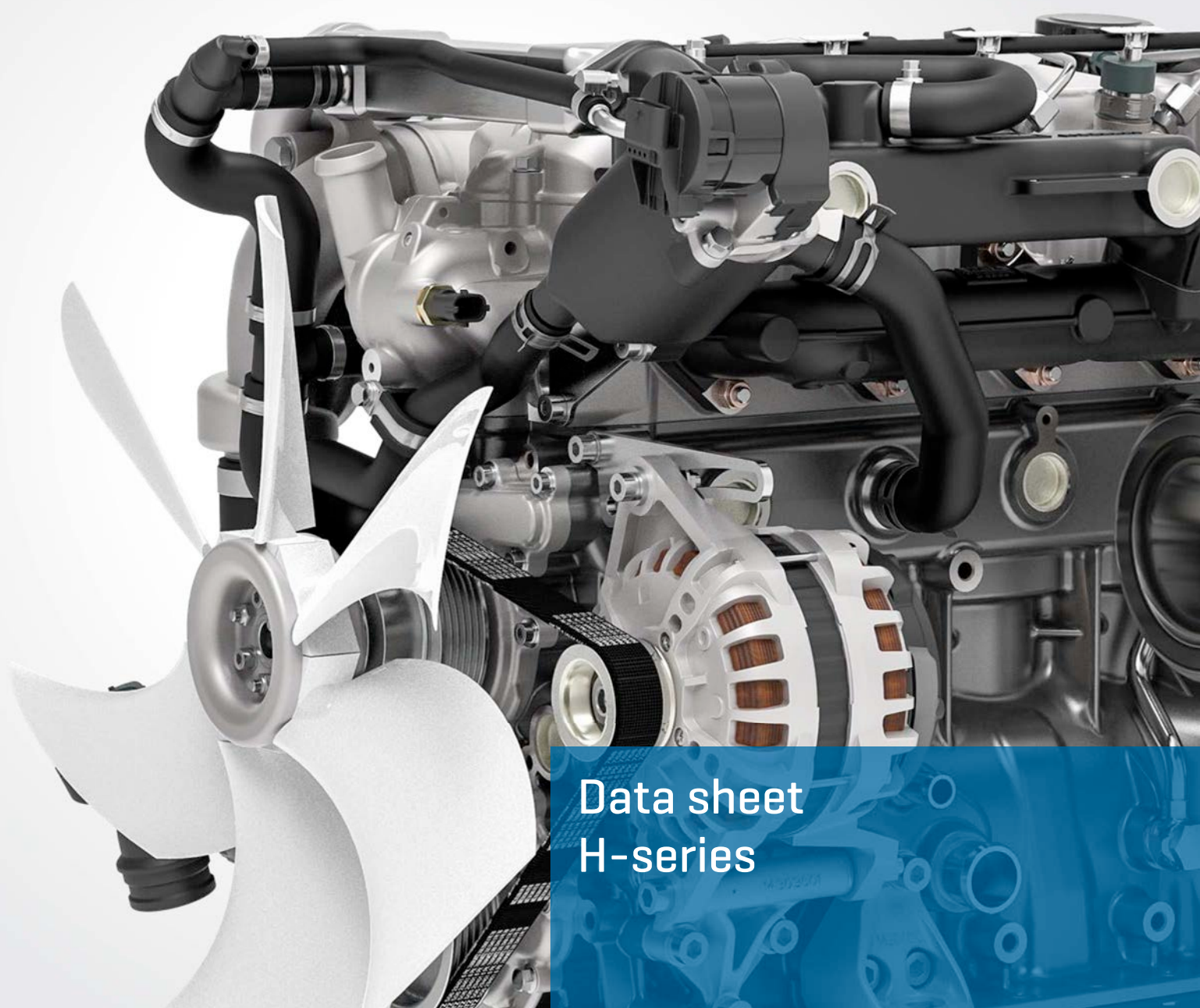
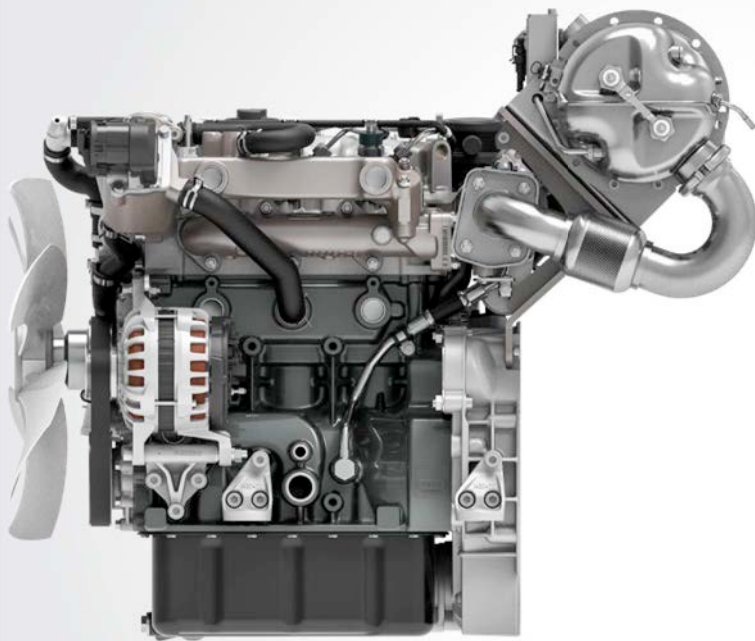


