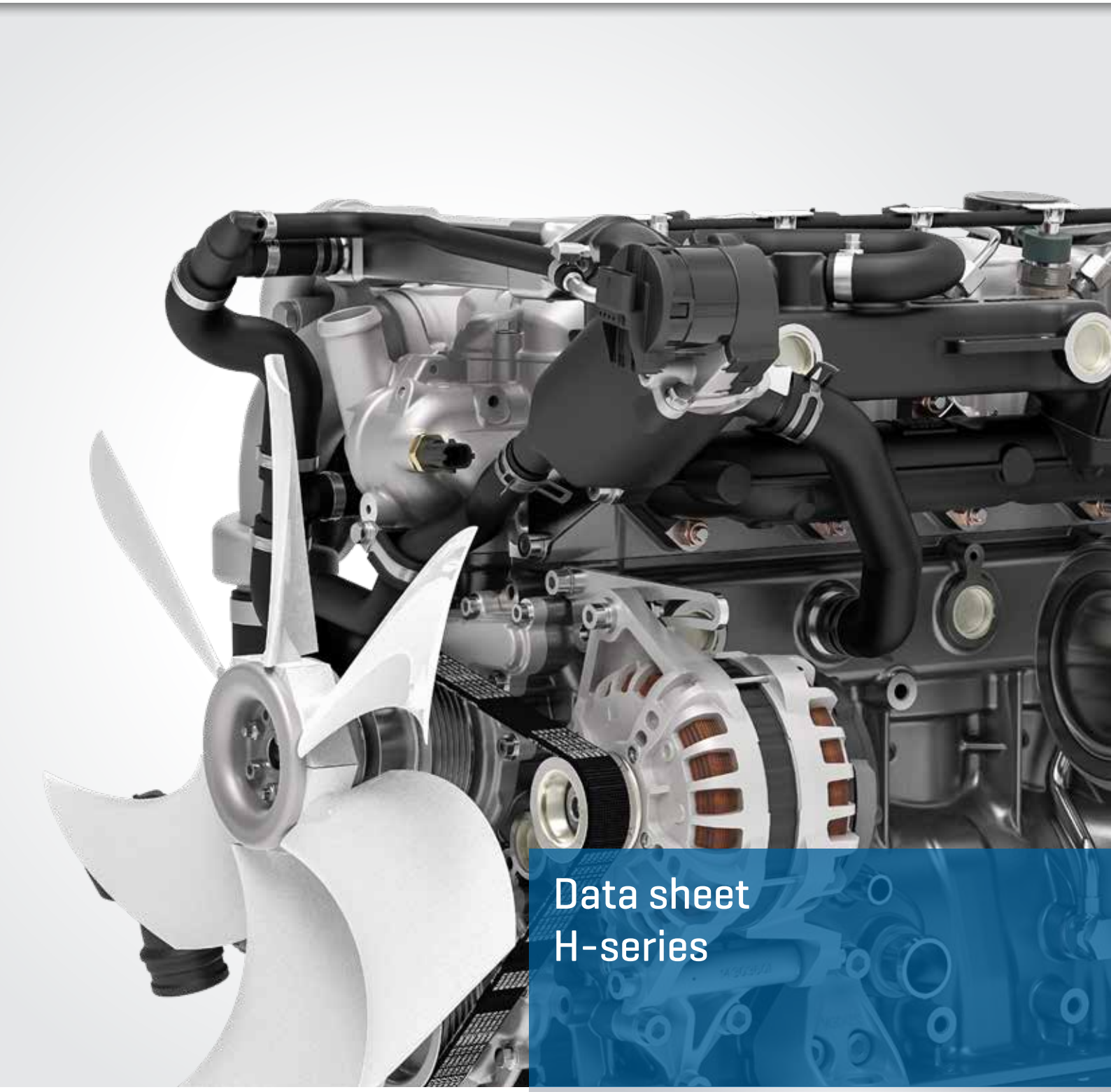
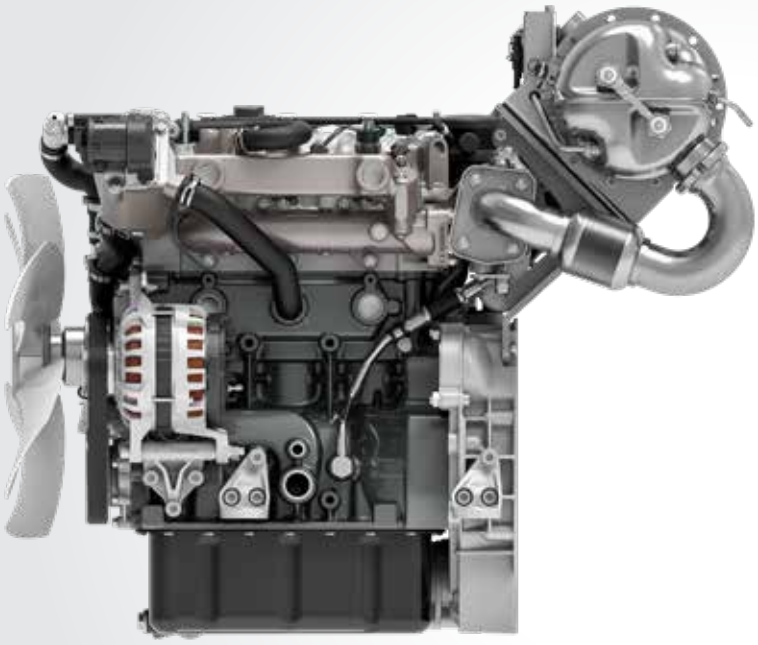
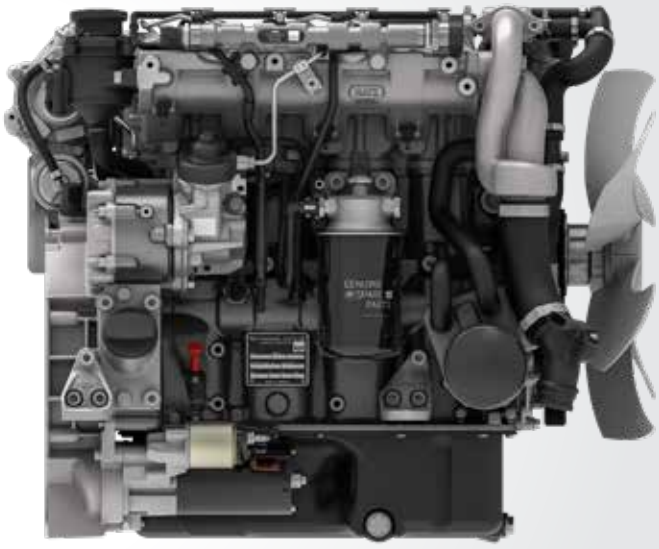
CREATING POWER SOLUTIONS.



