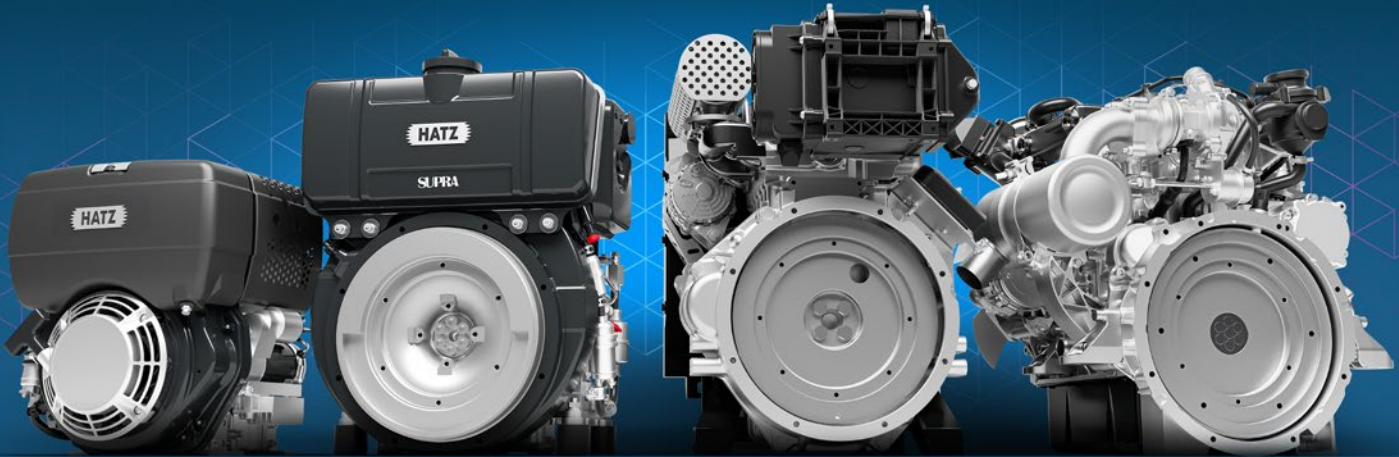


CREATING
POWER
SOLUTIONS



Air- And Liquid-Cooled Industrial Diesel Engines

Hatz Drive Solutions

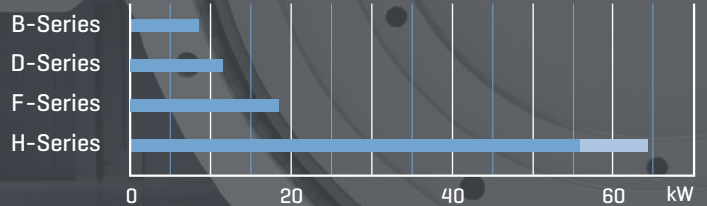


Reliable in all Conditions:
Hatz is more than a Brand,
it is a Quality Promise.

Hatz Drive Solutions

The Diesel Engines

Motorenfabrik Hatz is the specialist for single- to four-cylinder diesel engines in a power range from 1.5 to 64 kilowatts. Engines are categorized into the Hatz B-, D-, F- and H-Series and feature their special qualities for every need.



Hatz Drive Solutions: Full Power for Full Satisfaction

As an engine manufacturer with over 110 years of presence we are well known and in demand throughout the world. The goal of all our activities is the development and production of high-quality and rugged products, in order to achieve the guarantor for long-term corporate success: satisfied customers.

Our design and development always focus on the following aspects:

Economic

Two essential qualities characterize the economy of Hatz diesel engines: Optimum fuel consumption and unparalleled long service life.

Fail-safe and reliable

Our engines have proven ultimate safe operability in even extreme climatic conditions. Hatz engines are famous for their good starting even in low temperatures.

Rugged and indestructible

Hatz engines are designed for service life and ruggedness. Top quality materials and production guarantee this. Operation and maintenance of our engines are problem-free even for non-specialists.

Universal use

The compact design, the many options for power take-off, as well as an extensive program of additional equipment provide an ideal solution for all applications.