CREATING POWER SOLUTIONS.



Data sheet H-series

Hatz industrial diesel engines



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 temperature 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.

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.

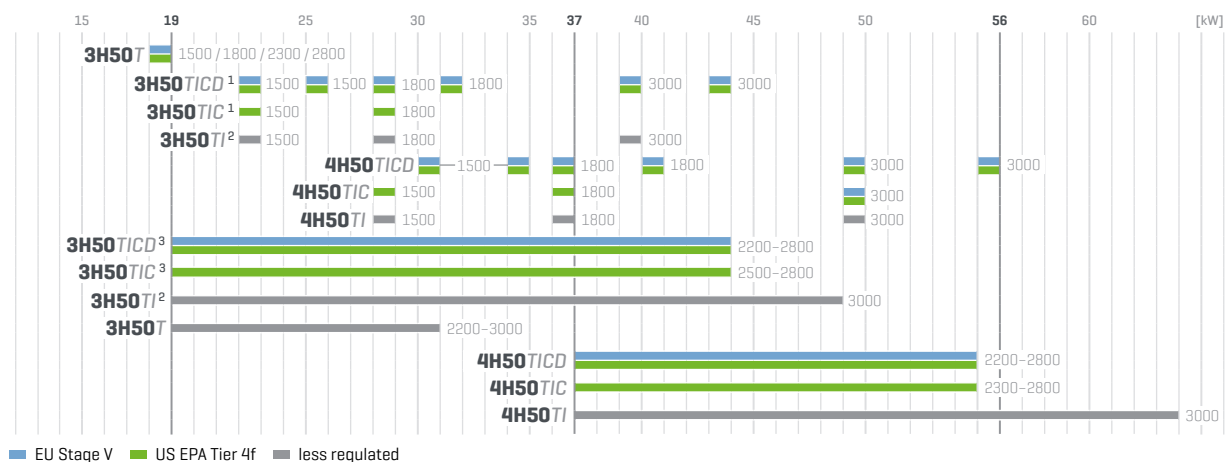
Extraordinarily high fuel efficiency

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.

Ready for the Internet of Things (IoT)

The H-Series is well equipped to redefine business models or increase their efficiency. Thanks to electronic engine control and connected solutions, machine manufacturers can expand their customer relationships, rental companies can optimise the utilisation of their fleets and machine operators can ensure more efficient processing of their contracts.

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



¹ Constant speeds are planned to be available from end 2020 ² Available mid 2020

³ Also available with 36.4 kW @ 2500 rpm for use in California without registration requirements

