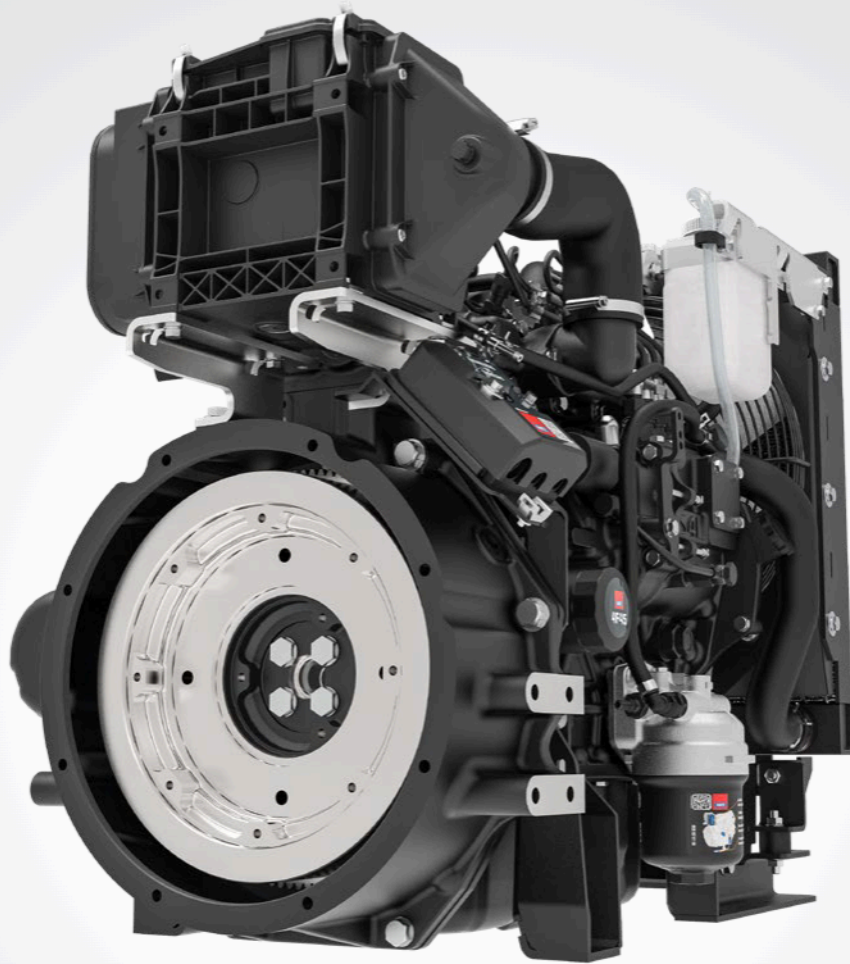


CREATING
POWER
SOLUTIONS



Data sheet
F-series
Industrial Diesel Engines

Hatz Drive Solutions



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 sys-

tem – 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.

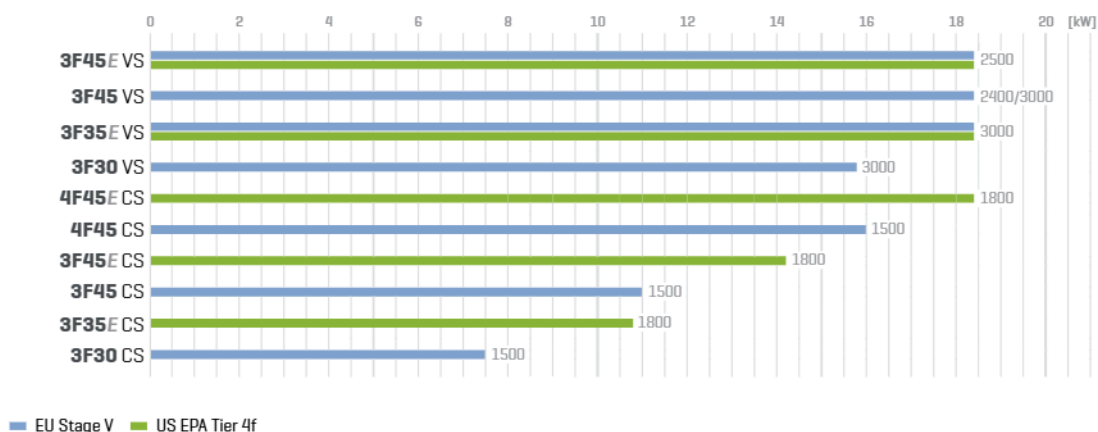
World-Class Service for the Complete Engine System

