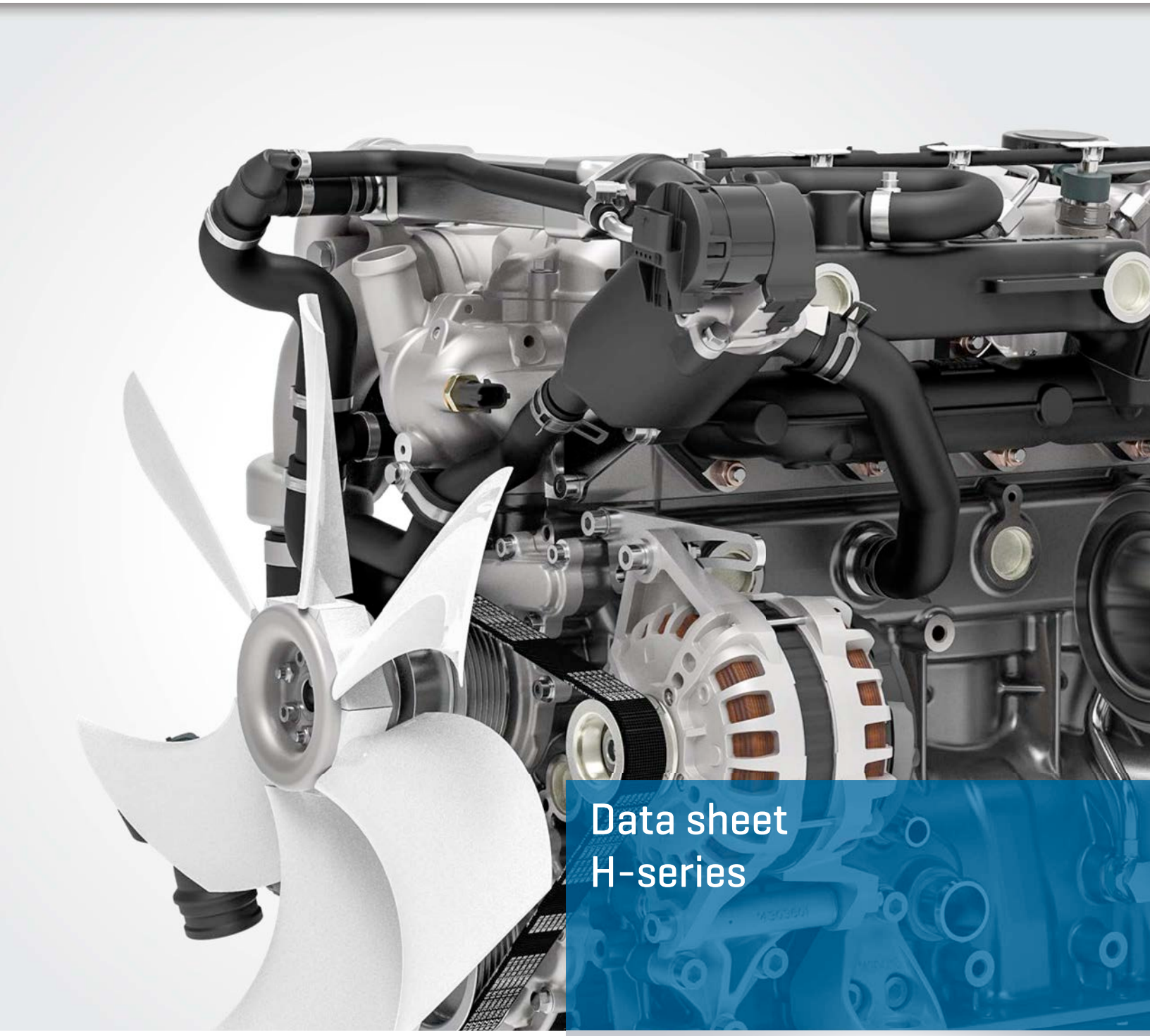
