

CREATING POWER SOLUTIONS.



  
**Silent  
PACK**

2L41C  
3L41C  
4L41C | 4L42C

**Hatz diesel engines | data sheet**



**Exhaust gas recirculation (EGR)**

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 four-cylinder (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 characterize 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.

## 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.

## Fuel consumption and cold start

L-series engines are among the most efficient in the market. Fuel consumptions of 232 grams per kilowatt hour testify to the optimized combustion process. 6-hole VCO nozzles, as well as the monoblock single stage pumps, and the optimized combustion chamber geometry all make their contribution to this. Without a pre glow system the engines start reliably as low as -10 °C; with a pre glow system and corresponding resources even -32 °C is no problem.

## Unique automatic engine protection

The integrated, intelligent, mechanical automatic engine protection protects the engine. When a cooling fan malfunctions, there is not enough oil, or the inclination is too high, the engine is automatically stopped to prevent engine damage.

## 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 non-encapsulated engine. The capsule consists of sheet metal with structure-borne sound insulation that is mounted on the engine. 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.

## Robust and durable design



Hatz engines are designed for an exceptionally long service life. The best possible materials and components coupled with uncompromising quality assurance contribute to the fact that Hatz engines have been setting the benchmark in the industry for many years when it comes to robustness and service life. And should, contrary to expectations, a spare part actually be needed, more than 500 service partners in 120 countries are available quickly and dependably with advice and assistance as well as Hatz Genuine Spare Parts.

IFN Rating ICFN Rating F/IFN/ICFN Rating

Sales area [Exhaust certificate]		2L41C	3L41C	4L41C	4L42C
USA [EPA/CARB constant speed]	[rpm]	1500-2000	–	–	–
USA [EPA 2-Speed]	[rpm]	1500-2000	–	–	–
USA [EPA variable speed]	[rpm]	2000	–	–	–
EU [constant speed]	[rpm]	1500-3000	1500-3000	1500-1800	1800-3000
EU [variable speed]	[rpm]	1500-3000	1500-3000	1500-1800	–
India CPCB I [Genset]	[rpm]	1500	1500	1500	–
All others [Non-EPA]	[rpm]	1500-3000	1500-3000	1500-3000	–

# Technical data, performance table

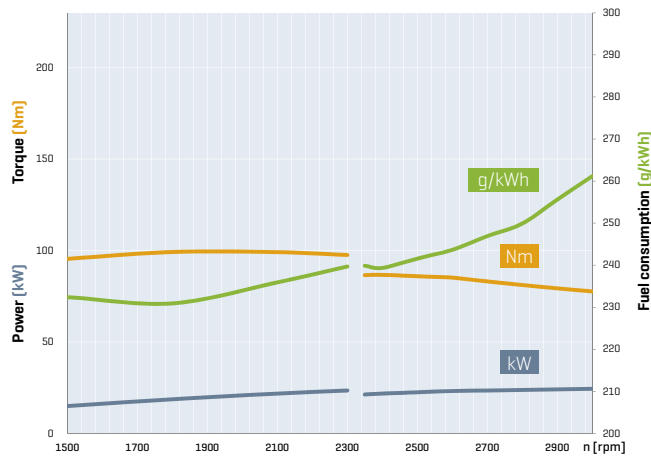
Technical data		2L41C	3L41C	4L41C	4L42C
Type		Air-cooled 4-stroke diesel engine			
Cylinder		2	3	3	4
Injection system		Direct injection			
Exhaust aftertreatment only US EPA Tier 4 final		—	—	—	EGR
Bore x stroke [mm / in]		102 x 105 / 4.02 x 4.13			
Displacement [l / cu in]		1.716 / 104.7	2.574 / 157.0	3.432 / 209.4	
Mean piston speed @ 3000 rpm [m/s / ft/min]		10.5 / 2.067			
Compression ratio		20.0:1			20.8:1
Lubrication oil consumption, related to full load		max. 1 % of fuel consumption			
Oil filling	max. [l / US qts]	4.5 / 2.5	8.0 / 5.0	13.0 / 5.0	
	min. [l / US qts]	4.8 / 2.6	8.5 / 5.3	13.7 / 5.3	
Speed control	Lowest idle speed [rpm]	900			1,000
	Static speed droop @ 3000 rpm	approx. 5 %			
Combustion air required @ 3000 rpm approx. [kg/h / cfm] <sup>1</sup>		188 / 92	282 / 138	376 / 184	
Cooling air required @ 3000 rpm approx. [kg/h / cfm] <sup>1</sup>		2,095 / 1,024	2,818 / 1,377	3,034 / 1,483	
Mass moment of inertia J <sub>engine</sub> [kgm <sup>2</sup> / lb ft <sup>2</sup> ]	SAE-flywheel 8°	0.64 / 15.2	0.65 / 15.4	0.67 / 15.9	
	flywheel for F+S clutch	0.49 / 11.6	0.50 / 11.9	0.51 / 12.1	
Starter [V]		12 [2.7 kW / 3.6 hp]   24 [4.0 kW / 5.4 hp]			
Alternator charging current @ 3000 / 1500 rpm [A]		60 / 42 [14 V]   40 / 28 [28 V]			
Battery capacity min. / max. [Ah]		88 / 143 [12 V]   55 / 110 [24 V]			
Dimensions	Engine with electric start 12 V or 24 V [kg / lb]	303 / 668	363 / 800	433 / 955	435 / 959

