

**CREATING POWER SOLUTIONS.** 



Hatz diesel engines – Made in Germany



Over 110 years of experience in engine production make Hatz a valuable partner.

### Hatz diesel engines

# The diesel engine is the core competence

In its history lasting over 135 years Hatz has developed into being a specialist for diesel engines rated up to 62 kilowatts. The basis of all corporate activities is the development and production of high-quality and rugged diesel engines. The performance and reliability of our products are valued by our customers around the globe.

Hatz operates worldwide as an independent specialist for single- to four-cylinder **diesel engines**. Our diesel engines are used in all application fields, for instance in construction machinery, compressors, commercial vehicles, agricultural machinery, systems, material handling equipment, as well as in ships. Hatz develops and manufactures diesel engines in a power spectrum from 1.5 to 62 kilowatts. Hatz gives jobs to more than 900 employees, over 5 percent of them in research and development. Production is carried out in the company's headquarters in Ruhstorf, Germany.

The Hatz **systems** business division develops and produces special systems based on industrial engines. The focuses are on all aspects of solutions for power and energy supply, scalable electricity stations, pump systems as well as special applications in the maritime and military sectors.

The **components** business division manufactures high-precision metal components designed especially for the automotive and commercial vehicles industry, agriculture, mechanical engineering, and industry, during which Hatz has acquired the special expertise needed for the serial precision machining from titanium.

The global **service** network includes over 500 service centers, of which 12 are wholly owned subsidiaries and 114 are Hatz agencies in 120 countries. This means we can ensure fast supply of spare parts and replacement systems, and also quickly carry out repairs.

#### CREATING POWER SOLUTIONS.

#### Engines

Air-cooled engines Liquid-cooled engines Additional equipment Systems Power systems Pumps Marine applications Special applications

#### Components

Automotive Agriculture Industry Commercial vehicles

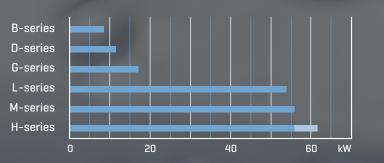
#### Service

Repair Reconditioning Spare parts Training Reliable in all conditions: Hatz is more than a brand, it is a quality promise.

### Hatz diesel engines

#### The engines

Motorenfabrik Hatz is the specialist for singleto four-cylinder diesel engines in a power range from 1.5 to 62 kilowatts. Engines are categorised into the Hatz B-, D-, G-, L-, M- and H-series and feature their special qualities for every need.



### Hatz diesel engines: 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 characterise 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 exhaustreduced 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.

Engine	less	US EPA		EU 2016/1628	EU 97/68/EG			Switzerland
series	regulated	Tier 4 final	ТРЕМ	Stage V	Stage IIIB	Stage IIIA	Stage II	OAPC
B-series			-					_
D-series			_		no re	_		
G-series			_					_
H-series								
	TI	TIC, TICD	_	T, TICD	TIC	TI (< 37 kW), TIC (< 37 kW)	TI	TICD
L-/M-series			10 A 10					
	L/M41	2L/M (< 19 kW)	2L/M (> 19 kW), 3L/M, 4L/M41 (< 37 kW), 4L/M42 (> 37 kW)	2L/M (< 19 kW)	4L/N	2L/M, 3L/M, L/M41 (< 37 kW M41 (> 37 kW fl I42 (> 37 kW co	ex.],	-

TPEM Transition Program for Equipment Manufacturers flex. flexibility scheme const. constant speed



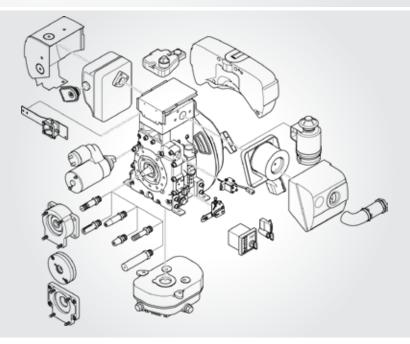
#### Unmistakable design

The Hatz B-series is characterised by a uniquely matched overall design. The entire series is structured uniformly and therefore ensure an unparalleled recognition value. The engine on any machine can be recognised from far away, and with its round shape it provides an optical highlight.