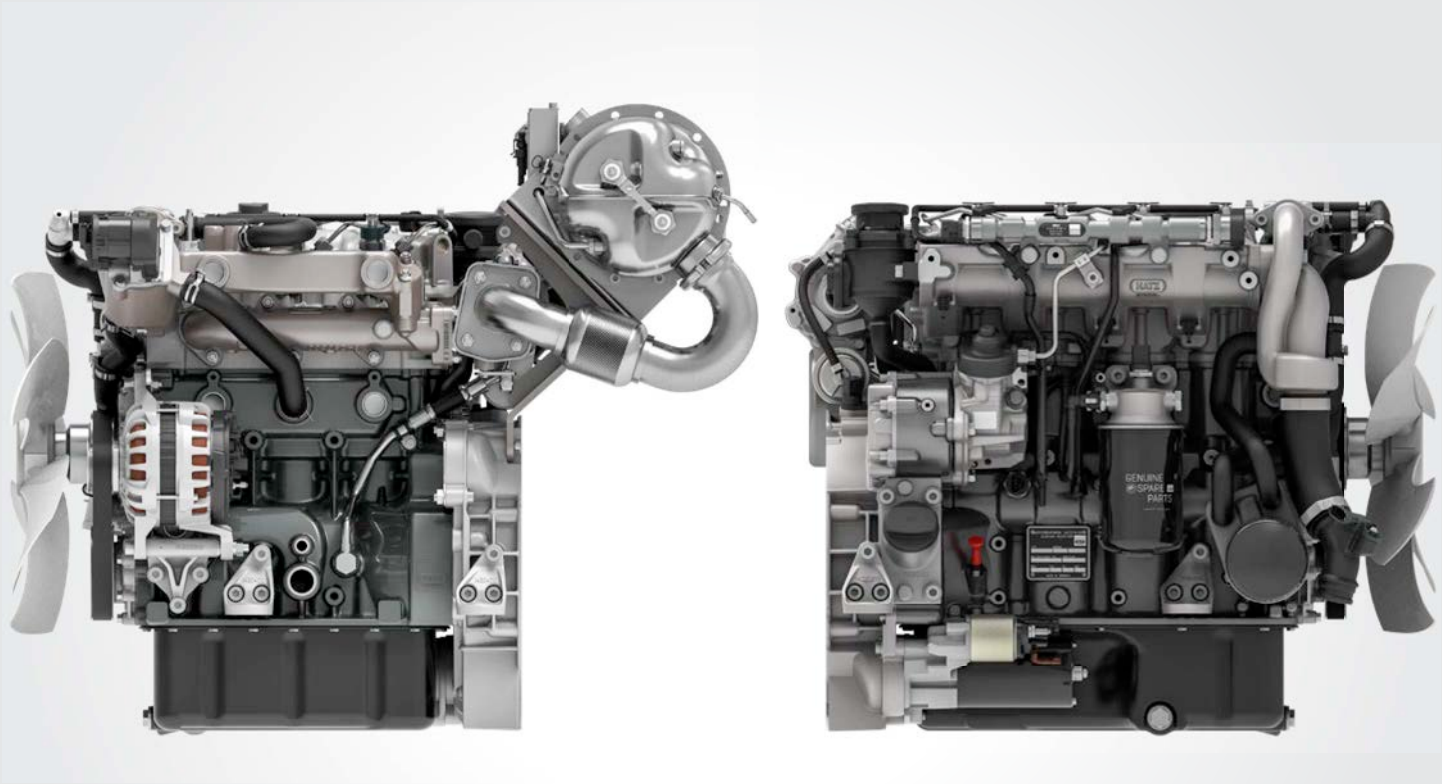
CREATING POWER SOLUTIONS.



