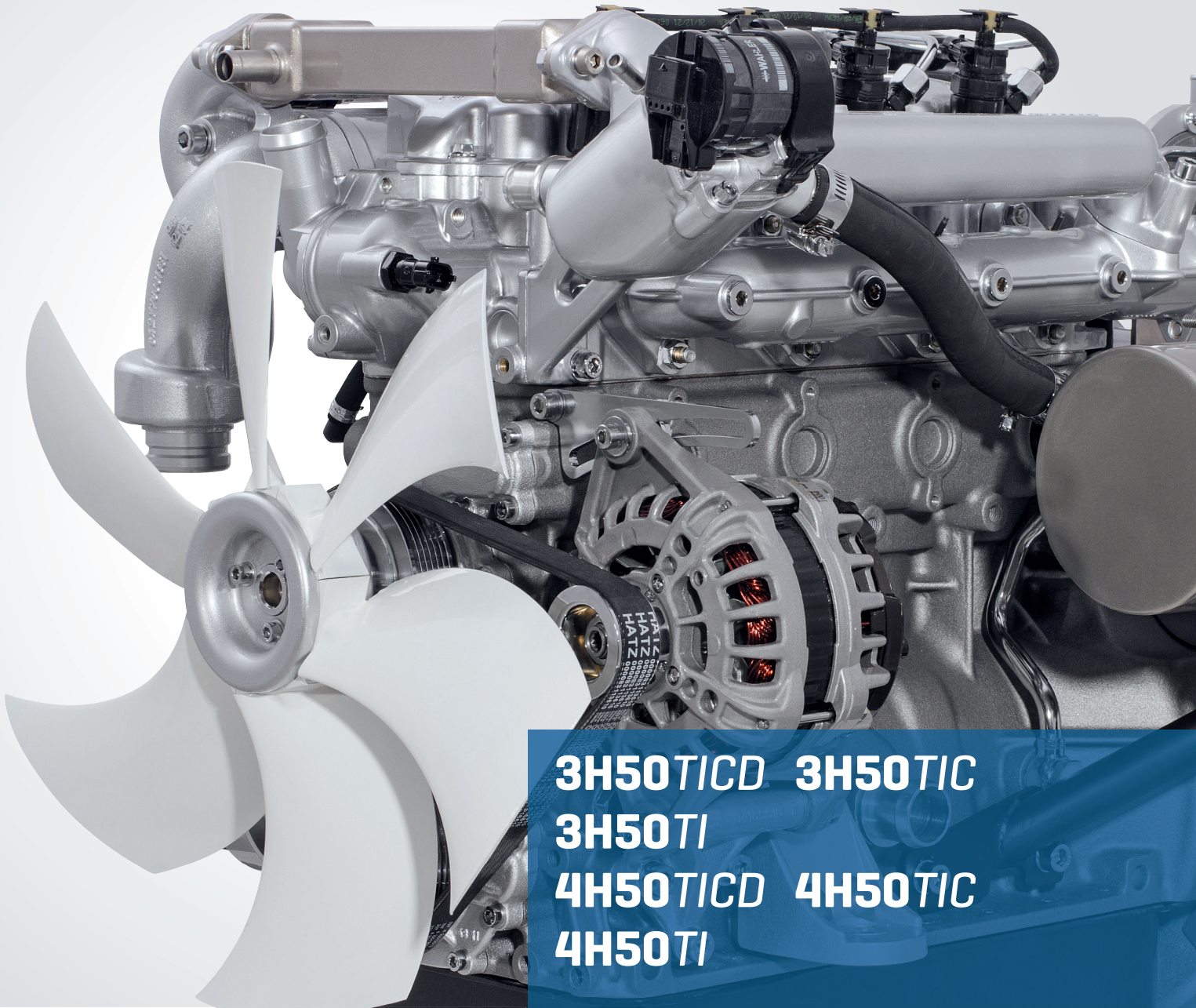
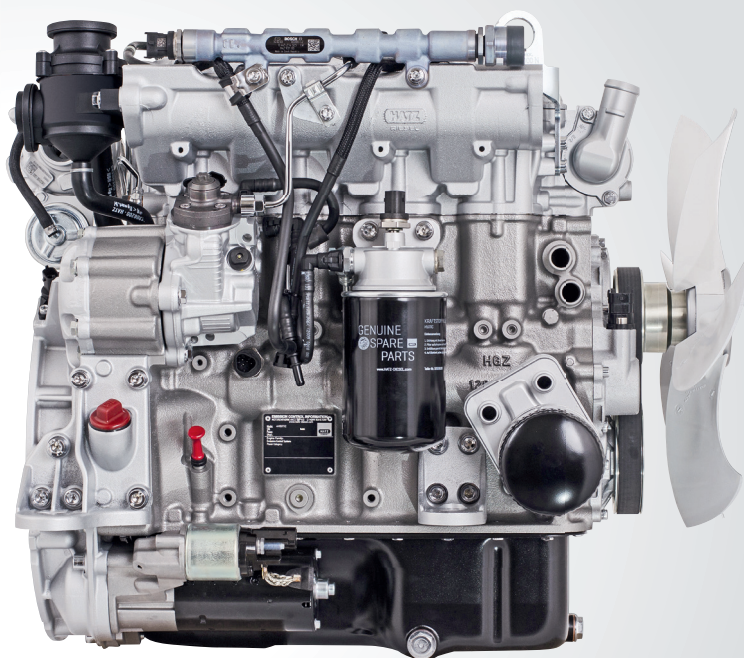
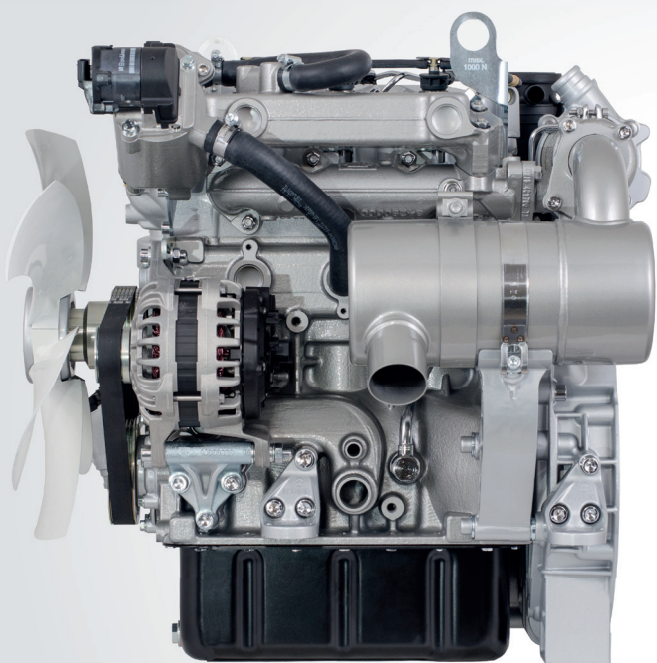