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 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 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.

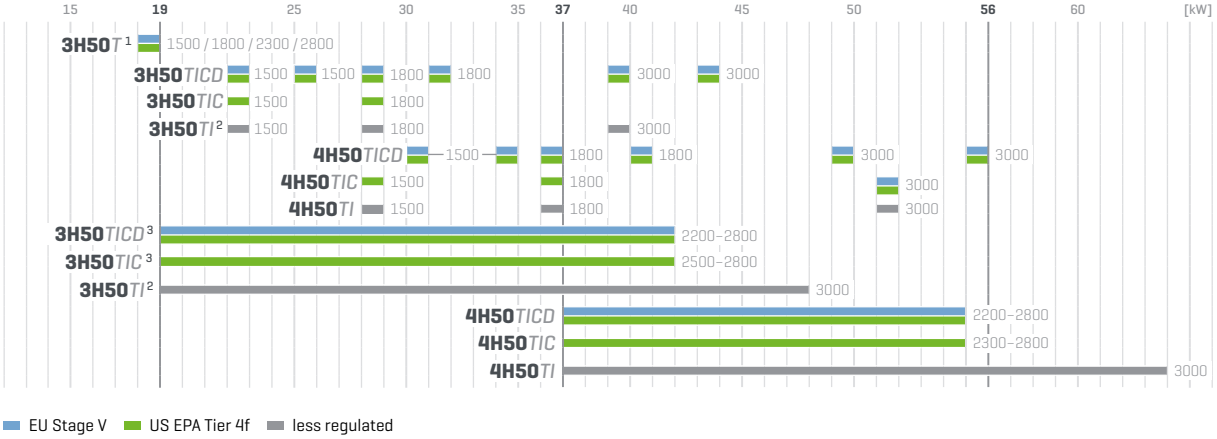
Environmental compliance
The Hatz H-series is up to 90 kilograms lighter compared to its nearest competitor. This weight saving not only results in a lower power-to-weight ratio, but also in a reduced need for raw materials. The engine family meets all emission requirements of the EU and the USA, the 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] Available end 2019 [2] Available early 2020 [3] 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*	3H50*TIC*	3H50*TI*[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					
	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]	Basic engine	132	140	154[4]	133	158	173[4]	152
		as Open Power Unit	147[5]	222	236[4]	215	240	255[4]	234
		as New Silent Pack[1,5]	—	339[4]	327[4]	306	360[4]	348[4]	327
	L x W x H [mm][9]	Basic engine	660 x 568 x 650	629 x 559 x 691	660 x 613 x 650[4]	660 x 568 x 650	720 x 559 x 691	751 x 613 x 650[4]	751 x 568 x 650
		as Open Power Unit	718 x 568 x 650[5]	805 x 663 x 807	836 x 685 x 807[4]	836 x 663 x 807	896 x 663 x 807	927 x 685 x 807[4]	927 x 663 x 807
		as New Silent Pack[1,5]	—	1122 x 712 x 922[4]	918 x 712 x 922[4]	918 x 712 x 922	1213 x 712 x 922[4]	1009 x 712 x 922[4]	1009 x 712 x 922