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 comes with everything that you would expect from a powerful and modern industrial engine. Impressive smooth-running, dynamics and maintenance friendliness are its hallmarks. With consistently low fuel consumption over a wide load and speed range, it sets new standards in fuel economy. H-series engines are built with high-quality parts only. These include an injection system and sensors from prestigious 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 fully tested by the manufacturer. In addition to the standard scope of delivery, the air filter, radiator, charged air radiator, hosing and the cable loom are already pre-installed upon delivery.

New Silent Pack – the quietest Hatz multi-cylinder engines
Compared to the OPU version (see left), the Silent Packs are up to 60 percent quieter. The powder-coated sheet metal canopy also provides efficient weather and touch protection. Despite these additional features, the maximum ambient temperature is the same as the OPU.

Hatz H-series: innovation meets reliability

A ground-breaking downsizing approach was adopted in the development of the Hatz H-series. The outcome are extremely compact, turbocharged engines that achieve a maximum output of 85 horsepower, setting benchmarks in their performance classes.

Conservative, innovative engine for a long service life
The Hatz H-series has two valves per cylinder, a design that 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-friendliness
The H-series also scores high in terms of user-friendliness. Firstly, all maintenance points are accessible on the same side of the engine; secondly, the maintenance intervals of 500 engine hours are widely spaced. Hydraulic valve play compensation and generously sized filters make it possible.

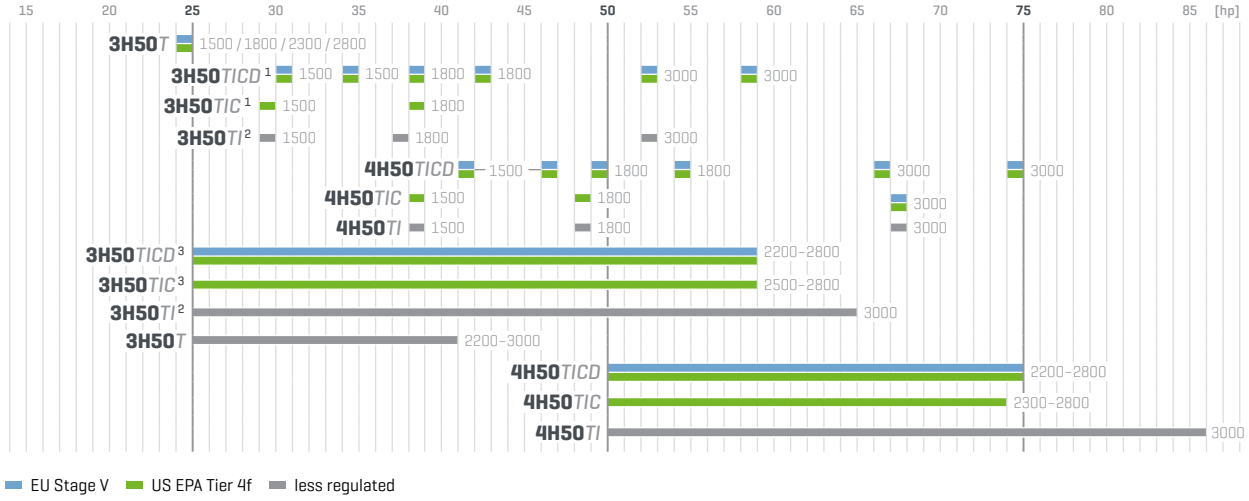
Environmental compliance
The Hatz H-series is up to 200 pounds lighter compared to its nearest competitor. This weight saving not only results in a lower power-to-weight ratio, but also in a reduced need for raw materials. The engine family meets all emission requirements of the EU and the USA, the latter even without the use of a particulate filter.

Common-rail system
One of the key factors resulting in 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, a perfect balance is reached between dynamics, low combustion noise, low emissions and economy.

Extraordinarily high fuel efficiency
When it comes to fuel efficiency, the Hatz H-series models with a fuel consumption of not more than 3.7 and 4.8 gallons per hour at maximum power output set new standards. The special feature here is that consumption values close to the optimum are achieved over a wide load and speed range.
A key to the exceptionally high fuel efficiency is the reduction of internal friction, which is largely due to the engine's 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 optimize the utilization 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 / 49.4 hp @ 2500 rpm for use in California without registration requirements