Engine output max. [kW / hp] <sup>2</sup>	[rpm]	2L41C	3L41C	4L41C	4L42C
Vehicle output acc. to DIN ISO 1585.	3000	27.0 / 36.7	40.9 / 55.6	54.2 / 73.7	— / —
	2600	25.3 / 34.4	38.2 / 52.0	50.8 / 69.1	— / —
	2300	23.1 / 31.4	35.3 / 48.0	46.3 / 63.0	— / —
Blocked ISO brake horsepower (IFN) for heavily intermittent loading acc. to ISO 3046-1.	3000	24.4 / 33.2	36.7 / 50.0	48.8 / 66.4	46.1 / 62.7
	2600	23.2 / 31.6	35.2 / 47.9	45.9 / 62.4	43.5 / 59.2
	2300	23.5 / 32.0	35.9 / 48.8	47.0 / 63.9	45.1 / 61.3
	2000	20.9 / 28.4	31.2 / 42.4	41.0 / 55.8	40.0 / 54.4
	1800	18.7 / 25.4	28.0 / 38.1	37.0 / 50.3	37.5 / 51.0
	1500	15.0 / 20.4	22.9 / 31.1	30.0 / 40.8	— / —
ISO standard power output (ICXN) [10% overload permissible]	3000	22.0 / 29.9	33.0 / 44.9	43.9 / 59.7	— / —
Blocked ISO standard power output [no overload permissible] acc. to ISO 3046-1. For constant speed and constant load (ICFN).	2600	20.9 / 28.4	31.7 / 43.1	41.3 / 56.2	— / —
	2300	21.2 / 28.8	32.3 / 43.9	42.3 / 57.5	— / —
	2000	18.8 / 25.6	28.1 / 38.2	36.9 / 50.2	— / —
	1800	16.8 / 22.8	25.2 / 34.3	33.3 / 45.3	— / —
	1500	13.5 / 18.4	20.6 / 28.0	27.0 / 36.7	— / —

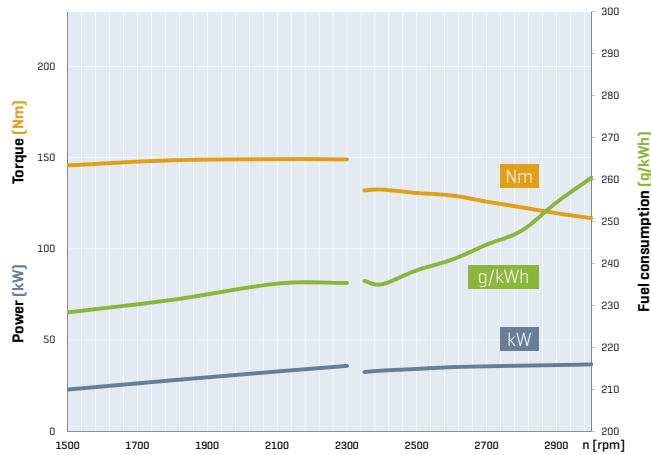
<sup>1</sup> For other speeds there is a linear reduction in the air requirement. <sup>2</sup> Version „Z“ with counter balance shaft: power reduction about 0.3 – 1.5 kW depending on cylinder and speed.