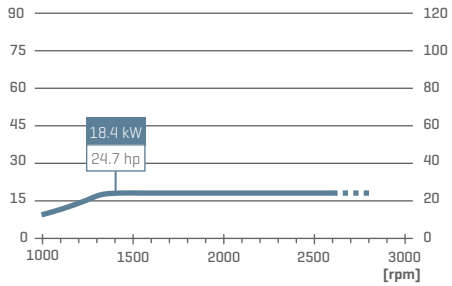
Engine output max. [kW / hp]	[rpm]	3H50*T*[1]	3H50*TICD*	3H50*TIC*	3H50*TI*[2]	4H50*TICD*	4H50*TIC*	4H50*TI*
Blocked ISO fuel stop power (IFN) for intermittent loading according to ISO 3046-1.[6] **3H50***TICD* | **3H50***TIC* Also available with 36.4 kW / 49.4 hp @ 2500 rpm for use in California without registration requirements.	3000	—	—	—	43.6 / 58.5	55.4 / 74.3	—	55.0 / 73.8
	2800	18.4 / 24.7	43.7 / 58.6	43.6 / 58.5		55.4 / 74.3	55.0 / 73.8	
	2300	18.4 / 24.7	42.7 / 57.1	41.5 / 55.7		55.4 / 74.3	54.0 / 72.4	
	1800	18.4 / 24.7	35.4 / 47.3	35.4 / 47.3		45.7 / 61.3	45.2 / 60.6	
	1500	16.5 / 22.1	28.6 / 38.2	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]	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	39.3 / 52.7	39.2 / 52.6		49.9 / 66.8	49.5 / 66.4	
	2300	18.4 / 24.7	38.3 / 51.4	37.4 / 50.0		49.9 / 66.8	48.6 / 65.2	
	1800	18.4 / 24.7	31.8 / 42.5	31.8 / 42.5		41.1 / 55.1	40.7 / 54.4	
	1500	14.9 / 19.8	25.7 / 34.3	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	28.5 / 38.2	28.5 / 38.2		36.4 / 48.8	36.4 / 48.8	
	1500	14.9 / 19.8	22.6 / 30.3	22.3 / 29.9		31.0 / 41.6	28.7 / 38.5	

[1] Available end 2019 [2] Available early 2020 [4] Including engine mounted aftertreatment [5] Preliminary values
[6] 2300/1800/1500: Based on 2800 rpm recordset, other settings on request. [7] 2300/1800/1500: Based on 2800 rpm recordset, other engine speed only with CAN limitation.
[8] Same engine output as IFN, but higher torque. [9] Spread at box dimensions ± 3 millimeters due to tolerance.