Sustainability is our formula for success

All Hatz engines are developed with maximum care, also when it comes to their environmental compatibility. This is not an empty phrase at Hatz, rather it is the corporate philosophy we live by. This is why Hatz is the only manufacturer that offers exhaust-reduced and air-cooled diesel engines over the entire product portfolio. The limits in the US emission standard EPA Tier 4 final and the Regulation [EU] 2016/1628 Stage V are in special focus for off-highway engines. In addition, compliance with other standards is also achieved or exceeded. For example, Hatz offers a diesel particulate filter for single-cylinder engines of Stage V that is not mandated by law.

Engine series	less regulated	US EPA	EU 2016/1628
		Tier 4 final	Stage V
B-Series	■	■	■
D-Series	■	■	■
F-Series	■	■	■
H-Series	■	■	■



1B30, 1B40, 1B50 Silent

Depending on the engine type the already low noise level can be significantly reduced further, by 2 to 4 decibels, by an optional silent noise package, decreased power, and speed. This is possible thanks to optimizations in the area of intake and exhaust components.



1B50E DPF with Diesel Particulate Filter

Although not required by law, Hatz offers the 1B50E engine with an optional passive diesel particulate filter for EU Stage V for defined applications. This makes it possible to work in critical environments such as trenches.



First Full Electronic and Full Variable Speed Control < 19 KW

The models 1B30E, 1B30VE and 1B50E being part of the E1 family can be controlled by with standard J1939 CAN protocols – thanks to the ECU controlling the engine. It is also possible to use CAN-Displays to monitor the engine performance.

Hatz B-Series: Flexible Solution for All Areas

The Hatz B-Series scores highly in mobile and stationary operation with a power requirement of up to 8 kilowatts thanks to its compact installation dimensions and low weight. With its robustness and longevity, the series sets standards in the market. Regardless of whether on vibration plates or in the inhospitable environment of the Antarctic, the Hatz B-Series has been tried and tested a hundred thousand times in harsh surroundings.

Small, lightweight, rugged and IoT ready

The realisation of these development goals, which at first glance seemed manageable, entailed a number of technical refinements that are still unrivalled by our competitors. For instance, the injection pump and valves of the mechanically controlled models are actuated by the patented SCS (Single Cam System), which requires only a single cam and also includes an automatic decompression system. The B-Series models with Hatz E1 technology are electronically controlled. The reliability of the proven core engines meets the benefits provided by state-of-the-art electronics and, for the first time in this performance class, offers completely new potential. In combination with networked solutions, machine manufacturers and operators can simplify their business and increase its efficiency. These and further innovations ensure that the Hatz B-Series is well known and in demand when it comes to ruggedness, a long service life and future viability. Additionally, the cylinder head, crankcase, and governor housing are manufactured from die-cast aluminum and therefore ensure high strength and low weight especially for use in mobile machinery.

Environmental aspects

All B-series engines have been designed for sustainability and environmental compatibility and undergo continuous development. All engines are produced and sold at the highest possible emission level, even if this is not prescribed in the respective target market. The E1 models fulfill all EPA Tier 4 final as well as EU Stage V requirements, even with variable speed across a wide speed range.

Power range

The Hatz B-Series is available in a power range from 1.5 to 8 kilowatts at a maximum speed of 3600 revolutions per minute.

Unique Selling Points

- Balance for Hatz 1B40 and 1B50 available as an option
- Engine diagnostics, CAN J1939 speed control and integrated engine protection for E1 variants
- Smoke suppression under overload
- Optional diesel particulate filter for 1B50E

Engine variations	1B20	1B30E	1B30	1B30VE	1B40	1B50E	1B50
Cylinders	1						
Displacement [l / cu in]	0.243 / 0.015	0.347 / 0.021	0.347 / 0.021	0.347 / 0.021	0.462 / 0.028	0.517 / 0.032	
IFN rating ISO 3046-1 max. [kW / hp]	3.4 / 4.6	4.5 / 6.0	5.0 / 6.8	4.5 / 6.0	7.3 / 9.9	7.9 / 10.7	
Weight [kg / lb]	28.0 / 61.7	40.8 / 90.0	35.0 / 77.2	42.8 / 94.4	48.0 / 105.8	57.5 / 126.8	51.2 / 112.9
Power class [kW] of certification	EU Stage V	0-8	0-8	0-8	0-8	0-8	0-8
	EPA Tier 4 final	—	0-8	—	0-8	—	0-8



1D90E DPF with Diesel Particulate Filter

Although not required by law, Hatz offers the 1D90E engine with an optional passive diesel particulate filter for EU Stage V for defined applications. This makes us the only engine manufacturer to meet the stringent requirements of the German BG Bau and significantly reduce exposure to diesel soot.