#### 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 optimisations in the area of intake and exhaust components.



#### Flexibility through additional equipment

The Hatz B-series can be fully customised to the needs of the customer with an almost endless list of accessory parts. Among other things, there are different output shafts for each type, an electric start with 12 or 24 volts as well as various options for fuel tanks and filters, to name but the most important ones.

# Hatz B-series: Flexible solution for all areas

The Hatz B-series scores high marks in mobile and stationary operations with compact installation dimensions and for all applications with a power requirement up to 8 kilowatts due to its 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 clean

These goals are used as the basis of our development and they are manageable at first glance, however their realisation brought along a number of technical refinements which are still unrivaled today by competitors. For instance, operation of the injection pump and valves by the patented SCS (Single Cam System), which requires merely one cam and also includes automatic decompression. These and further innovations ensure that the Hatz B-series is well known and in demand when it comes to ruggedness and a long service life. Additionally, the Hatz B-series 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 with regard to sustainability and environmental compatibility and undergo continuous further development. All engines in this series have been exclusively produced and marketed in accordance with the guidelines of the strict US emission standard EPA Tier 4, and in this design they were also exported to countries where exhaust emission limits are not stipulated. That is why the engines will fulfill the requirements of EU Stage V as well.

#### 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.

#### **Additional features**

- · Air cooling with flywheel blower fan
- · Recoil and/or electric start with 12 or 24 volts
- Counter balance for Hatz 1B40 and 1B50 available as an option

Engine variations		1B20	1B30	1B40	1850			
Cylinders		1						
Displacement [l / cu in]		0.243 / 0.015	0.347 / 0.021	0.462 / 0.028	0.517 / 0.032			
IFN rating ISO 3046-1 n [kW / hp @ 3600 rpm]	nax.	3.4 / 4.6	5.0 / 6.8	7.3 / 9.9	7.9 / 10.7			
Weight [kg / lb]		28.0 / 61.7	35.0 / 77.2	48.0 / 105.8	51.2 / 112.9			
Power class [kW]	EU Stage V	0-8						
of certification	EPA Tier 4 final	0-8						



#### 1D42, 1D50, 1D81, 1D90

Four engines, two sizes, one design, zero problems. The modular design principle of the Hatz D-series opens up an unending range of capabilities. The ideal engine can always be selected according to the power requirement and installation space.





#### 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.

#### 1D90V/W

For installations with special requirements regarding outer dimensions, Hatz has also alternatively developed the 1D90 engine with vertical crankshaft. This allows the best possible use of the available installation space, thus avoiding unnecessary power deflections.

# Hatz D-series: Revolutionary single cylinder technology

The Hatz D-series is best suited for challenging tasks. It is characterised in particular by its high performance and unique design. With 11.2 kilowatts, the Hatz 1D90 engine is the most powerful single-cylinder diesel engine in the world. A compensation weight on the flywheel side crank arm as well as balance weights cast in the flywheel ensure the special quiet running of the Hatz D-series. Optionally available counter-rotating balance shafts even ensure 100 percent first order counter balance.

#### Unbeatably flexible

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 four different power take offs on a single engine, the D-series provides more options for machine customisation than any other engine in the market.

#### **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. That is why these engines will fulfill the requirements of EU Stage V as well without any modifications. The D-series is optimised with regard to noise emissions and also offered with the unique Silent Pack on demand.

#### **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 3.5 to 11.2 kilowatts at a maximum speed of 3600 revolutions per minute (1D90, 1D90V and 1D81C: 3000 revolutions per minute).