Technical data, performance table

Technical data			3H50*T*	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 [psi]		26,100						
	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 [in]		3.31 x 3.47						
	Displacement [cu in]		89.34				119.12		
	Mean piston speed @ 3000 rpm [ft / min]		1,732						
	Compression ratio		17.5:1						
	Lubrication oil consumption, related to full load		max. 0.5 % of fuel consumption						
	Oil filling	max. [US qts]	5.3				7.4		
		min. [US qts]	4.4				6.3		
	Speed control	Lowest idle speed [rpm]	900						
		Control method	CAN J1939 or multi-stage switch						
Installation information	Amount of combustion air @ 2800 rpm approx. [cfm]		127				166		
	Amount of cooling air @ 2800 rpm approx. [cfm]		on request	3251					
	Mass moment of inertia J_{engine} [lb · ft²]		5.15				5.55		
	Starter [V]		12 (3.0 hp) | 24 (4.1 hp)						
	Cold start temperature [°F]		–13 (12 V) | –25.6 (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	Weight [lb]	Basic engine	291	309	340[4]	293	348	381[4]	335
		as Open Power Unit	324[5]	489	520[4]	474	529	562[4]	516
		as New Silent Pack[5]	—	747[4]	721[4]	675	794[4]	767[4]	721
	L x W x H [in][9]	Basic engine	23.0 x 21.9 x 25.9	23.0 x 21.9 x 23.7	23.0 x 23.7 x 23.7[4]	23.0 x 21.9 x 23.7	26.5 x 21.9 x 23.5	26.5 x 23.7 x 23.5[4]	26.4 x 21.9 x 23.3
		as Open Power Unit	29.3 x 21.9 x 26.0[5]	31.7 x 26.0 x 31.8	31.7 x 27.0 x 31.8[4]	31.7 x 26.0 x 31.8	35.2 x 26.0 x 31.8	35.2 x 27.0 x 31.8[4]	35.2 x 26.1 x 31.8
		as New Silent Pack[5]	—	43.7 x 29.5 x 36.3[4]	36.1 x 29.5 x 36.3[4]	36.1 x 29.5 x 36.3	47.2 x 29.5 x 36.3[4]	39.7 x 29.5 x 36.3[4]	39.7 x 29.5 x 36.3

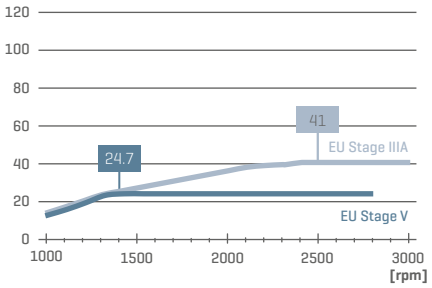
Engine output max. [hp]	[rpm]	3H50*T*		3H50*TICD*	3H50*TIC*	3H50*TI*[2]	4H50*TICD*	4H50*TIC*	4H50*TI*
Blocked ISO fuel stop power (IFN) for intermittent loading according to ISO 3046-1.[6] Applies to variable speed. **3H50***TICD* **| 3H50***TIC* Also available with 49.4 hp @ 2500 rpm for use in California without registration requirements.	3000	—	40.9[10]	—	—	58.5	74.3	—	73.8
	2800	24.7[11]	40.8[10]	58.6	58.5		74.3	73.8	
	2300	24.7[11]	33.4[10]	57.1	55.7		74.3	72.4	
	1800	24.7[11]	—	47.3			61.3	60.6	
	1500	22.1[11]	—	38.2			50.0	49.8	
Blocked ISO fuel stop power (IFN) for intermittent load according to ISO 3046-1. Applies to constant speed.	3000	—		58.5	—	—	74.3	—	—
	1800	—		42.0	—	—	55.0	—	—
	1500	—		34.2	—	—	46.9	—	—
Blocked ISO fuel stop power (IFNsi) for strongly intermittent load according to ISO 3046-1.[7]	2800	—		58.6[8]	58.5[8]	64.6	—		85.4
	2300	—		57.3[8]	56.9[8]	63.7	—		83.4
	1800	—		51.2[8]		51.2	—		67.2
	1500	—		39.3[8]		42.0	—		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	—		—	—	52.6	66.8	—	66.4
	2800	24.7[11]		52.7	52.6		66.8	66.4	
	2300	24.7[11]		51.4	50.0		66.8	65.2	
	1800	24.7[11]		42.5			55.1	54.4	
	1500	19.8[11]		34.3			44.9	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	—		52.6	—	49.5	66.9	—	67.1
	1800	24.7[11]		38.2			48.8		
	1500	19.8[11]		30.3	29.9		41.6	38.5	

[2] Available mid 2020 [4] Including engine-mounted after-treatment [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] Box dimension spread of ±3 millimeters due to tolerance. [10] EU Stage IIIA [11] EU Stage V

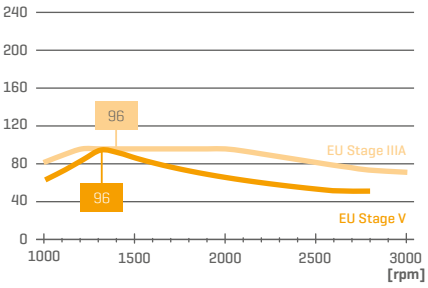
Power output, torque and fuel consumption