CREATING POWER SOLUTIONS.



3H50TICD 3H50TIC
3H50TI
4H50TICD 4H50TIC
4H50TI

Hatz Diesel



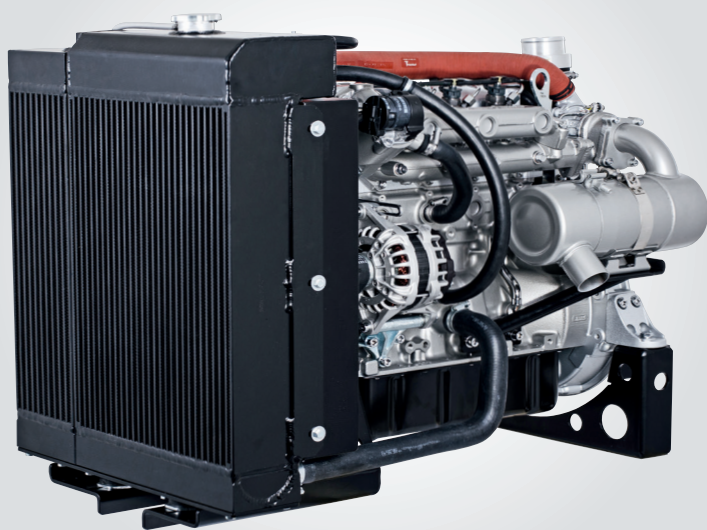
The modern three- and four-cylinder power packages

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:



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). In addition to the standard scope of delivery, air filter, radiators, charged air radiators, hosing and cable loom are pre-installed at the factory.