#### **Additional features**

- · Air cooling with flywheel blower fan
- 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

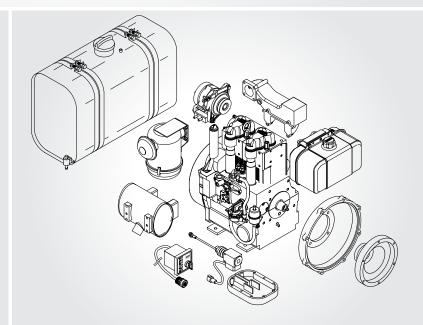
Engine variations		1D42	1D50	1D81	1D81C	1D90	1D90V
Cylinders					1		
Displacement [l / cu in]		0.445 / 27.2	0.517 / 31.5	0.667 / 40.7	0.667 / 40.7 0.722 / 44.0		2 / 44.0
IFN rating ISO 3046-1 max. [kW / hp @ 3600 rpm]		7.0 / 9.5	7.5 / 10.2	10.1 / 13.7	-/-		
Weight [kg / lb	]	71.0 / 156.5	80.0 / 176.4	97.0 / 213.8	118.0 / 260.0	98.0 / 216.0	106.0 / 233.6
Power class			-8	0-19			
[kW] of certification	EPA Tier 4 final	0-8		0-19			
Features		hori	zontal crank s	shatt Silent Pack			vertical crank shaft



#### 2G40

The 2G40 is an all purpose industrial diesel engine. It convinces through its low weight due to the lightweight alloy construction, its low fuel consumption, and its high operating reliability as, for instance, it does not have a V-belt.





#### 2G40 · 2G40H

On the 2G40, power take off possibilities are available on the crankshaft (conical drive shaft) and directly on the flywheel. The 2G40H version also provides a power take off with gear wheels for operating hydraulic pumps. The matching hydraulic pumps can, of course, also be obtained from Hatz.

#### Flexibility through additional equipment

Oil bath or dry air filter, additional oil sump, instrument box, fuel tanks, 12 or 24 volts electrics and a number of connection ho usings. The list of standard available options is virtually endless.

# Hatz G-series: The two-cylinder power package

As our customers can confirm, Hatz diesel engines are the most robust and durable in this market segment. Where they are installed makes no difference. Whether at very low temperatures or in a tropical climate, the Hatz 2G40 carries out its job reliably. With regular maintenance many thousands of hours are commonplace, using Hatz Genuine Spare Parts, of course.

#### Lightweight and compact

Like all other Hatz diesel engines, the extremely compactly built two-cylinder engine is distinguished by its high reliability and, not least, flexible in application thanks to its dimensions. The light metal construction of the housing and die-cast aluminum cylinder heads keep the weight low, between 88 and 105 kilograms depending on the version.

#### **Environmental aspects**

The Hatz 2G40 has been exclusively produced and marketed for many years to the specification of the strict US exhaust standard of the EPA, even in countries where no limits are imposed on exhaust emission. That is why the engines will fulfill the requirements of EU Stage V as well. Measures for reducing inner engine friction losses result in higher efficiency, and thus also in an extremely low specific fuel consumption.

#### Low operating costs

The air-cooled Hatz 2G40 is the absolute front runner in terms of low total operating costs. This is due not only to the low fuel and engine oil consumption, but also to the remarkably low maintenance costs. For example, the engine does without any belts at all. In the basic version with oil bath filter, just the fuel filter and engine oil filter as well as the engine oil are all that need to be changed regularly.

#### **Power range**

The 2G40 delivers a maximum 15.6 kilowatts at a speed of 3600 revolutions per minute (IFN according to DIN ISO 3046/I).

#### **Additional features**

- Air cooling and alternator integrated in flywheel blower fan
- · Pressurised lubrication with gear pump
- · Electric start with 12 or 24 volts
- · Self bleeding injection pump

Engine variation	S	2G40 2G40H						
Cylinders		2						
Displacement [I	/ cu in]	0.997 / 60.84						
IFN rating ISO 30 [kW / hp @ 3600		15.6 / 21.2						
		rope start	electric start 12 V, flywheel alternator 23 A	electric start 24 V, flywheel alternator 12 A	electric start 12 V, external alternator 55 A	24 V, external		
Weight [kg / lb]		88.8 / 195.8	96.8 / 213.4	99.1 / 218.6	103.4 / 228.0	105.2 / 232.0		
Power class	EU Stage V		0-19					
[kW] of certification	EPA Tier 4 final			0-19				
Features		Power take of	ff possible on bot	h sides Addi	tional auxiliary p for hydraulic p			



#### L41-42 noise-encapsulated engines

The innovative Hatz Silent Pack is still unrivaled today by competitors. The engine capsule reduces radiated noise emission by 90 percent. This means, 10 Silent Pack engines emit no more noise than a single non-encapsulated engine.