Technical data, performance table

Technical data			3H50T		3H50TICD		3H50TIC		3H50TI ²		4H50TICD		4H50TIC		4H50TI				
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 @ 2800rpm approx. [kg/h]		260														340		
	Amount of cooling air @ 2800 rpm approx. [kg/h]		on request				6650												
	Mass moment of inertia J _{engine} [kgm ²]		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]		150 [14 V] 110 [14 V] 60 [28 V]																
	Battery capacity max. [Ah]		110 [12 V – 450 A DIN] 66 [24 V – 300 A DIN]																
Dimensions	Basic engine		132		140		154 ^a		133		158		173 ^a		152				
	Weight [kg]	as Open Power Unit	147 ⁵		222		236 ^a		215		240		255 ^a		234				
		as New Silent Pack ⁵	—		339 ^a		327 ^a		306		360 ^a		348 ^a		327				
	L x W x H [mm] ⁹	Basic engine	583 x 556 x 657		585 x 556 x 601		585 x 601 x 601 ^a		583 x 556 x 601		672 x 556 x 598		672 x 601 x 596 ^a		670 x 556 x 592				
		as Open Power Unit	744 x 556 x 661 ⁵		806 x 660 x 807		806 x 685 x 807 ^a		806 x 660 x 807		893 x 660 x 807		893 x 685 x 807 ^a		893 x 663 x 807				
		as New Silent Pack ⁵	—		1111 x 749 x 922 ^a		918 x 749 x 922 ^a		918 x 749 x 922		1202 x 749 x 922 ^a		1009 x 749 x 922 ^a		1009 x 749 x 922				
Engine output max. [kW/ hp]		[rpm]		3H50T		3H50TICD		3H50TIC		3H50TI ²		4H50TICD		4H50TIC		4H50TI			
Blocked ISO fuel stop power (IFN) for intermittent loading according to ISO 3046-1. ⁶ Applies to variable speed. 3H50TICD 3H50TIC Also available with 36.4 kW / 49.4 hp @ 2500 rpm for use in California without registration requirements.	3000	—		30.5 / 40.9 ¹⁰		—		—		43.6 / 58.5		55.4 / 74.3		—		55.0 / 73.8			
		18.4 / 24.7 ¹¹		30.4 / 40.8 ¹⁰		43.7 / 58.6		43.6 / 58.5		55.4 / 74.3		55.0 / 73.8							
		18.4 / 24.7 ¹¹		24.9 / 33.4 ¹⁰		42.7 / 57.1		41.5 / 55.7		55.4 / 74.3		54.0 / 72.4							
		18.4 / 24.7 ¹¹		—		35.4 / 47.3		45.7 / 61.3		45.2 / 60.6									
		16.5 / 22.1 ¹¹		—		28.6 / 38.2		37.4 / 50.0		37.1 / 49.8									
Blocked ISO fuel stop power (IFN) for intermittent load according to ISO 3046-1. Applies to constant speed.	3000	—		43.6 / 58.5		—		—		55.4 / 74.3		—		—					
		1800		—		31.3 / 42.0		—		41.0 / 55.0		—		—					
		1500		—		25.5 / 34.2		—		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 ⁸		43.6 / 58.5 ⁸		48.2 / 64.6		—		—		63.7 / 85.4					
		2300		—		42.8 / 57.3 ⁸		42.5 / 56.9 ⁸		47.5 / 63.7		—		62.2 / 83.4					
		1800		—		38.2 / 51.2 ⁸		38.2 / 51.2		—		—		50.2 / 67.2					
		1500		—		29.3 / 39.3 ⁸		31.4 / 42.0		—		—		41.1 / 55.0					
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	—		—		—		39.2 / 52.6		49.9 / 66.8		—		49.5 / 66.4					
		2800		18.4 / 24.7 ¹¹		39.3 / 52.7		39.2 / 52.6		49.9 / 66.8		49.5 / 66.4							
		2300		18.4 / 24.7 ¹¹		38.3 / 51.4		37.4 / 50.0		49.9 / 66.8		48.6 / 65.2							
		1800		18.4 / 24.7 ¹¹		31.8 / 42.5		41.1 / 55.1		40.7 / 54.4									
		1500		14.9 / 19.8 ¹¹		25.7 / 34.3		33.6 / 44.9		33.4 / 44.7									
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 / 52.6		—		36.9 / 49.5		49.9 / 66.9		—		50.0 / 67.1					
		1800		18.4 / 24.7 ¹¹		28.5 / 38.2		36.4 / 48.8											
		1500		14.9 / 19.8 ¹¹		22.6 / 30.3		22.3 / 29.9		31.0 / 41.6		28.7 / 38.5							

4

²Available mid 2020

⁴Including engine mounted aftertreatment

⁵Preliminary values

⁶2300/1800/1500: Based on 2800 rpm recordset, other settings on request.