3H50*T*

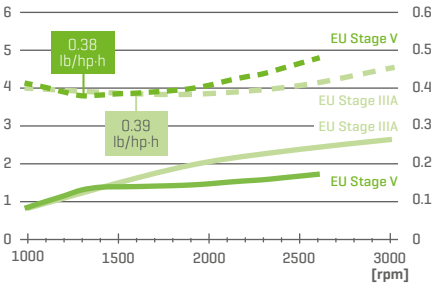
Output [hp]



Torque [ft·lb]

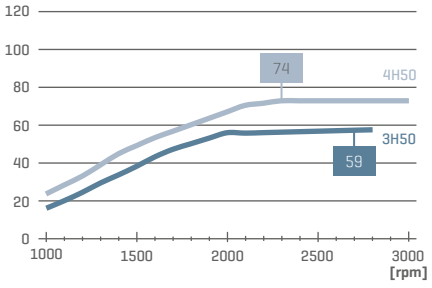


Fuel consumption — [gal/h] - - - [lb/hp·h]

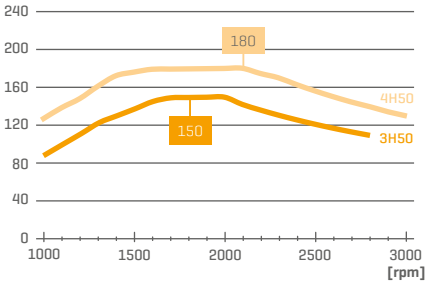


3H50*TICD* | 4H50*TICD*

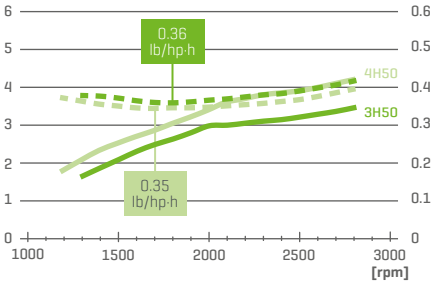
Output [hp]



Torque [ft·lb]

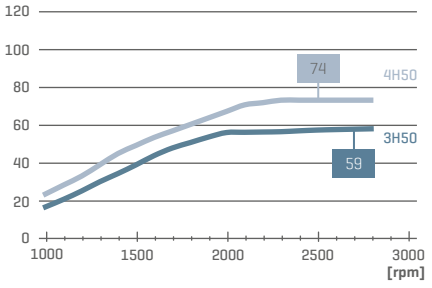


Fuel consumption — [gal/h] - - - [lb/hp·h]

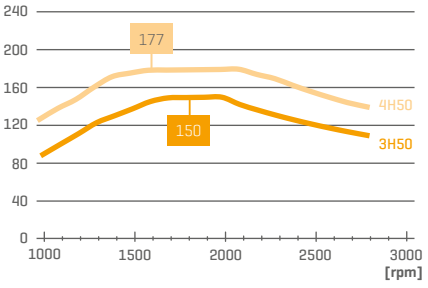


3H50*TIC* | 4H50*TIC*

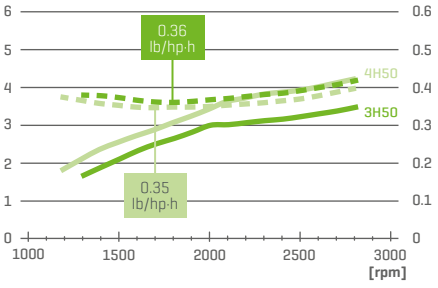
Output [hp]



Torque [ft·lb]

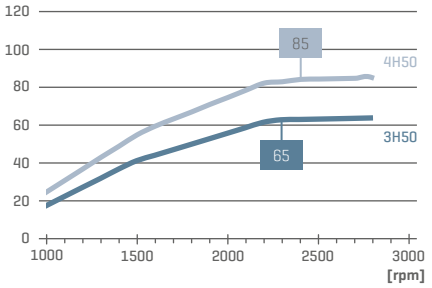


Fuel consumption — [gal/h] - - - [lb/hp·h]