For years already the Hatz 4L42C has been successfully fitted with a robustly designed exhaust gas recirculation system for fulfillment of the emission standards in Europe and the USA.



#### Wide power range, one engine platform

The L-series of the Hatz diesel engines is available as two-cylinder (2L41C) with 15 up to 24 kilowatts, three-cylinder (3L41C) with 23 up to 37 kilowatts and fourcylinder (4L41C and 4L42C) with 30 up to 49 kilowatts. This saves both time and money for the development and construction of entire machinery series.

# Hatz L-series: Economic, fail-safe, quiet

These are the qualities that characterise Hatz L-series engines. Their rugged design gives them an extremely long service life. The crankcase and single cylinders are made from indestructible gray cast iron, the power train and bearing points are generously dimensioned giving them an extremely long service life. This allows L-series engines to be operated in even remote areas or for applications without constant monitoring.

The rugged construction is achieved through use of a crankcase and single cylinders made from indestructible gray cast iron. The power train and bearing points are also generously dimensioned giving them an extremely long service life. The L-series has two power take off points allowing connection of accessory equipment on the governor side as well as the flywheel side.

#### **The Silent Pack**

The innovative Hatz Silent Pack is still unrivaled today by competitors. Radiated noise emission is reduced by 90 percent due to use of the engine capsule. This means, 10 Silent Pack engines emit no more noise than a single nonencapsulated engine. The capsule consists of a sheet metal construction mounted on the engine with structure-borne noise insulation. All control and service points have easy outside accessibility. Due to the cooling air circulation, Silent Pack engines – like all other Hatz engines – can be used under virtually all climatic conditions.

#### **Environmental aspects**

Hatz diesel engines in the L/M series are the only exhaust-compliant, air-cooled engines available in this power range. The Hatz 4L42C is fitted with an exhaust gas recirculation. The engines fulfill the strict emission standards of EU Stage IIIA as well as the regulations of the US EPA Tier 4 interim. In the configuration below 19 kilowatts the Hatz 2L41C even fulfils the requirements of EU Stage V and US EPA Tier 4 final.

#### Power range

L-series engines are available in a power range from 15.0 to 48.8 kilowatts, depending on the number of cylinders and speed setting (IFN according to DIN ISO 3046/I). The maximum torque lies between 100 and 195 newton metres.

Engine variations Cylinders		2L41C	3L41C	4L41C	4L42C
		2	3	4	
Displacement [l / c	u in]	1.716 / 104.7	2.574 / 157.0	3.432 / 209.4	
IFN rating ISO 3046-1 max. [kW / hp @ 3000 rpm]		24.4 / 33.2	36.7 / 50.0	48.8 / 66.4	46.1 / 62.7
Weight [kg / lb]		303 / 668	363 / 800	433 / 955	435 / 959
Power class [kW]	EPA Tier 4 final	0-19		_	
of certification	EU Stage IIIA	19-37	19-37	19-37 const.	37-56 const.
Features			_		EGR

const. constant speed EGR Exhaut gas recirculation



#### 4M42

Hatz diesel engines in the L/M-series are the only exhaust-reduced, air-cooled engines available in this power range. The Hatz 4M42 is fitted with an exhaust gas recirculation as well.



#### Simple operation

The M-series engines are fitted with an automatic hydraulic belt tensioner, self-bleeding injection pump, automatic cold start feed, and a signal transmitter for air filter maintenance as standard. Operation is also therefore easy even for non-specialists without long familiarisation.

#### Wide power range, one engine platform

The M-series of the Hatz diesel engines is available as two-cylinder (2M41) with 15 up to 28 kilowatts, three-cylinder (3M41) with 22 up to 43 kilowatts and four-cylinder (4M41 and 4M42) with 30 up to 56 kilowatts. This saves both time and money for the development and construction of entire machinery series.

# Hatz M-series: Always ready for operation

The M-series is the long-running success among the industrial diesel engines. The multi-cylinder engines have been successfully established in the market for about 30 years – and they are still considered to be unbeatable. The rugged basic power train, above all the strongest crankshaft of all engines in the market, has remained unchanged since the market launch. So running times of many tens of thousands of hours are no problem for the engines in the M-series.