⁷2300/1800/1500: Based on 2800 rpm recordset, other engine speed only with CAN limitation.

⁸Same engine output as IFN, but higher torque.

⁹Spread at box dimensions ± 3 millimeters due to tolerance.

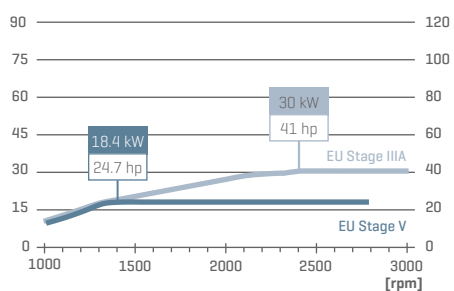
¹⁰EU Stage IIIA

¹¹EU Stage V

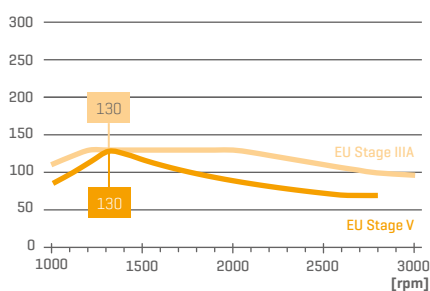
Power output, torque und fuel consumption

3H50T

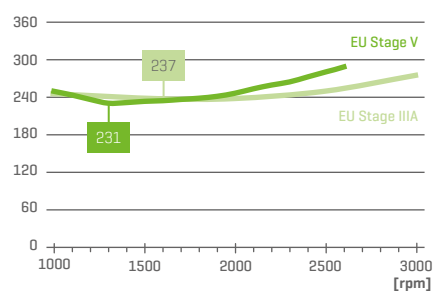
Output [kW / hp]



Torque [Nm]

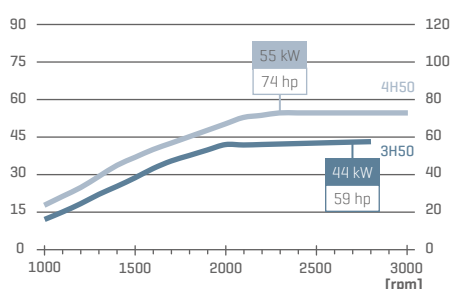


Fuel consumption [g/kWh]

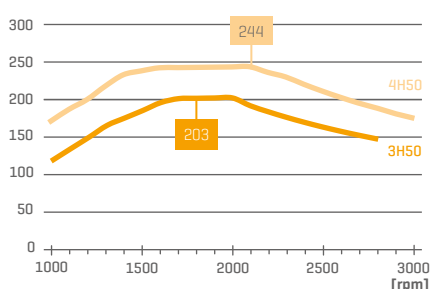


3H50TICD | 4H50TICD

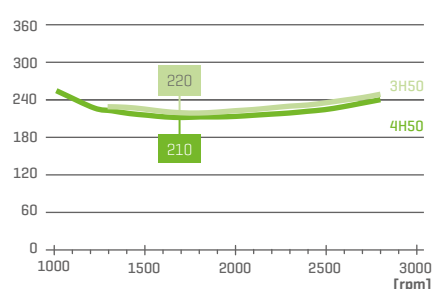
Output [kW / hp]



Torque [Nm]

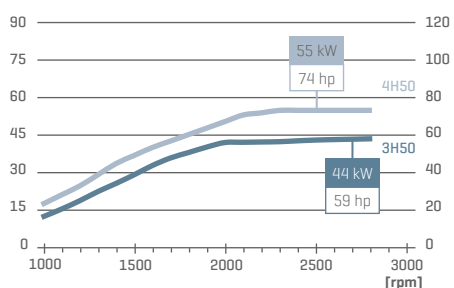


Fuel consumption [g/kWh]

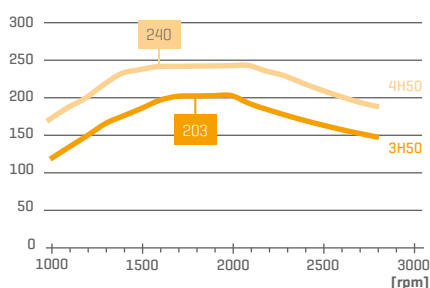


3H50TIC | 4H50TIC

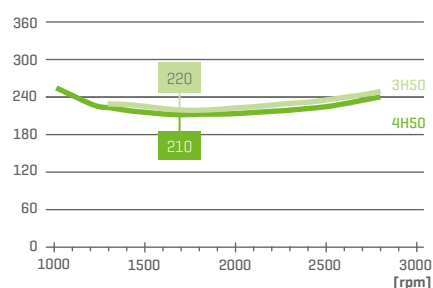
Output [kW / hp]