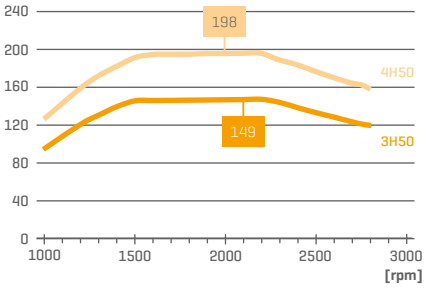


3H50*TI*[2,5] | 4H50*TI*

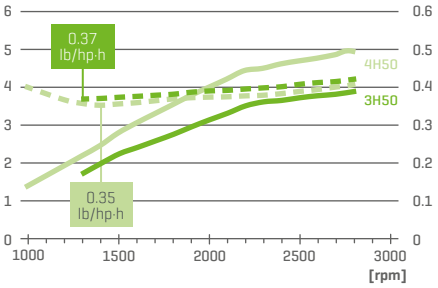
Output [hp]



Torque [ft·lb]

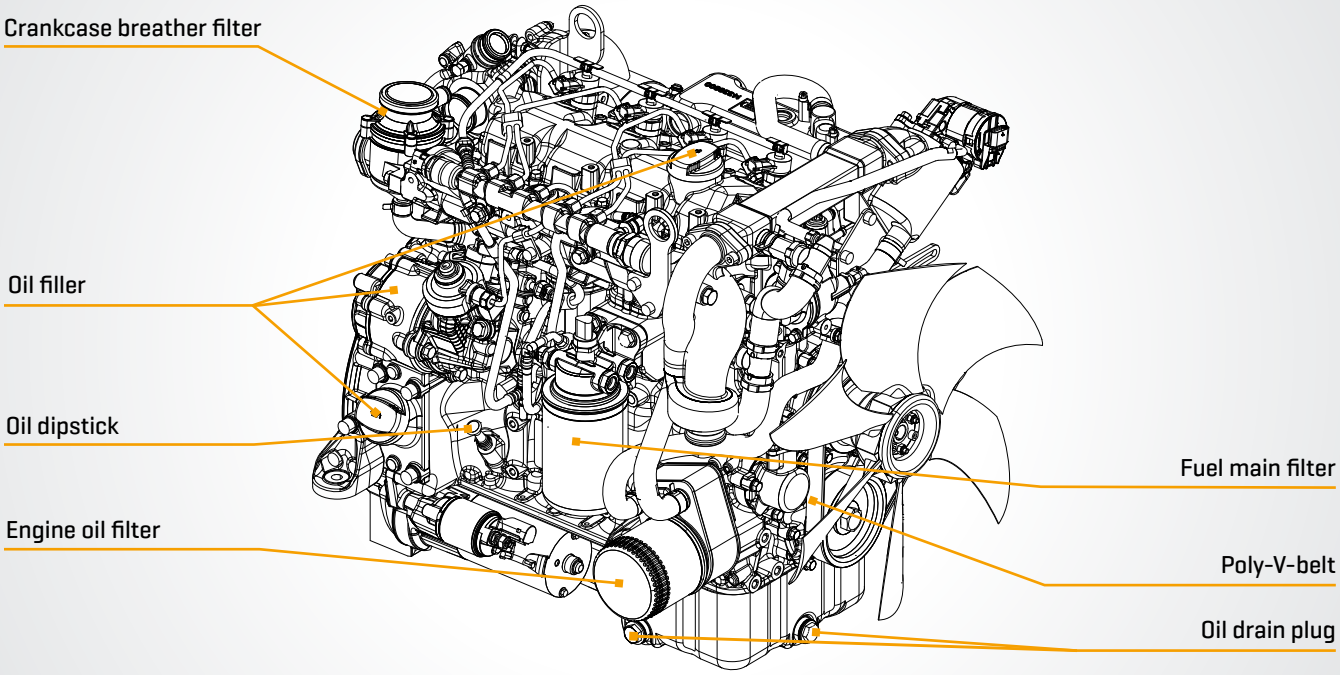


Fuel consumption — [gal/h] - - - [lb/hp·h]