4H50TIC and 4H50TI Silent Pack – the most quiet Hatz four-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 temperature 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 liter engines that reach a maximum output of 83 horsepower, setting benchmarks in their performance classes. The fulfilment of the stringent 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 flag-ship 4H50TIC is 200 pounds 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 North America, even without the use of a particle filter. Of course, the engine is also available for the new Stage V regulation for Europe using a DPF.

Common-rail system

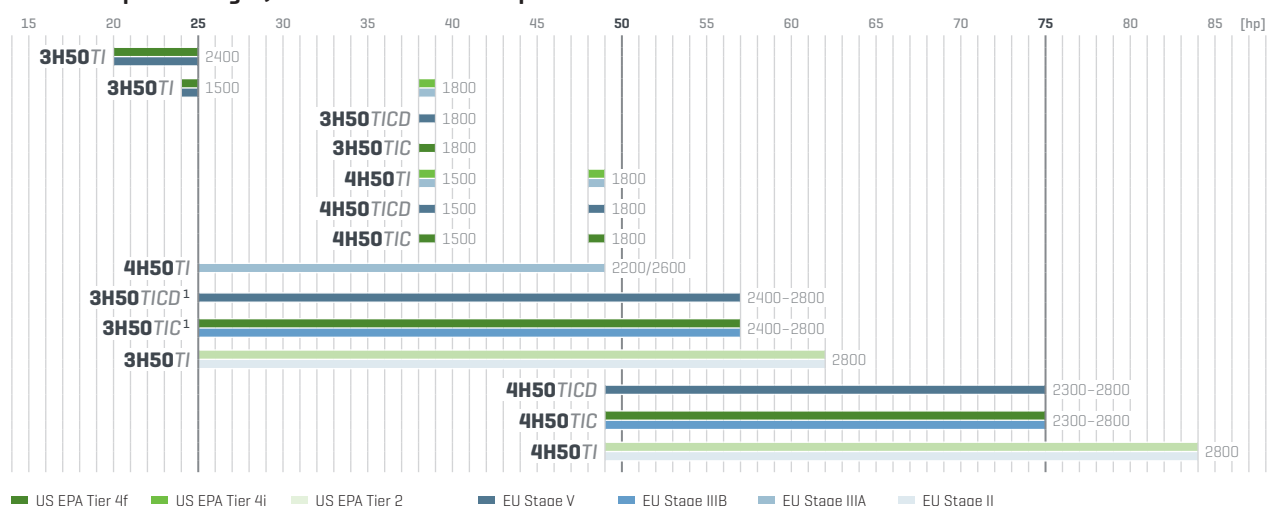
One of the key factors for the high efficiency of the Hatz H-series is the common-rail system. Hatz has decided upon the off highway CRS from Bosch with 26 100 pound-force per square inch [PSI]. It works with up to three precisely dosed injections per working cycle: pre injection, main injection and 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 fuel consumption of not more than 3,7 [three-cylinder] and 4,8 gallons per hour [four-cylinder] at maximum power output, respectively the engines 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 as well as the lower camshaft that reduces installation space.

H-series – power ranges, certificates and rated speeds



¹ Also available with 49.4 hp at 2500 rpm for use in California without registration requirements