1D81C - Silent Pack

For decades Hatz Silent Packs have been setting benchmarks for quiet and reliable diesel engines. Silent Pack is more than just an engine, it is a complete installation solution where the customer no longer has to take care of anything. Position, connect, start.



First Full Electronic and Full Variable Speed Control < 19 KW

The 1D90E, part of the E1 family, can be controlled using the standardized CAN protocol J1939, thanks to its ECU. Additionally, it is possible to monitor the engine parameters using CAN displays or machine controllers.

Hatz D-Series: Revolutionary Single Cylinder Technology

The Hatz D-Series is best suited for challenging tasks. With 11.2 kilowatts, the Hatz 1D90 engine is the world's most powerful single-cylinder diesel engine. Compensation and balance weight ensure that the Hatz D-Series runs especially smoothly. Counter-rotating balancer shafts are available as an option and even ensure a 100 percent first-order counterbalance.

Unbeatably flexible and future-proof

The D-Series engines can be configured as required and in the basic version limited only to the core engine. By adding the numerous available options, the engines can however also be upgraded to truly high-tech products. With up to three different power take offs on a single engine, the model range provides more options for machine customisation than any other engine in the market.

Equipped with Hatz E1 technology, the 1D90E is electronically controlled. State-of-the-art technology meets a core engine that has proven its worth hundreds of thousands by now. For the first time in this performance class, machine manufacturers and operators benefit from networked solutions. These enable simpler business processes and thus an increase in efficiency.

Environmental aspects

Even without legal provisions the Hatz D-Series engines have been produced and sold in accordance with the strict US emissions standard EPA Tier 4 for many years. The Hatz 1D90E thus meets both North American requirements and EU Stage V. All engines in the D-Series comply with European specifications.

The Silent Pack

The Hatz D-Series is the first single-cylinder diesel engine series that can be equipped with an organically adapted, sound-insulated noise encapsulating housing, the Silent Pack. The Silent Pack reduces the radiated noise emission by up to 12 decibels in a 7 meter radius. The capsule consists of a sheet metal construction mounted on the engine with structure-borne noise insulation. All control and service points are accessible from the outside. The sound suppressor is housed in a separate capsule over the flywheel. Due to the cooling air circulation, Silent Pack engines – like all other Hatz engines – can be used under virtually all climatic conditions.