# Power, torque and fuel consumption

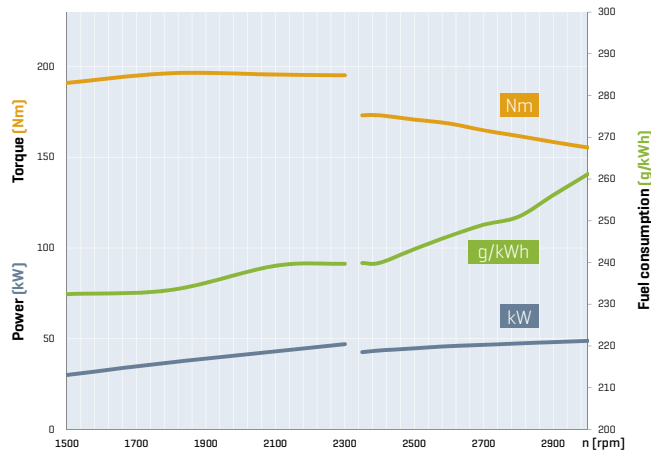
## 2L41C



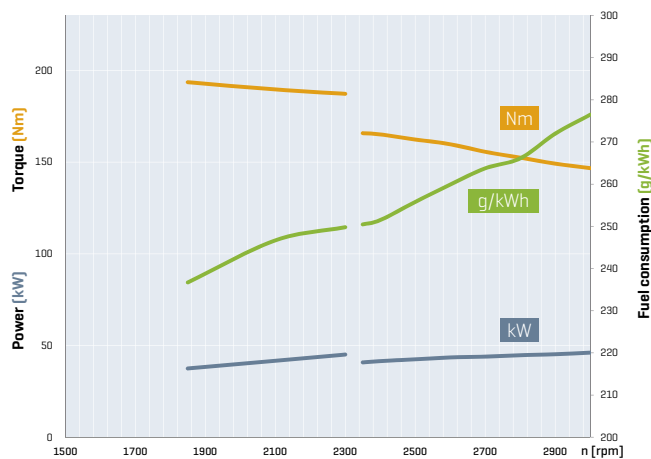
## 3L41C



## 4L41C



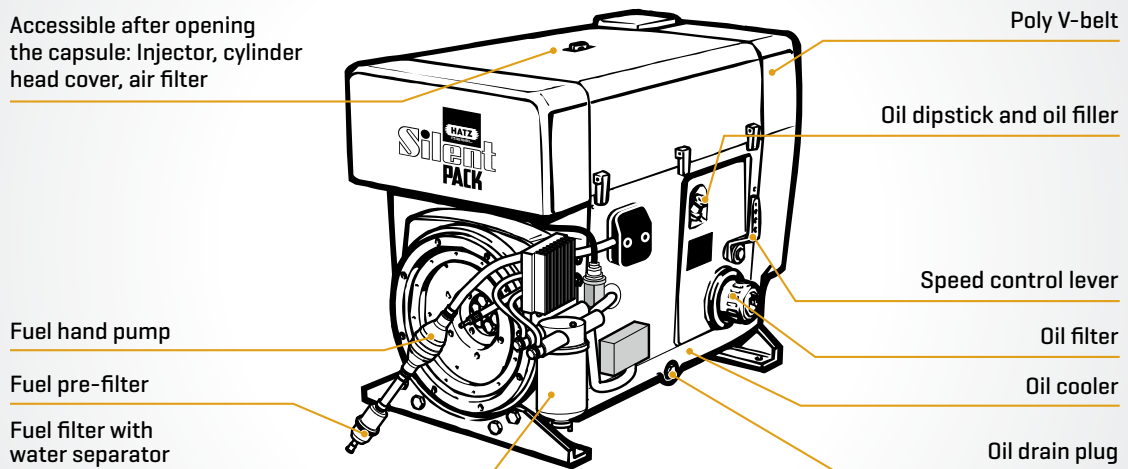
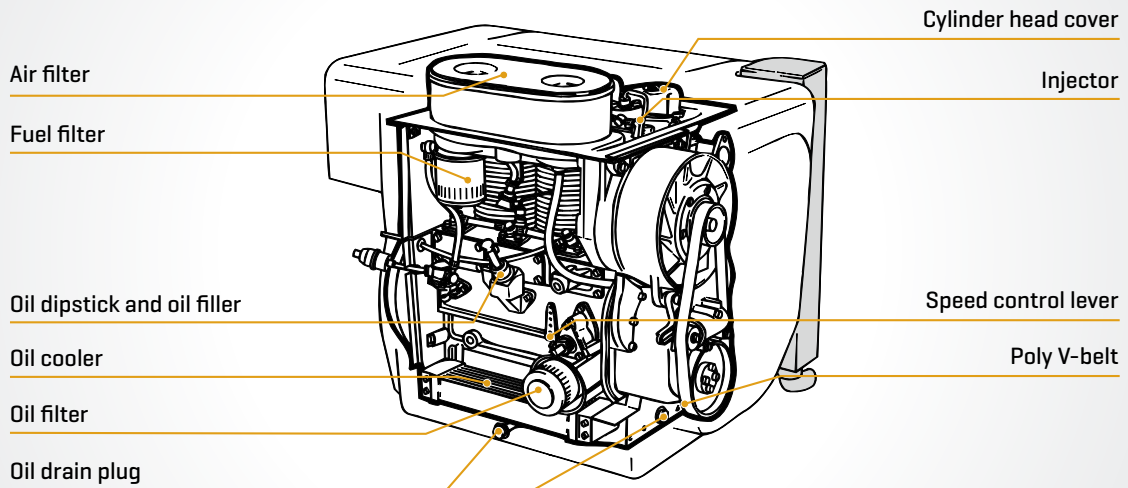
## 4L42C