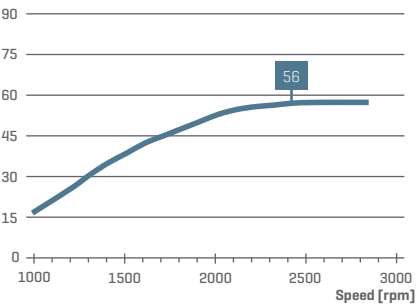
Technical data, performance table

Technical data		3H50TICD ²	3H50TIC ³	3H50TI ³	4H50TICD ²	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 [psi]	26,100						
	Aspiration	Turbocharger with charge air cooling						
	Exhaust emission after-treatment	EGR, DOC, DPF	EGR, DOC	—	EGR, DOC, DPF	EGR, DOC	—	
	Bore x stroke [in]	3.31 x 3.46						
	Displacement [cu in]	89.32			119.10			
	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, analog or multi-stage switch						
Installation information	Amount of combustion air @ 2800 rpm approx. [cfm]	on request			156			
	Amount of cooling air @ 2800 rpm approx. [cfm]	on request			172			
	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]	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]	Fan to flywheel	355	340	293	397	381	335
		as Open Power Unit	536	521	474	578	562	516
		as SilentPack	—			782		
	L x W x H [in]	Fan to flywheel	25.7 x 22.5 x 25.6	25.7 x 24.1 x 25.6 ^a	25.7 x 22.4 x 25.6	29.3 x 22.5 x 25.6	29.3 x 24.1 x 25.6 ^a	29.3 x 22.4 x 25.6
		as Open Power Unit	32.9 x 26.1 x 31.8	32.9 x 27.0 x 31.8 ^a	32.9 x 26.1 x 31.8	36.5 x 26.1 x 31.8	36.5 x 27.0 x 31.8 ^a	36.5 x 26.1 x 31.8
		as SilentPack	—			39.7 x 32.1 x 41.0 ^a		
Engine output max. [hp]		3H50TICD ²	3H50TIC ³	3H50TI ³	4H50TICD ²	4H50TIC	4H50TI	
Blocked ISO brake horsepower (IFN) for intermittent loading according to ISO 3046-1.	3000	56.2		56.2	—		— ⁵ 73.8 ⁶	
	2800	56.2		56.2	73.8		— ⁵ 73.8 ⁶	
	2600	56.2		56.2	73.6		48.9 ⁵ 73.6 ⁶	
3H50TICD 3H50TIC Also available with 49.4 hp at 2500 rpm for use in California without registration requirements	2300	55.2		55.2	72.4		48.7 ⁵ 72.4 ⁶	
	2000	52.0		52.0	67.5		48.7 ⁵ 67.5 ⁶	
	1800	46.8		46.8	60.6		48.7 ⁵ 60.6 ⁶	
	1500	38.0		38.0	49.8		48.7 ⁵ 49.8 ⁶	
Blocked ISO brake horsepower (IFNsi) for strong intermittent loading according to ISO 3046-1.	2800	—		62.4	—		82.5	
	2600	—		62.4	—		82.5	
	2300	—		62.4	—		82.1	
	2000	—		55.6	—		74.1	
	1800	—		50.0	—		66.7	
	1500	—		41.7	—		54.2	
Blocked ISO standard power output (no overload permissible) acc. to ISO 3046-1. For constant load (ICFN).	2800	50.6		50.6	66.4		66.4	
	2600	50.6		50.6	66.4		66.4	
	2300	49.7		49.7	66.2		66.2	
Note: indication about maximum power for constant load only, not available as engine rating	2000	46.8		46.8	60.8		60.8	
	1800	42.1		42.1	54.5		54.5	
	1500	34.2		34.2	44.8		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	50.6		50.6	—		67.0	
	1800	38.6		38.6	48.8		48.8	
	1500	—		24.7	38.5		38.5	

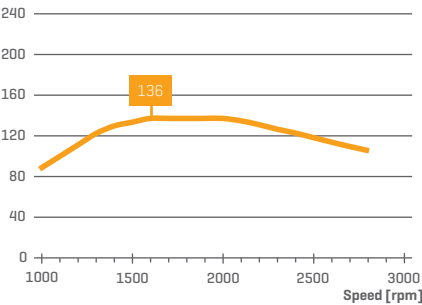
Power output, torque and fuel consumption

3H50TICD² | 3H50TIC³

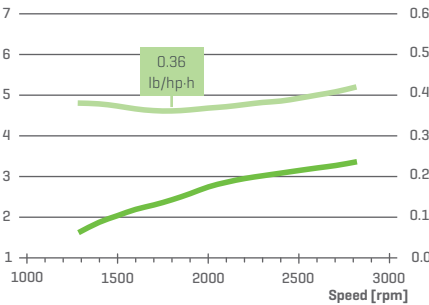
Output [hp]