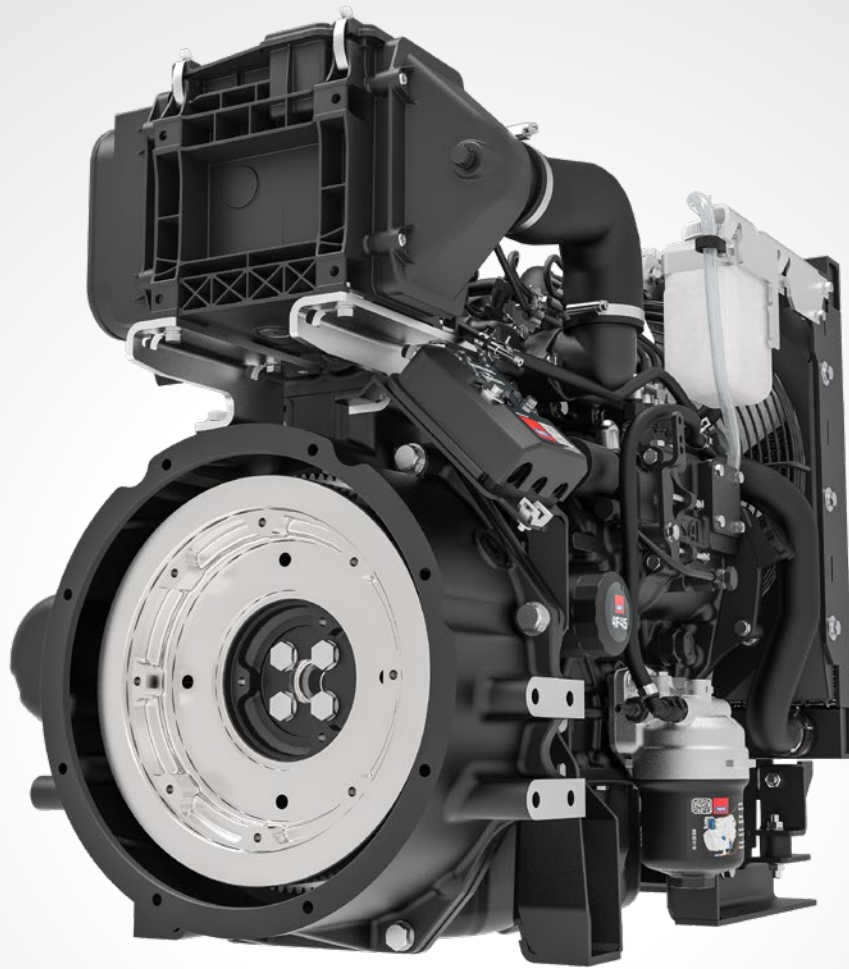
Power range

The Hatz D-Series is available in a power range from 3.3 to 11.2 kilowatts at a maximum speed of up to 3600 revolutions per minute.

Unique Selling Points

- Crankhandle start and/or electric start with 12 or 24 volts
- 1D90 optionally available as vertical model
- Noise reduced by 95 percent with optional Silent Pack
- Engine diagnostics, CAN J1939 speed control and integrated engine protection for E1 variants
- Optional diesel particulate filter for 1D90E

Engine variations	1D42	1D50	1D81	1D81C	1D90E	1D90	1D90V
Cylinders	1						
Displacement [l / cu in]	0.445 / 27.2	0.517 / 31.5	0.667 / 40.7	0.667 / 40.7		0.722 / 44.0	
IFN rating ISO 3046-1 max. [kW / hp]	7.0 / 9.5	7.5 / 10.2	10.1 / 13.7	9.6 / 12.9	10.5 / 14.1	11.2 / 15.0	
Weight [kg / lb]	71.0 / 156.5	80.0 / 176.4	97.0 / 213.8	118.0 / 260.0	107 / 235.9	98.0 / 216.0	106 / 233.6
Power class [kW] of certification	EU Stage V	0-8	0-19	0-19	0-19	0-19	0-19
	EPA Tier 4 final	—	—	—	0-19	—	—
Features	horizontal crank shaft		Silent Pack		horizontal crank shaft		vertical crank shaft



Open Power Unit – The Plug & Play Solution

All variants of the Hatz F-Series are available as a ready-to-install Open Power Unit (OPU). In addition to the standard delivery scope, the air filter, silencer, radiator, and wiring harness are already installed upon delivery.



The variable speed engines are also available in a fan-to-flywheel configuration, primarily used for applications requiring additional hydraulic oil cooling.



With a maintenance interval of 250 hours, the ability to operate in ambient temperatures of up to 50 °C, and an extended warranty of up to five years on the entire system, these features are exclusively offered by Hatz.

Hatz F-Series: Powerful Industrial Engines for Compact Applications

With the introduction of the F-Series, Hatz is increasing its range of water-cooled industrial engines, adding reliable and compact diesel engines with outputs up to 19 kilowatts. Thanks to the Open Power Unit's extremely robust design, these power packs are suitable for all stationary applications, compact machines, and vehicles.

The F-Series features robust and reliable 3- and 4-cylinder diesel engines, that achieve excellent performance even in the most demanding applications within their class.

Versatile in Use

With engine displacements of 0.95 liters, 1.1 liters, 1.3 liters, and 1.75 liters, the F-Series engines provide the ideal solution for a wide variety of drive systems. A total of eleven different engine models are available in the F-Series, offering the right solution for every application and market, with power outputs from 7.5 to 18.4 kilowatts and torque ranging from 48 to 76 newton meters. Naturally, our engines meet the stringent requirements of EU Stage V and EPA Tier 4 final standards – all without the need for exhaust gas aftertreatment.

Hatz Open Power Unit – A Complete Solution from the Manufacturer

As successfully established in the market with the H-Series, Hatz also offers the F-Series as a robust off-highway OPU, where all components are assembled by Hatz specialists, eliminating the need for any assembly work by the machine manufacturer. All components – from the cooling system, fuel system, and electrics to the combustion air system – are designed to withstand the

toughest environmental conditions, including high temperatures, high dust levels, or high-pressure cleaning. With the OPU developed and produced in Germany, you can be confident in its performance across all applications.