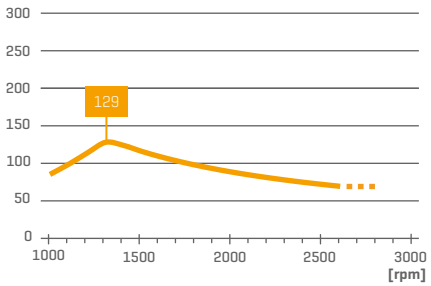
Power output, torque und fuel consumption

3H50*T*[1]

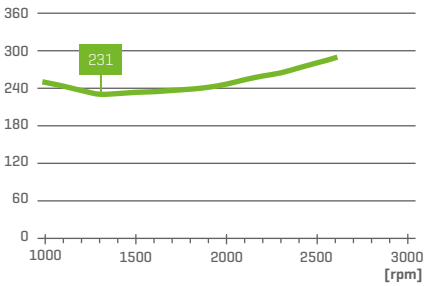
Output [kW / hp][5]



Torque [Nm][5]

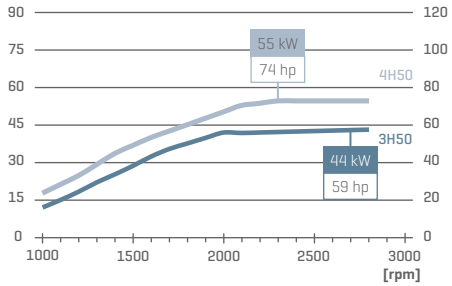


Fuel consumption [g/kWh][5]

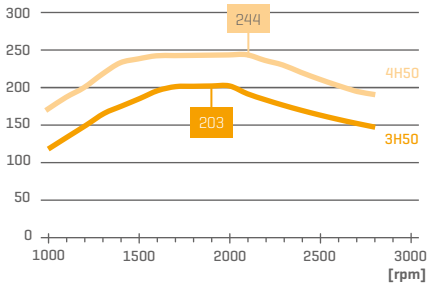


3H50*TICD* | 4H50*TICD*

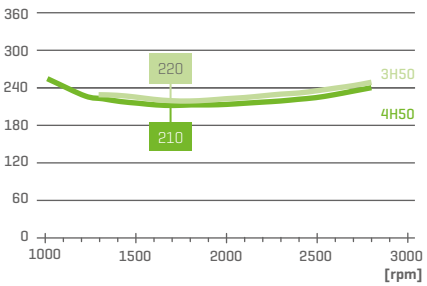
Output [kW / hp]



Torque [Nm]

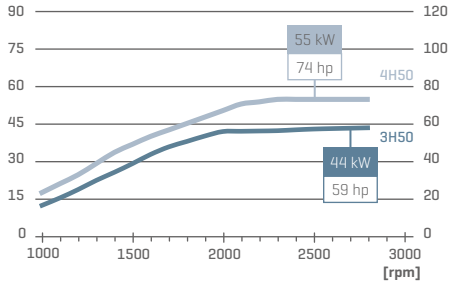


Fuel consumption [g/kWh]

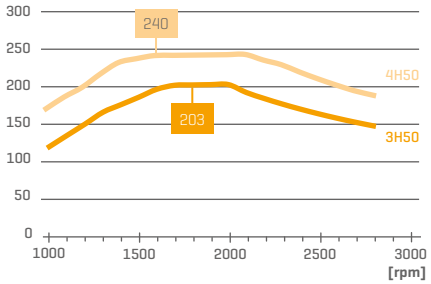


3H50*TIC* | 4H50*TIC*

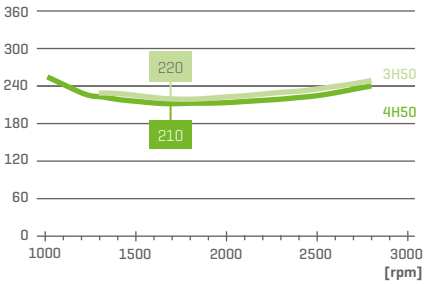
Output [kW / hp]



Torque [Nm]

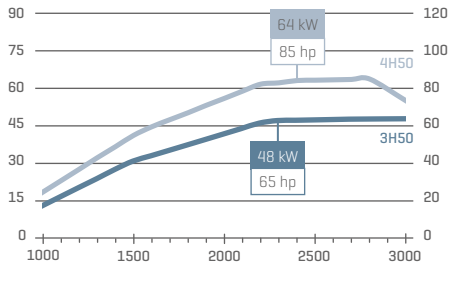


Fuel consumption [g/kWh]