Torque [ft·lb]

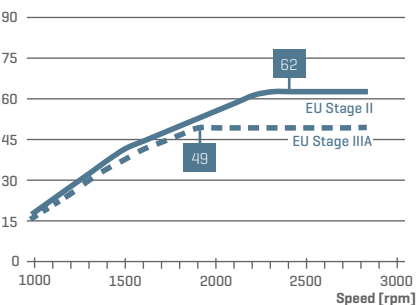


Fuel consumption⁷ – [gal/h] – [lb/hp·h]

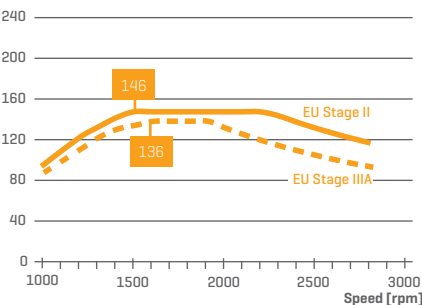


3H50T/³

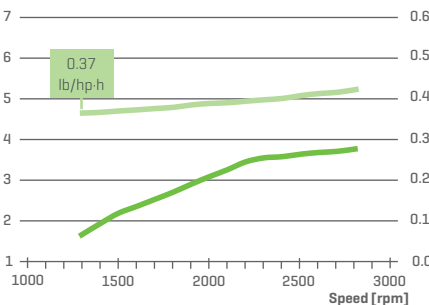
Output⁵ [hp]



Torque⁵ [ft·lb]

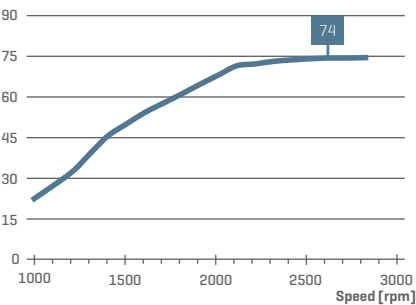


Fuel consumption⁷ – [gal/h] – [lb/hp·h]

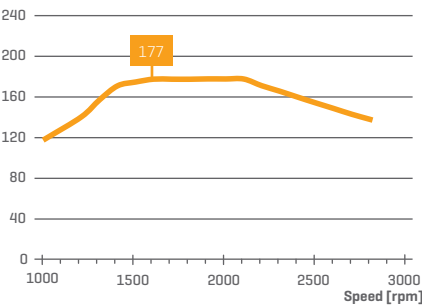


4H50TICD² | 4H50TIC

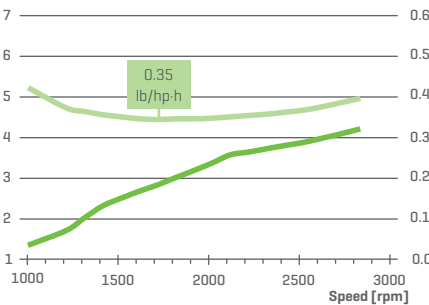
Output [hp]



Torque [ft·lb]

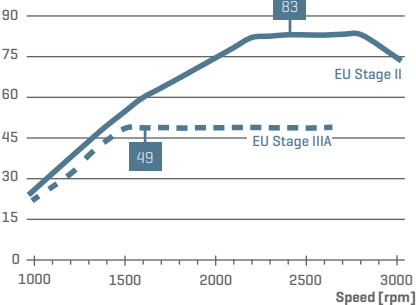


Fuel consumption – [gal/h] – [lb/hp·h]

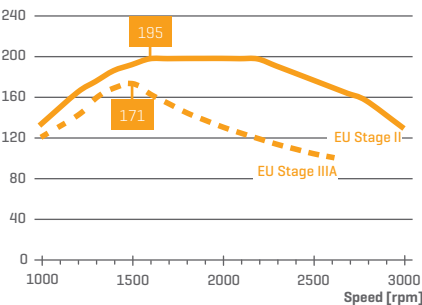


4H50T/

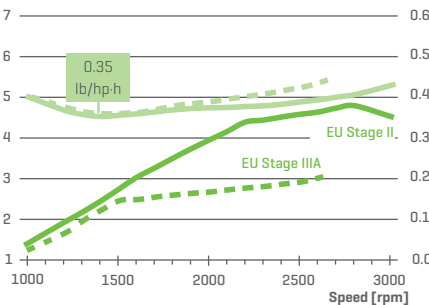
Output [hp]