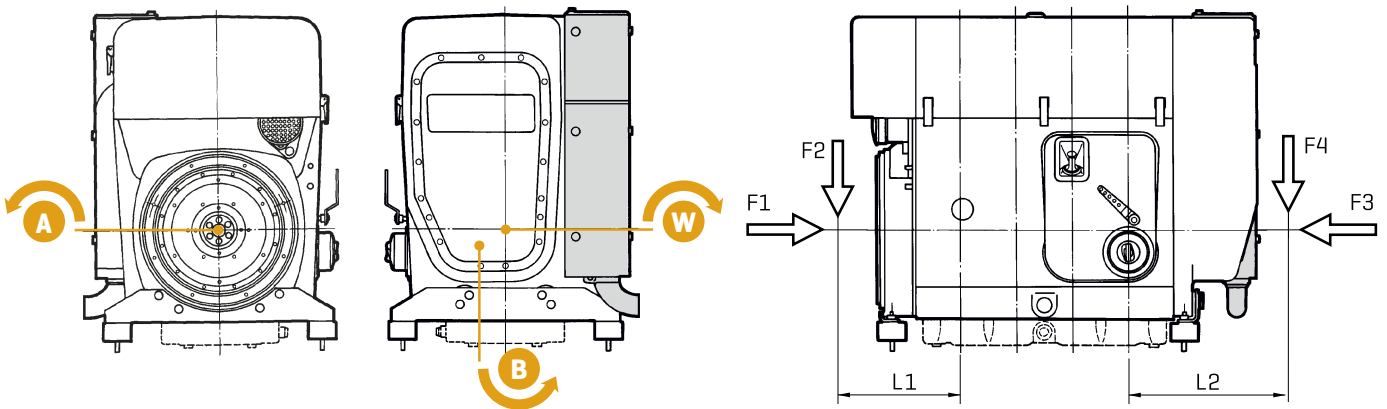
### Power ratings

For the power ratings, refer to standard reference conditions of ISO 3046-1 (IFN): +25 °C (77 °F), 100 kPa, relative humidity 30 %. The specified power is reached during the running-in period, and can be 5 % less on delivery. Power reduction acc. to ISO 3046-1. Standard values: More than 100 m above sea level approx. 1 % per 100 m. Above 25 °C approx. 4 % per 10 °C. The power taken from the alternator also has to be added to the power calculation.

## Maintenance and operating points



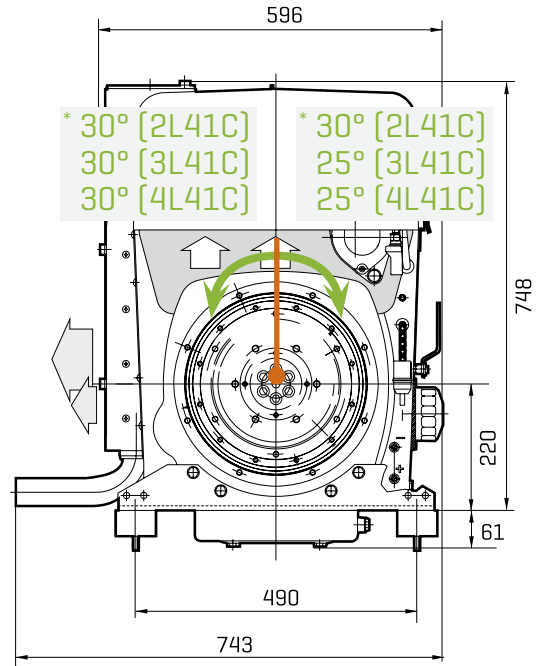
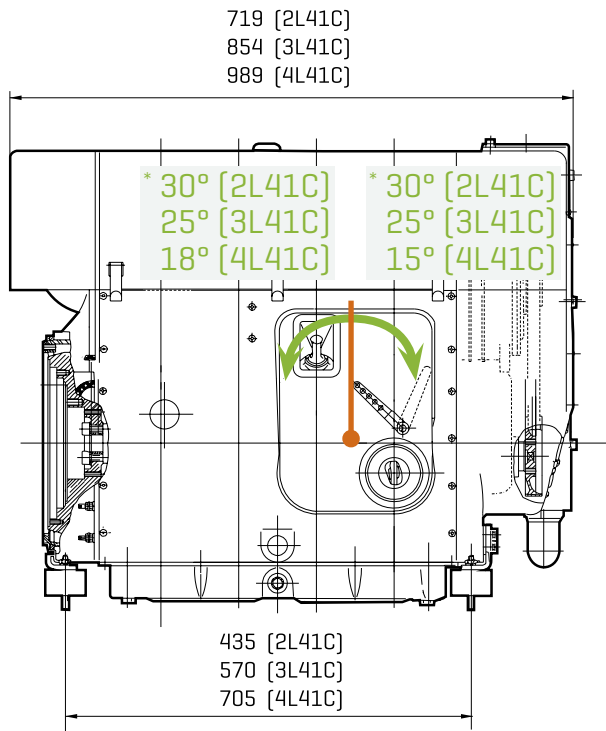
## Power take off