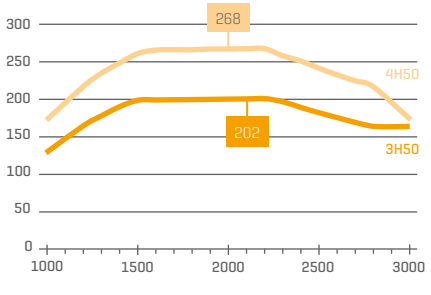


3H50*TI*[2] | 4H50*TI*

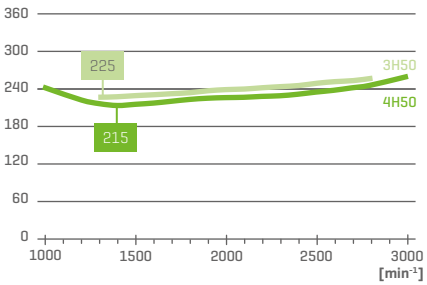
Output [kW / hp][5]



Torque [Nm][5]

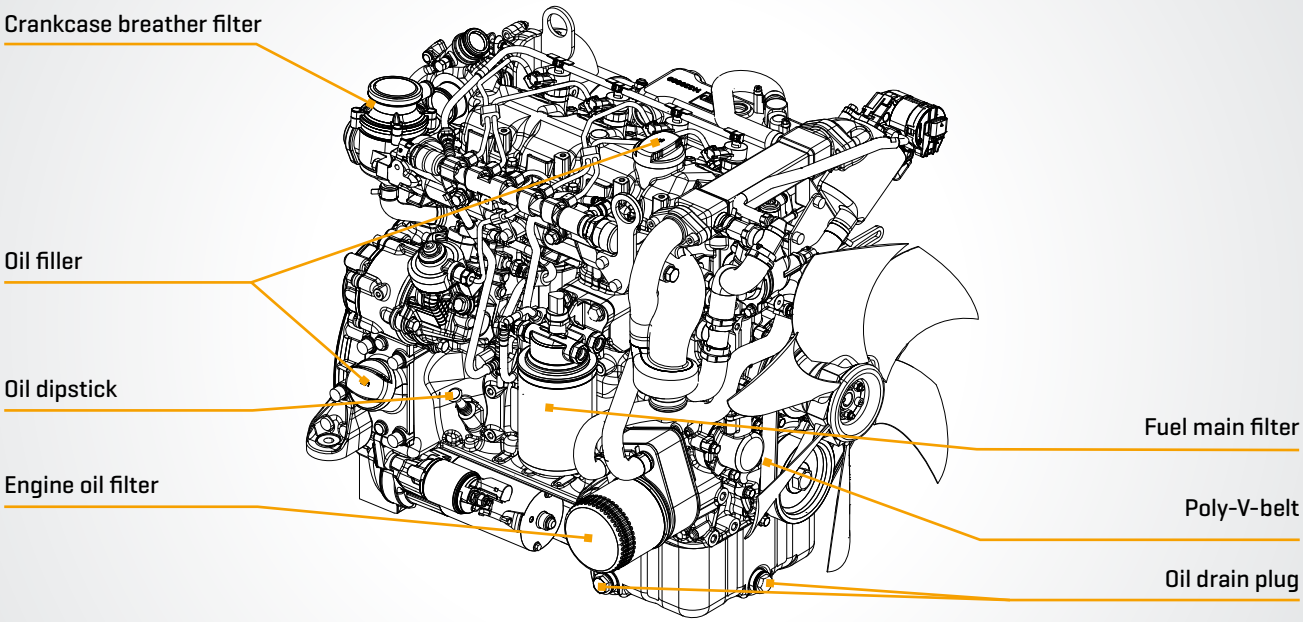


Fuel consumption [g/kWh][5]