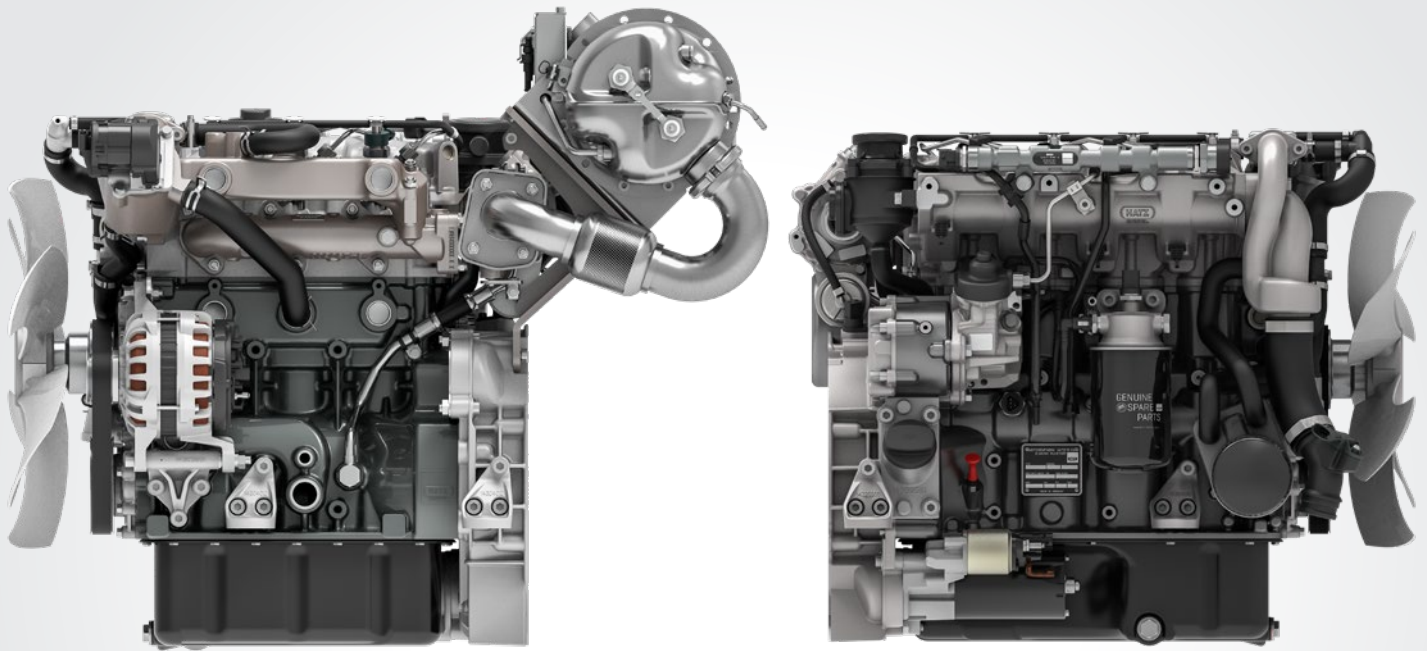
World-Class Service for the Complete Engine System

With the OPU from Hatz, our customers enjoy a unique advantage: we not only offer an optional warranty of up to five years for the entire system but also provide worldwide access to spare parts and services. With over 500 Hatz service centers, we can repair the complete system quickly and efficiently. For our customers, this means maximum convenience – one central contact person ensures clarity and accountability at all interfaces.

State-of-the-Art Technology

The F-Series engines represent state-of-the-art technology, characterized by their compact design, low weight, and low fuel consumption. They also feature low noise levels and minimal vibrations, making operation particularly pleasant. Reliable cold starts and easy inspection and maintenance with long service intervals complete the overall package. For the European market, the engines are equipped with a mechanical governor, while an optional variant with an electronic governor is also available. The EPA models come standard with an electronic governor.