Torque [Nm]

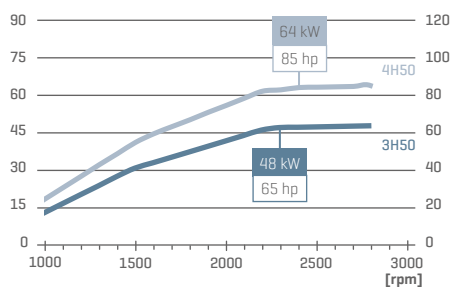


Fuel consumption [g/kWh]

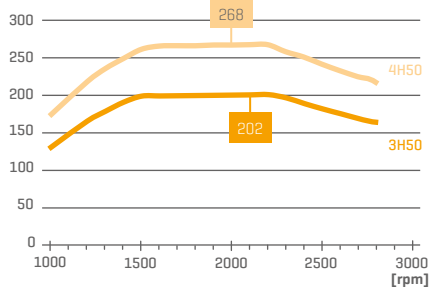


3H50T^{2,5} | 4H50TI

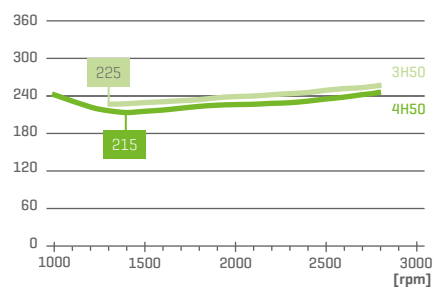
Output [kW / hp]



Torque [Nm]



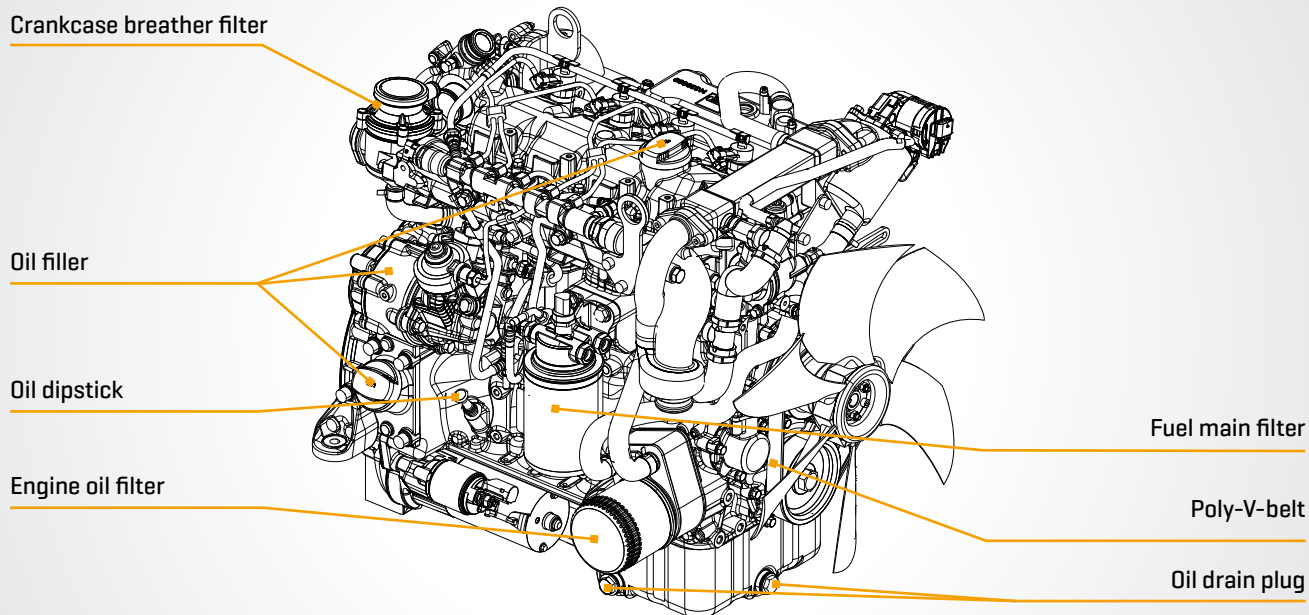
Fuel consumption [g/kWh]