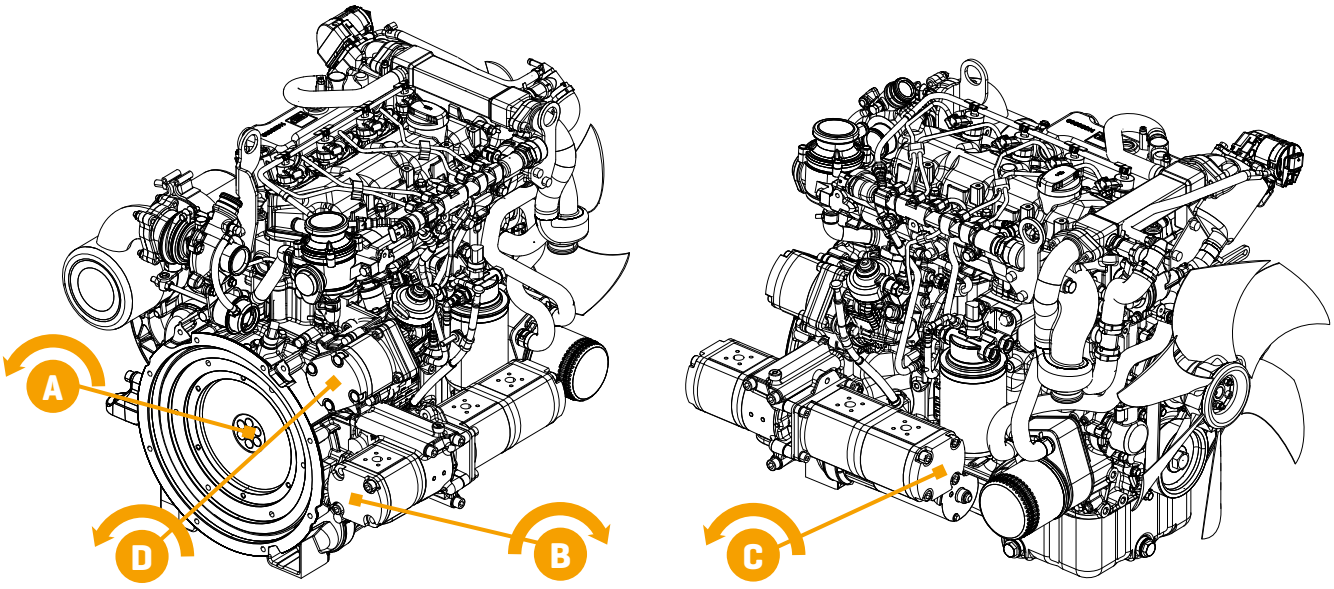


Power ratings
Power reduction chart available on request. Up to 1460 metres no power reduction. Power reduction based on temperature is depending on cooling system, no derating from 50 to 60 °C depending on the operations level for Hatz OPU or New Silent Pack. The power requirement of the alternator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

Maintenance and operating points



Power take off



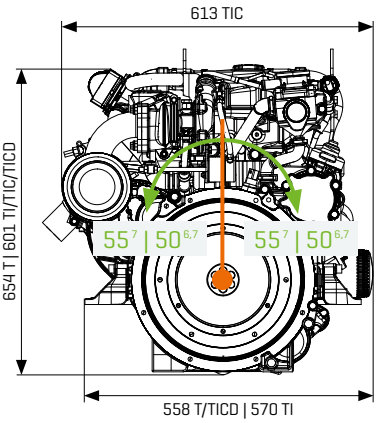
Power take off		3H50*T*[1]	3H50*TICD*	3H50*TIC*	3H50*TI*[2]	4H50*TICD*	4H50*TIC*	4H50*TI*
Transmittable torque	A	100 %						
	B	∑ = 100 Nm; i = 1.1						
	C							
	D	∑ = 80 Nm; i = 1.0						

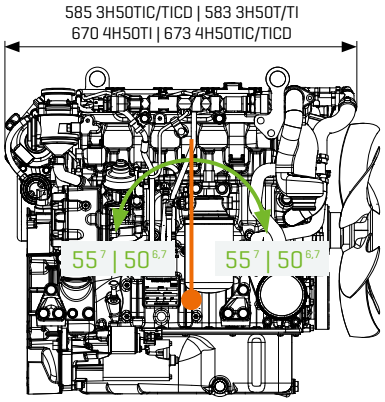
[1] Available end 2019 [2] Available early 2020 [6] Applies to 4H50 models only [7] Requires optional inclination package

Dimensions [mm] and inclinations [°]

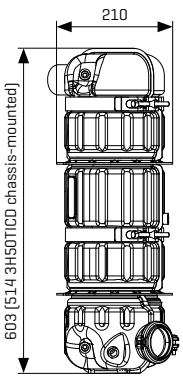
Dimensions for DPF on request.
Spread at box dimensions ± 3 millimeters due to tolerance.
Drawings with detail and connection dimensions as PDF and DXF
can be found at www.hatz-diesel.com.