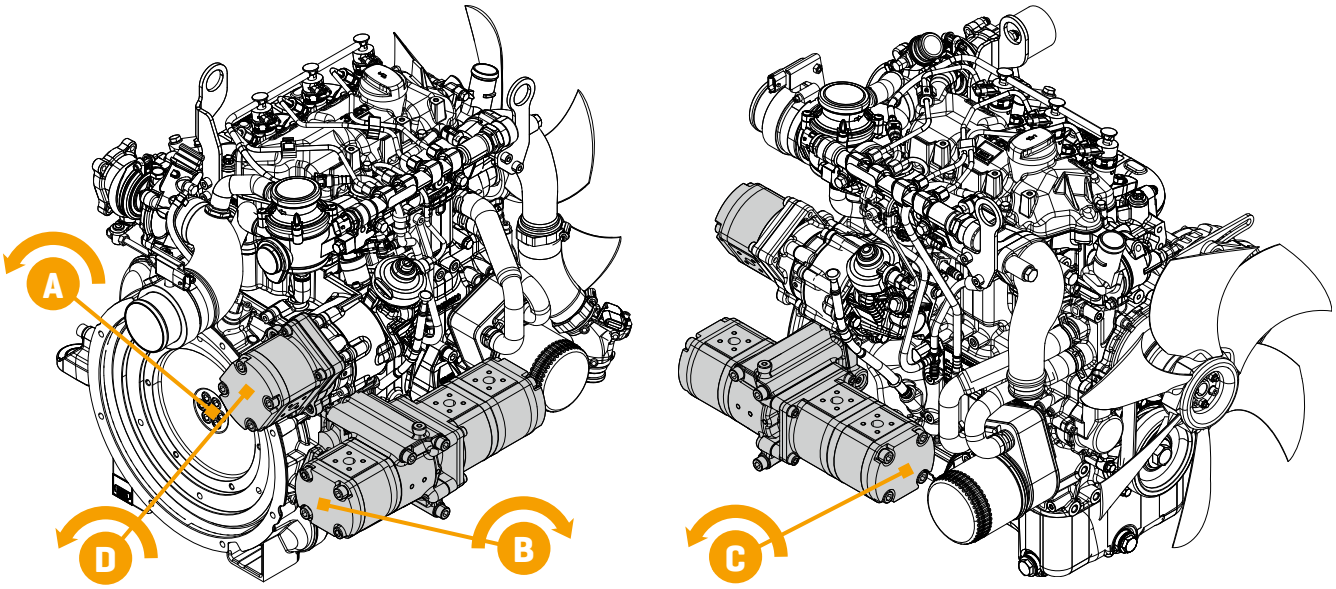


Power ratings Power reduction chart available on request. Up to 4790 feet no power reduction. No power reduction necessary up to the released maximum ambient temperature. The power requirement of fan and alternator are already considered in the charts above.

Maintenance and operating points



Power take off



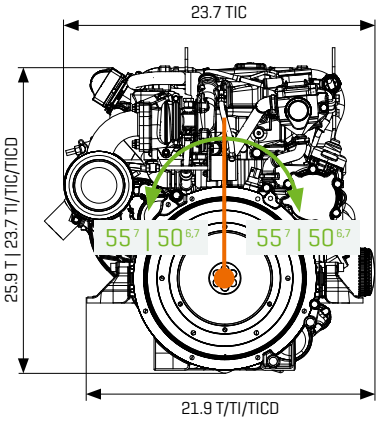
Power take off		3H50*T*	3H50*TICD*	3H50*TIC*	3H50*TI*[3]	4H50*TICD*	4H50*TIC*	4H50*TI*
Transmittable torque	A	100 %						
	B	∑ = 74 lb·ft; i = 1.1						
	C							
	D	∑ = 59 lb·ft; i = 1.0						

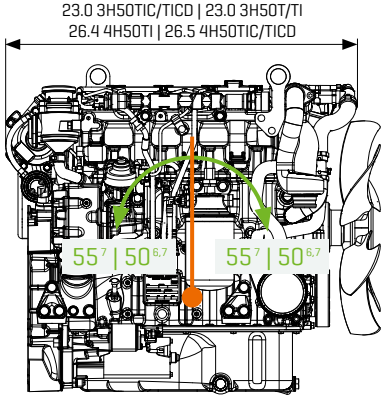
[3] Available mid 2020 [6] Applies to 4H50 models only [7] Requires optional inclination package

Dimensions [in] and inclinations [°]

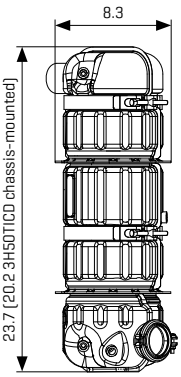
Dimensions for DPF on request.
Spread at box dimensions ± 3 millimeters due to tolerance.
Drawings with detail and connection dimensions as PDF and DXF
can be found at www.hatz-diesel.com.