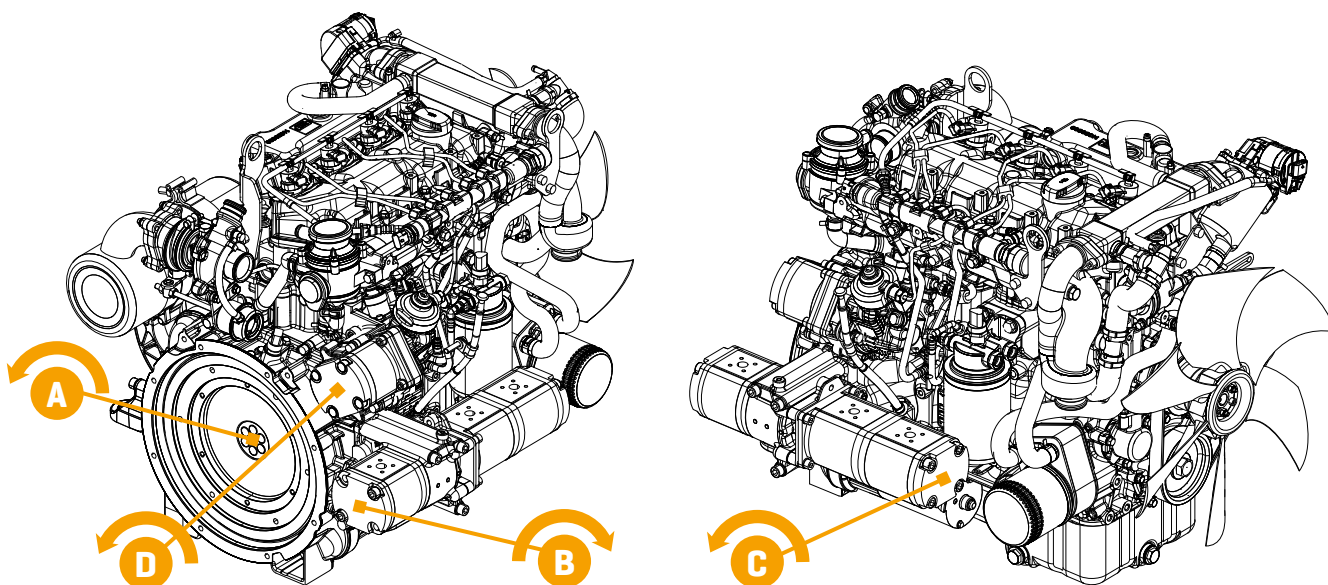
Power ratings

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



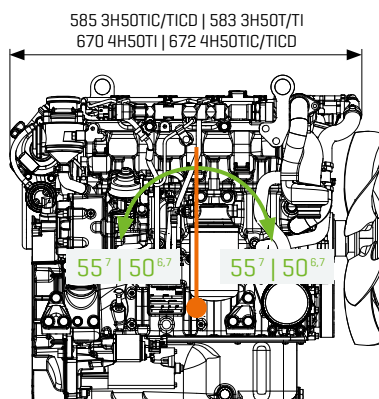
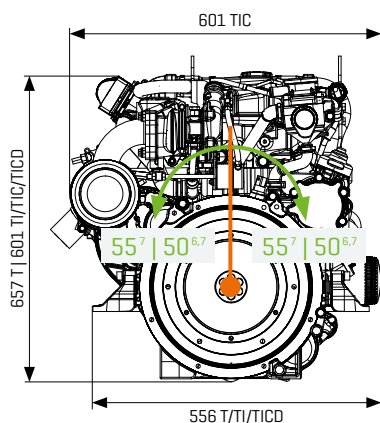
Power take off		3H50T ¹	3H50TICD	3H50TIC	3H50TI ²	4H50TICD	4H50TIC	4H50TI
Transmittable torque	A				100 %			
	B				$\Sigma = 100 \text{ Nm}; i = 1.1$			
	C							
	D				$\Sigma = 80 \text{ Nm}; i = 1.0$			

² Available mid 2020 ⁶ Applies to 4H50 models only ⁷ Requires optional inclination package

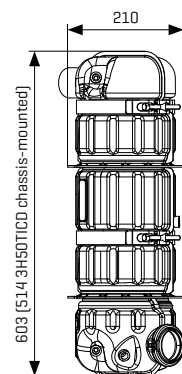
Dimensions [mm] and inclinations [°]

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.