Torque [ft·lb]



Fuel consumption – [gal/h] – [lb/hp·h]

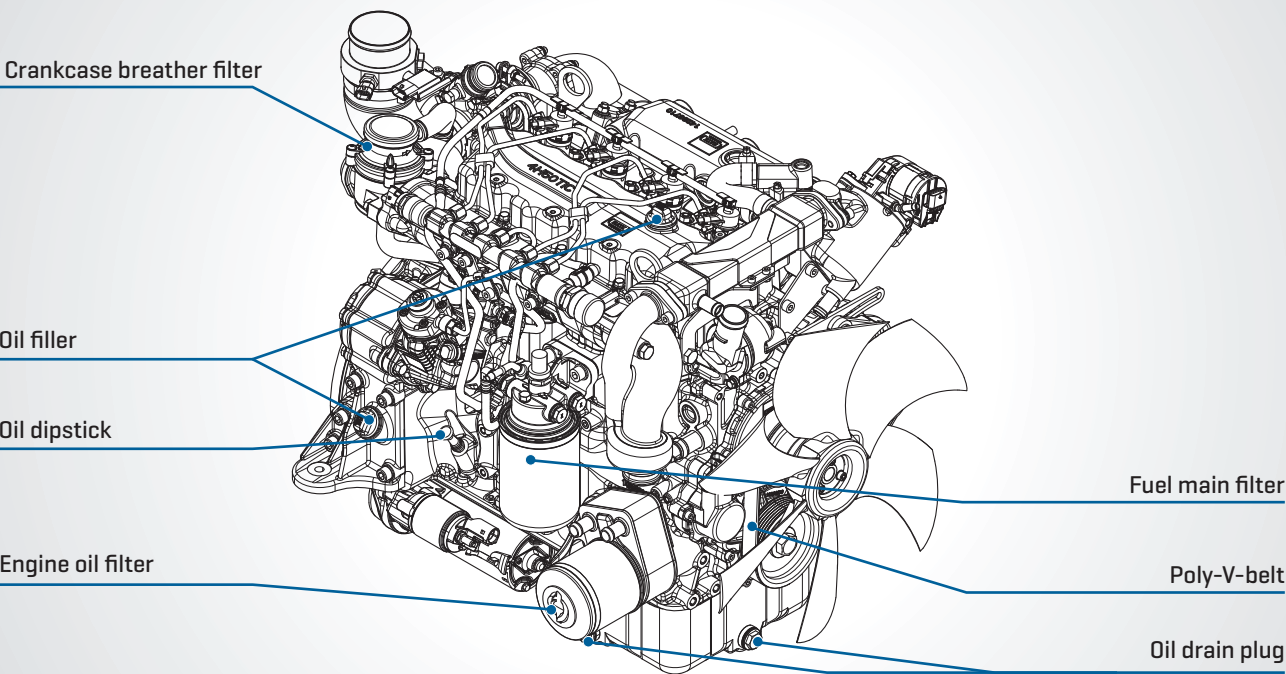


Power ratings

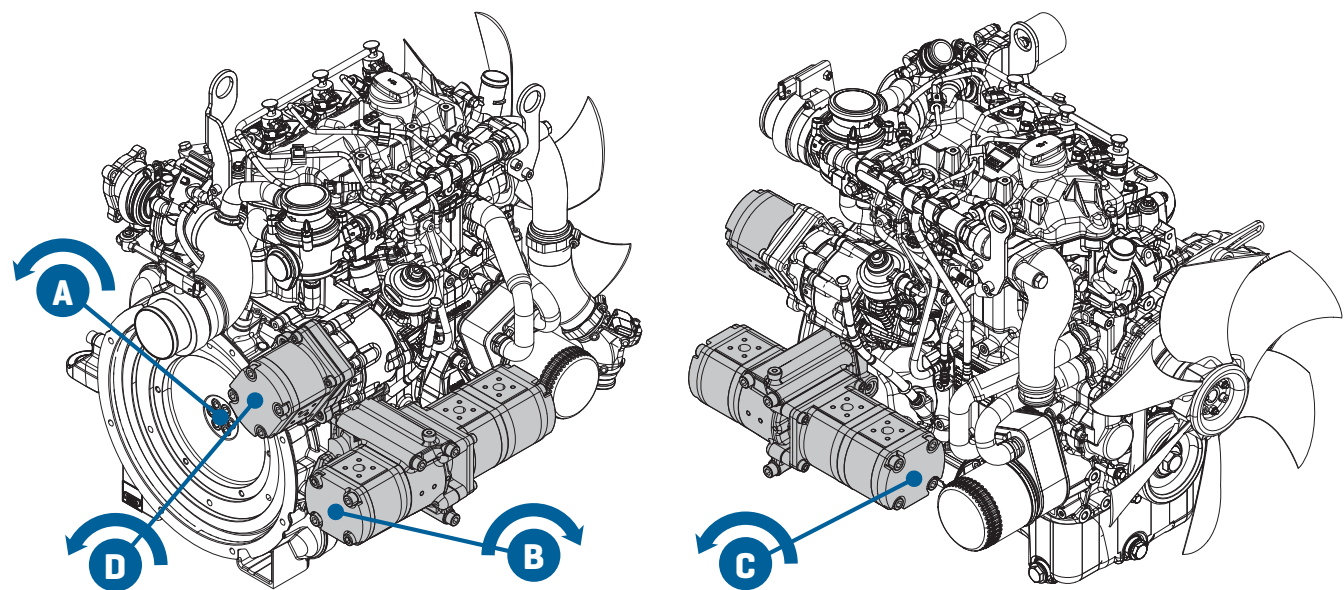
Power reduction chart available on request. Up to 4790 feet no power reduction. Power reduction based on temperature is depending on cooling system, no derating up to 117 °F for Hatz OPU or Silent Pack. The power requirement of fan and alternator are already considered in the charts above.