Basic engine

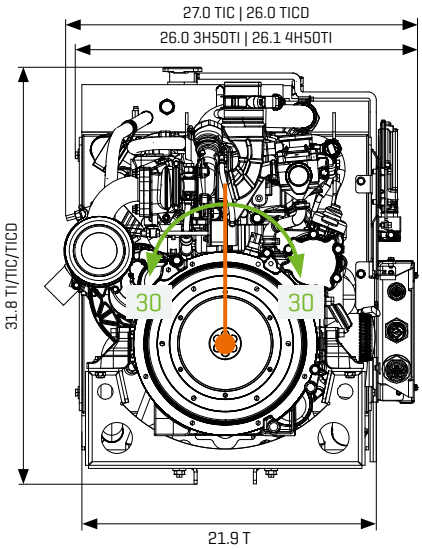


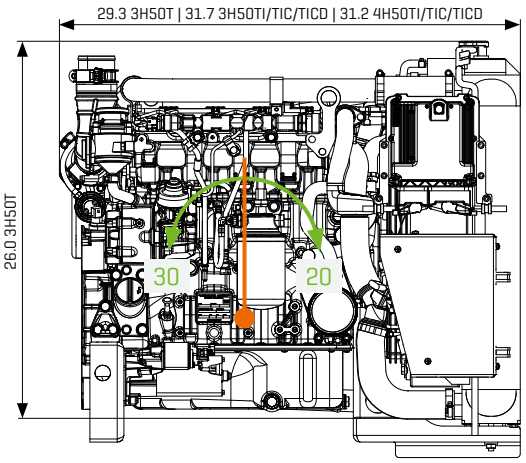


DPF

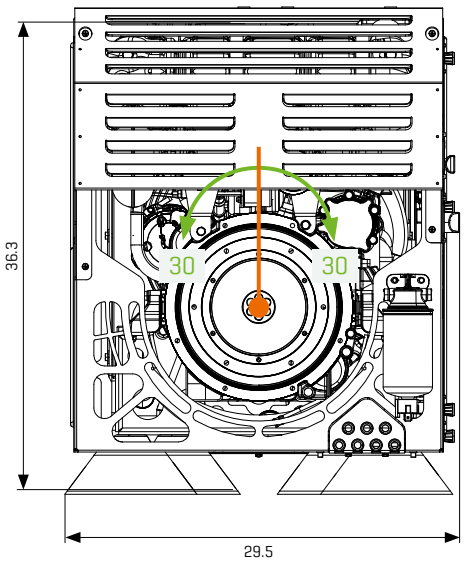


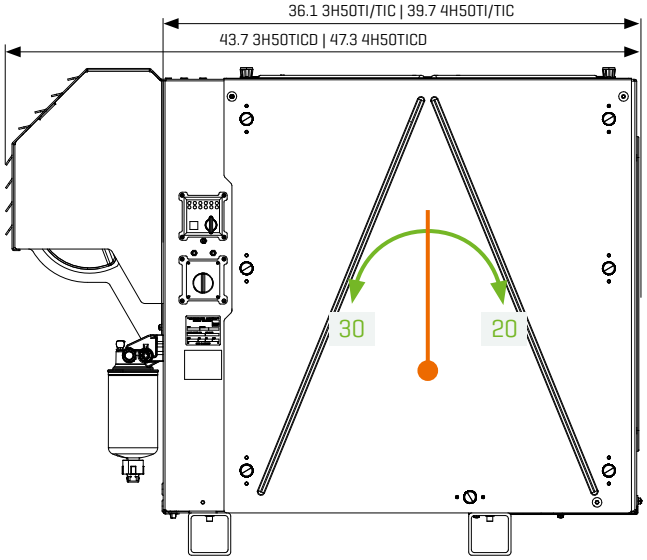
OPU (Open Power Unit)





New Silent Pack





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