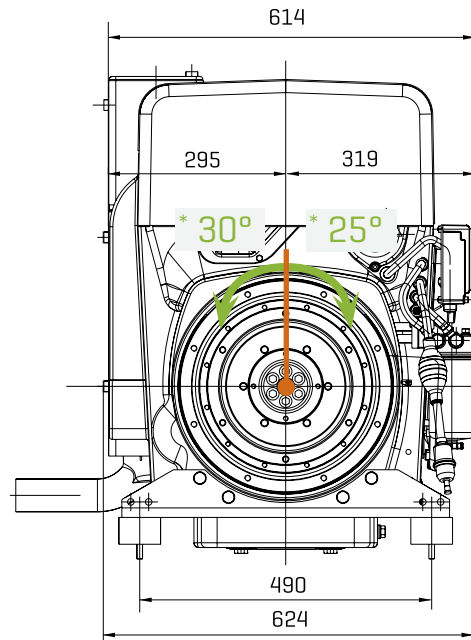
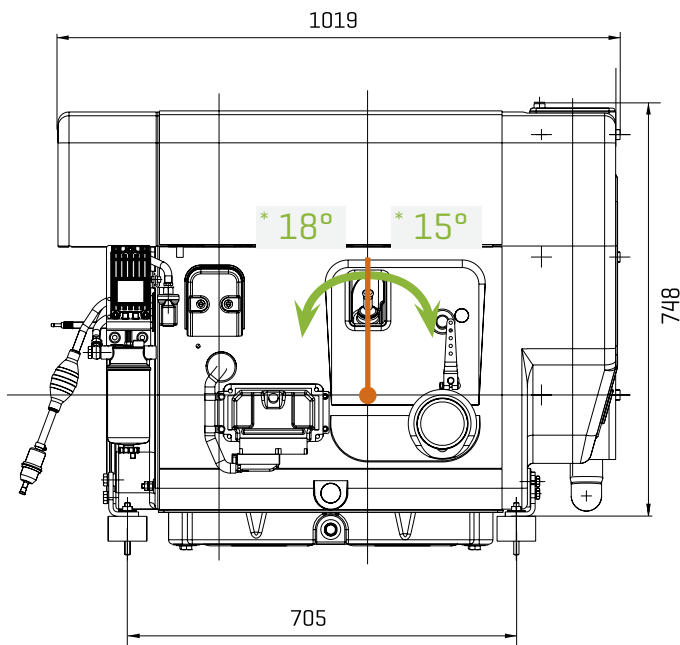
Power take off		2L41C	3L41C	4L41C	4L42C
Transmittable torque	A			Full torque	
	B			32 Nm with engine speed	
	W			70 Nm with engine speed	
Permissible load	F1			2700 N	
	F2			$F2 = \frac{400\,000}{L1 \text{ [mm / in]} - 73 / 2.87} \text{ [N]}$	
	F3			1770 N	
	F4			$F4 = \frac{228\,330}{L2 \text{ [mm / in]} - 76 / 2.99} \text{ [N]}$	

# Dimensions [mm]

## 2L41C | 3L41C | 4L41C



## 4L42C



Spread of box dimensions  $\pm 3$  mm due to tolerance. Drawings with detail and connection dimensions as PDF and DXF can be found at [www.hatz-diesel.com](http://www.hatz-diesel.com).

\* Max. tilt position

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