⁷ Preliminary values

Maintenance and operating points



Power take off



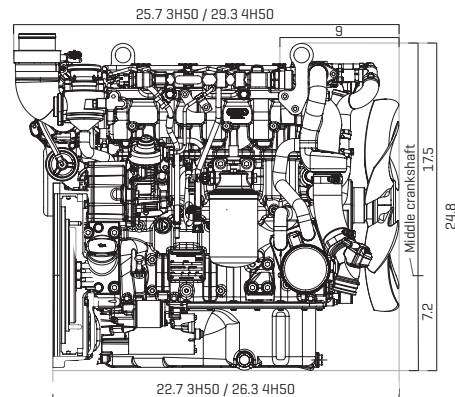
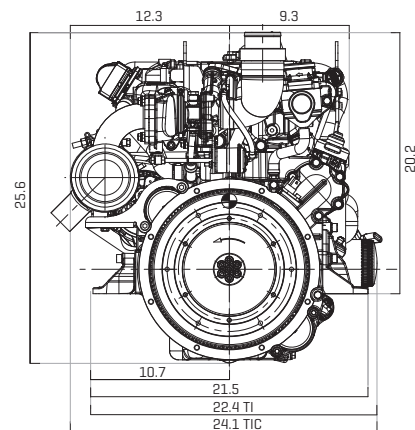
Power take off		3H50TICD ²	3H50TIC ³	3H50TI ³	4H50TICD ²	4H50TIC	4H50TI
Transmittable torque	A	100 %					
	B	$\Sigma = 74 \text{ lb-ft; i} = 1.1$					
	C						
	D	$\Sigma = 59 \text{ lb-ft; i} = 1.0$					—