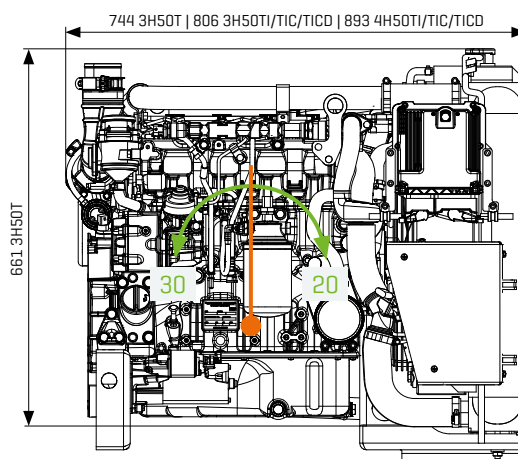
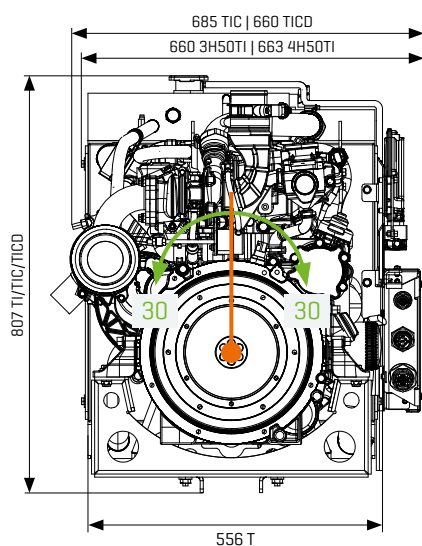
Basic engine



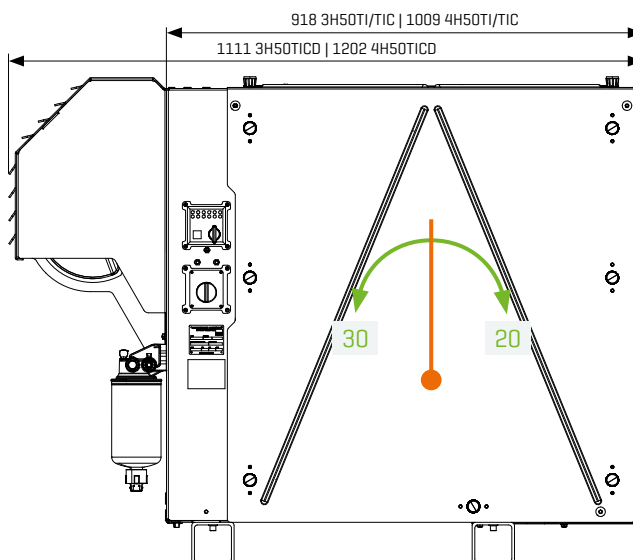
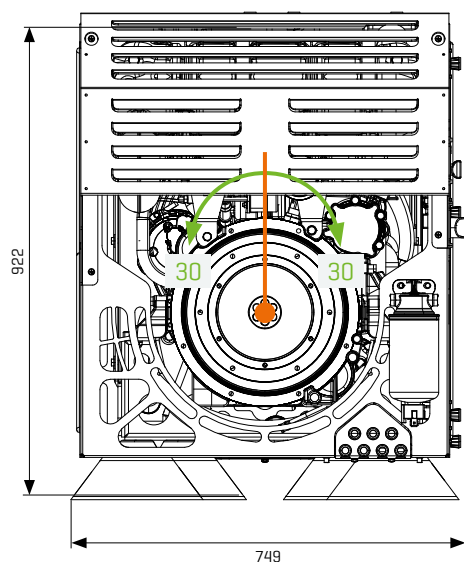
DPF



OPU (Open Power Unit)



New Silent Pack



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