Engine variations		3F30	3F35E	3F45	3F45E	4F45	4F45E
Cylinders		3			4		
Displacement [l / cu in]		0.952 / 58.1	1.102 / 67.2	1.318 / 80.4		1.758 / 10.7	
IFN rating ISO 3046-1 max. [kW / hp]		15.8 / 21.2	18.4 / 24.6	18.4 / 24.6	18.4 / 24.6	16.0 / 21.4	18.4 / 24.6
Weight [kg / lb]		95 / 209.4	110 / 242.5	135 / 297.6	138 / 304.2	160 / 352.7	163 / 359.3
Power class [kW] of certification	EU Stage V	0-19	0-19	0-19	0-19	0-19	—
	EPA Tier 4 final	—	0-19	—	0-19	—	0-19
Features	Speed control	mechanical	electronic	mechanical	electronic	mechanical	electronic
	Speed	variable and constant				constant only	
	general	Liquid cooling, no exhaust gas aftertreatment, available as Open Power Unit					



The Modern Three- and Four-Cylinder Power Packages

Compact, light, economical, robust and environmentally friendly: Hatz common-rail diesel engines offer everything that is expected of powerful and modern industrial engines. They are characterized by their quiet running, dynamics and maintenance friendliness. Their constantly low fuel consumption over a wide load and speed range is unrivalled. 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's [Open Power Units] and were completely tested by the manufacturer. In addition to the engine itself, the air filter, radiators, charged air radiators [if fitted], hosing and cable loom including fuses, relays, etc. 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 (depending on version), that reach a maximum output of 64 kilowatts, setting benchmarks in their performance classes.

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

A maintenance interval of 500 hours means the engine scores top points with regard to customer friendliness and reliability. The extended intervals are attributed to hydraulic valve play compensation and large sized filters. The engine also has a sensor-controlled engine protection system which is able to switch off the engine in an emergency to prevent major damage.

Common rail system for maximum fuel efficiency

One of the key factors for the high performance compactness of the Hatz H-Series is the common-rail system. Hatz has decided upon the off highway CRS from Bosch with 1,800 bar. In conjunction with the other, ideally combined system components, the perfect balance is reached between dynamics, quiet combustion noise, low emissions and economy. The result: with a specific consumption of just 210 grams per kilowatt hour at the most effective level over a wide load and speed range, the H-Series sets new standards.

Raising digital potentials

The engines can be linked to the Hatz Digital Solutions. These allow key information on machine operation to be integrated into fleet management, thereby enabling machine operators to make better decisions. Also possible: optimization of the machine disposition and maintenance, localization and geofencing, and maximization of machine productivity. Hatz Digital Solutions, featuring remote diagnostics capabilities, will be available starting in 2025.

Engine variations	3H50T	3H50TICD	3H50TIC	3H50TI	4H50N	4H50TICD	4H50TIC	4H50TI	
Cylinders	3			4					
Displacement [l / cu in]	1.464 / 89.32			1.952 / 119.10					
IFN rating ISO 3046-1 max. [kW / hp]	18.4 / 24.7	30.5 / 40.9	44.0 / 59.0	48.0 / 64.4	18.4 / 24.7	55.0 / 73.8	64.0 / 85.8		
Weight [kg / lb]	132 / 291	140 / 309	154 / 340 ¹	133 / 293	159 / 350	158 / 348	173 / 381 ¹	152 / 335	
Power class [kW] of certification	EU Stage V	8-19	–	19-56	–	–	8-19	19-56	–
	EPA Tier 4 final	8-19	–	19-56	19-56	–	8-19	19-56	19-56
	EU Stage IIIB	–	–	–	37-56	–	–	–	37-56
	EU Stage IIIA	–	19-37	–	19-37	19-37	–	–	19-37
	EU Stage II	–	–	–	–	37-75	–	–	–
Features	TC	TC, IC, cEGR, DOC/DPF	TC, IC, cEGR, DOC	TC, IC	–	TC, IC, cEGR, DOC/DPF	TC, IC, cEGR, DOC	TC, IC	

TC Turbocharger IC Intercooler cEGR cooled exhaust gas recirculation DOC diesel oxidation catalyst DPF diesel particulate filter

¹Including engine mounted aftertreatment

Motorenfabrik Hatz GmbH & Co. KG
Ernst-Hatz-Str. 16
94099 Ruhstorf a. d. Rott
Germany
Phone +49 8531 319-0
marketing@hatz.com
hatz.com



**CREATING
POWER
SOLUTIONS**

40532100 EN 03.25 Printed in Germany
We reserve the right to make all changes that
serve technical development.