² available 2019, ³ available 2018

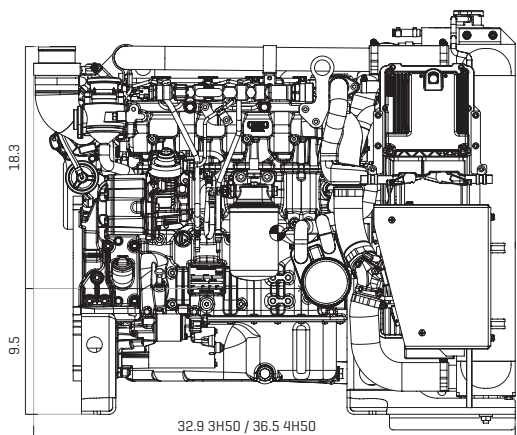
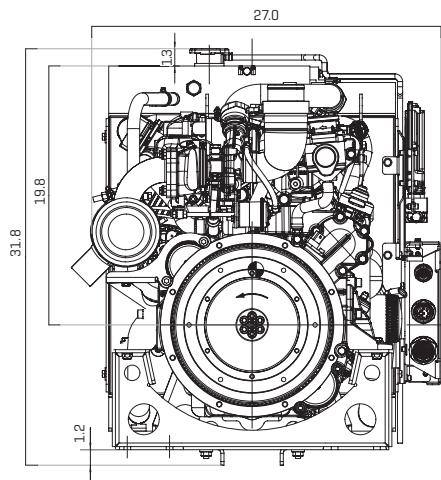
Dimensions [in]

3H50TIC³ | 3H50TI³ | 4H50TIC | 4H50TI

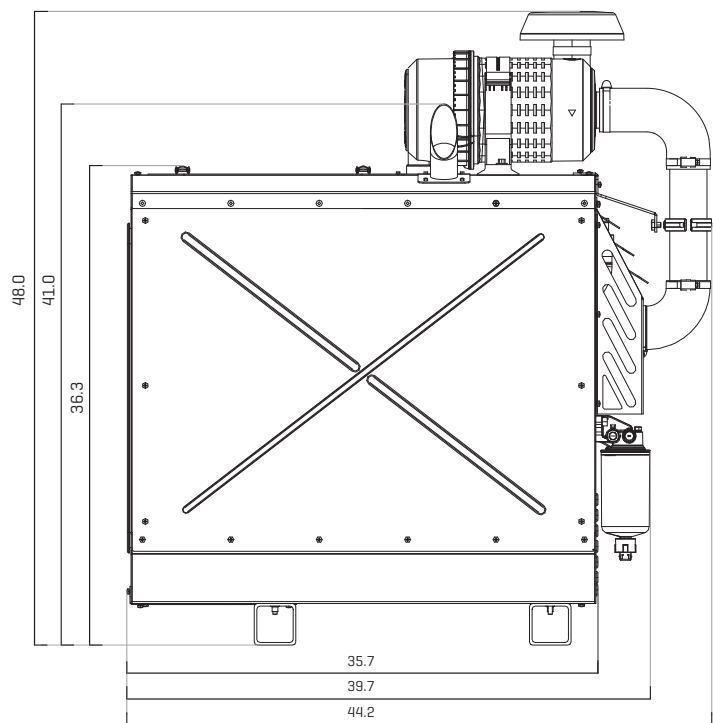
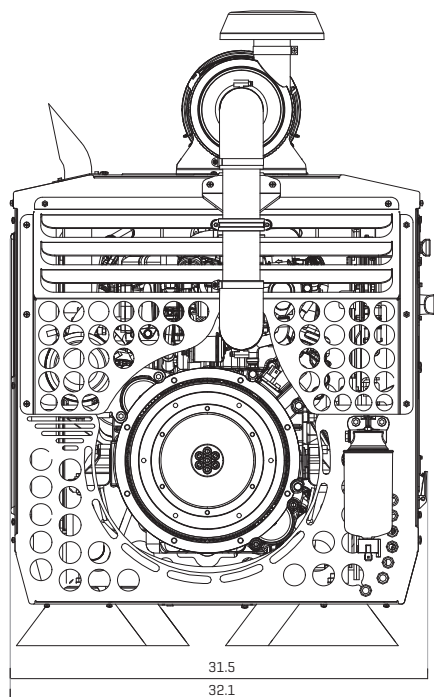
Dimensions for TICD models on request.
Spread at box dimensions ± 0,1 inches due to tolerance.
Drawings with detail and connection dimensions
as PDF and DXF can be found at www.hatz-diesel.com



OPU (Open Power Unit)



4H50TIC Silent Pack | 4H50TI Silent Pack



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