The qualities of the L-series can also be transferred to the M-series; both engines have a nearly identical construction. The only difference for engines in the Hatz M-series over the L-series is the Silent Pack. Without the engine capsule the M engines are ideal for installation in machine rooms. When it comes to operating reliability and ruggedness, these engines – like all Hatz engines – set the industry benchmark. The Hatz M-series has three power take off points. Therefore accessory equipment can be operated at the crankshaft and pulley on the flywheel side, as well as on the governor side.

#### Fuel consumption and cold start

Hatz M-series engines are among the most efficient in the market. Fuel consumptions of 212 grams per kilowatt hour testify to the optimised combustion process. 6-hole VCO nozzles, as well as the monoblock single pumps, and the optimised combustion chamber geometry all make their contribution to this. Without a pre glow system the engines start reliably as low as -10 degrees Celsius; with a pre glow system and corresponding resources even -32 degrees Celsius is no problem.

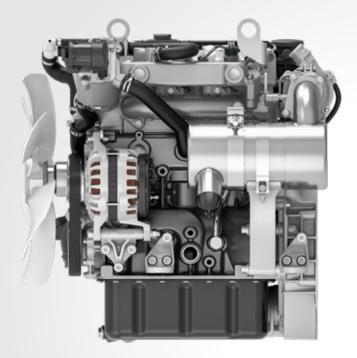
#### Maintenance and repair with little effort

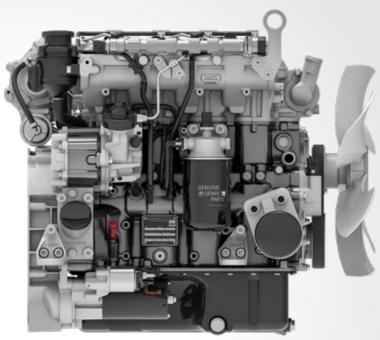
Maintenance of the M-series does not cause any great effort, because it has easy outside accessibility for all points necessary for oil checks, oil refill, oil change, and oil filter change as well as for valve adjustment and cleaning/changing of the integrated air filter. The M-series is built with a modular construction principle. Length-independent components such as cylinder heads, cylinders, conrods, bearing shells, injection nozzles, injection pumps, air filters, engine regulators, starter, and alternator are identical for all engines. Engine repair is easier and more cost effective. Furthermore, storekeeping for wearing parts is much easier to organise.

#### **Power range**

M-series engines are available in a power range from 16.4 to 53.1 kilowatts, depending on the number of cylinders and speed setting (IFN according to DIN ISO 3046/I). The maximum torque lies between 105 and 220 newton metres.

Engine variations		2M41	3M41	4M41	4M42	
Cylinders		2 3		4		
Displacement [l / cu	in]	1.716 / 104.7	/ 104.7 2.574 / 157.0 3.432 /		209.4	
IFN rating ISO 3046- [kW / hp @ 3000 rpr		26.3 / 35.8	39.8 / 54.1	53.1 / 72.2	51.5 / 70.0	
Weight [kg / lb]		258 / 569	308 / 679	373 / 822	378 / 833	
	EU Stage V		8-3	19		
Power class [kW] of certification	EPA Tier 4 final	0-19		_		
	EU Stage IIIA	19	-37	19-37 const.	37-56 const.	
Features			-		EGR	





#### 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: Federal Ministry for Economic Affairs and Energy on the basis of a decision by the German Bundestag





All variants of the H-series are available as a ready-to-install and fully factory-tested OPU (Open Power Unit). In addition to the standard scope of delivery, air filter, radiators, charged air radiators, hosing and cable loom are mounted on delivery.



#### 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 1.5 and 2 litres engines that reach a maximum output of 62 kilowatts, setting benchmarks in their performance classes. The fulfilment of the stringent EU Stage IIIB and 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

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 switches off the engine in an emergency to prevent major damage.

#### Bosch 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 1800 bar. It works with three precisely dosed injections per working cycle: a pre-injection, main injection and post injection. In conjunction with the other ideally matched Bosch system components, the perfect balance is reached between dynamics, quiet combustion noise, low emissions and economy.