Basic engine

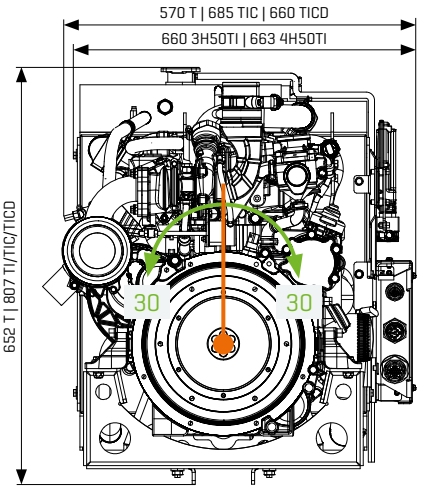


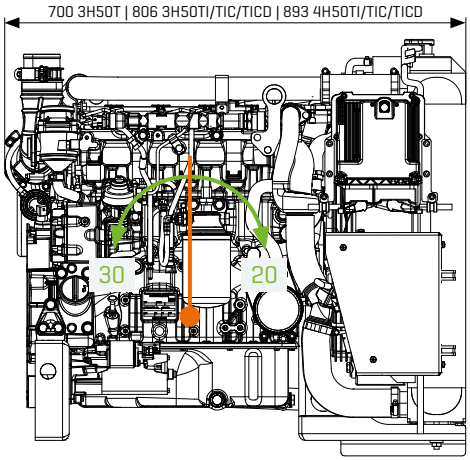


DPF

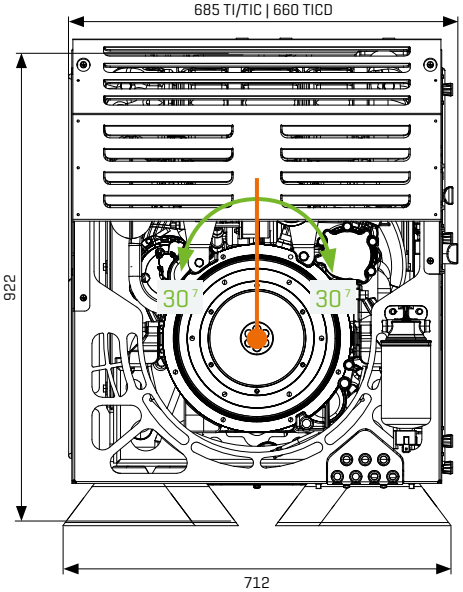


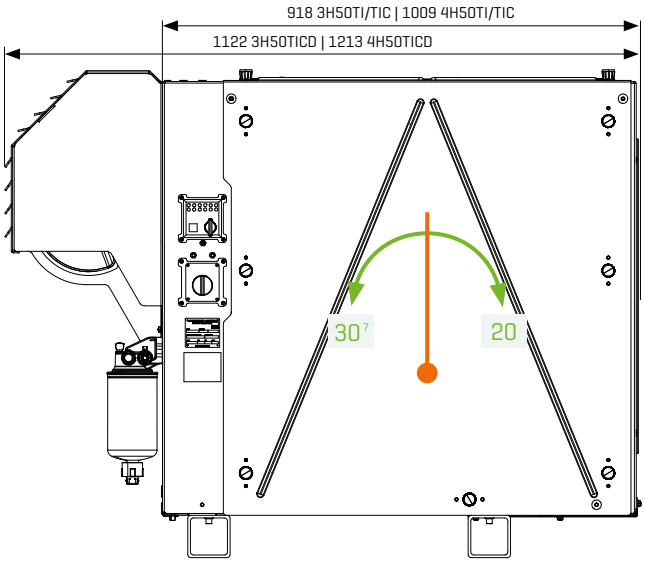
OPU (Open Power Unit)





New Silent Pack





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70252831 EN 04.19 Printed in Germany