#### Extraordinarily high fuel efficiency

When it comes to fuel efficiency, the Hatz H-series models with a specific fuel consumption of less than 220 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. This makes each H-series model the most efficient engine in its power class.

Engine variations		<b>3H50</b> 71	3H50TICD <sup>2</sup>	3H50TIC	<b>3H50</b> <i>T</i> / <sup>3</sup>	4H50TICD <sup>2</sup>	<b>4H50</b> TIC	<b>4H50</b> 7/	
Cylinders				}	4				
Displacement [l / cu in]			1.464 /	89.32		1.952 / 119.10			
IFN rating ISO 3046-1 max. [kW / hp @ 2800 rpm]		18.4 / 24.7 <sup>4</sup>	42.0 /	56.2	46.5 <b>/</b> 62.4 <sup>5</sup>	5 / 62.4 <sup>5</sup> 55.0 / 73.8		62.0 <b>/</b> 82.5⁵	
Weigh	t [kg / lb]	132 / 291	140 / 309	154 / 340 <sup>6</sup>	133 / 293	158 / 348	173 / 381 <sup>6</sup>	152 / 335	
	EU Stage V	8-19	19-56	_	_	19-56	_	_	
[kW] tion	EPA Tier 4 final	8-19	19-56	19-56	_	19-56	19-56	_	
Power class [kW] of certification	EU Stage IIIA	_	_	19-37	19-37	_	19-37	19-37	
Power of ce	EU Stage IIIB	_	_	37-56	_	_	37-56	_	
	EU Stage II	_	_	_	37-75	_	_	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

<sup>1</sup>Available early 2019 <sup>2</sup>Available Dec. 2018 <sup>3</sup>Available mid/end 2018 <sup>4</sup>@ 2600 rpm <sup>5</sup> IFNsi <sup>6</sup> Including engine mounted aftertreatment

Fast and reliable service is not an empty phrase for us, rather it is the reality we live.

### **Hatz Service**

# Hatz Service: Worldwide and quickly there

The global service network includes over 500 service centers, of which 12 are wholly owned subsidiaries and 114 are Hatz agencies in 120 countries. This means we can ensure fast supply of spare parts and replacement engines, and also quickly carry out repairs.

Short paths in sales and service are an important requirement in international business. This is why customer proximity is important for Hatz. We are active in all important markets with sales and service companies so that we can react quickly and flexibly to our customers' requirements. The central hub of all activities is our location in Germany.

#### Repair, maintenance, conditioning

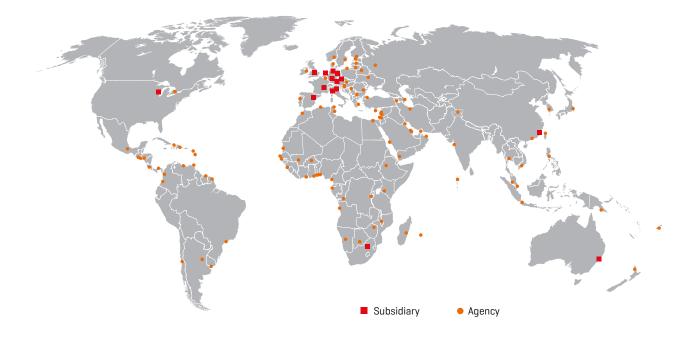
The repair, regular servicing, or even the complete conditioning of Hatz engines can be carried out competently at the over 500 service centers worldwide. Well trained personnel, the worldwide and fast supply of original spare parts, and the right tools make the certified Hatz partner workshops the reliable professional for your Hatz products.

#### It only remains original with an original

Only the use of Hatz Genuine Spare Parts guarantees a long service life, high availability, and smooth operability of your engines and systems. The initial installation of high-quality wearing parts in our products ensures a reliable and long service life. After servicing, you have the original performance with quality Hatz Genuine Spare Parts by preference.

#### **Training courses**

Certified Hatz authorized workshops regularly receive the latest product documentation and training by our specialists so that they stay at the forefront of the state of the art. In this way we guarantee a constantly high level in servicing and repair by our specialist partners.



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