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.

F-series – power ranges, emission classes and rated speeds



Technical Data, Performance Table

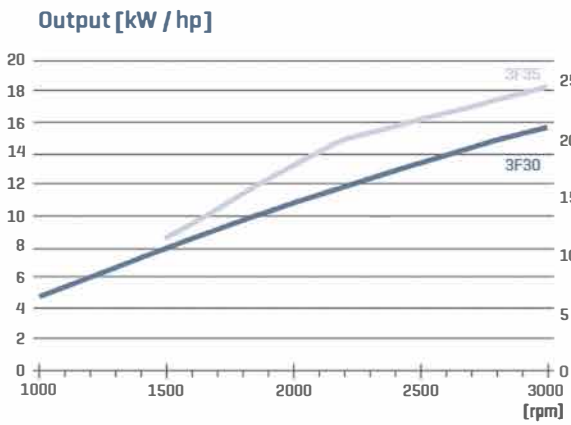
Technical data			3F30	3F35E	3F45	3F45E	4F45	4F45E	
Engine	Type		Liquid-cooled 4 stroke diesel engine						
	Cylinder		3			4			
	Injection system		Mechanical; indirect injection in swirl chamber						
	Bore x stroke [mm]		76 x 70	76 x 81	78 x 92				
	Displacement [l]		0.952	1.102	1.318	1.758			
	Mean piston speed @ 3000 rpm [m/s]		7.0	8.1	9.2	–	–	–	
	Compression ratio		23.0 : 1			22.0 : 1			
	Firing sequence		1 - 3 - 2			1 - 3 - 4 - 2			
	Lubrication oil consumption, related to full load		approx. 0.1-0.3 % of fuel consumption at rated speed						
	Oil filling	max. [l]	3.6	4.5	4.2	4.2	6.0	6.0	
		min. [l]	2.3	3.4	2.9	2.9 ²	4.2	4.2	
	Speed control	Lowest idle speed [rpm]	900	US 1200 EU 1000	1000	1000	–	–	
		Max. idle speed [rpm]	3200	3200	3200	2500	1560	1800	
		Control method	mechanical	electronic	mechanical	electronic	mechanical	electronic	
Amount of combustion air @ 3000 rpm approx. [kg/h]		85	112 ²	133 ²	–	–	–		
Radiator fan	VS	Suction fan					–		
	CS	Pressurised fan							
Diameter		340 mm							
Installation information	Translation		1:1.26		1:1.33		1:1.47		
	Amount of cooling air approx. [kg/h]	VS @ 3000 rpm	4110 ²	4110 ²	4500 ²	–	–	–	
		CS @ rated speed	2100 ²	3100 ²	2250 ²	3180 ²	3020 ²	3330 ²	
	Mass moment of inertia Jengine [kgm ²]	VS	0.15	0.28	0.24		0.23		
		CS	0.27	0.28	0.30		0.29		
	Starter [V]/[kW]		12/1.2			12/1.7			
	Cold start temperature [°C]		-15						
	Alternator charging [A]		40 [14 V]			65 [14 V]			
	Battery capacity max. [Ah]		60 ²	88 ²	88 ²				
	Weight [kg]	Basic engine VS/CS	95/107	110/110 ²	135/150	138/153	–/160	–/163	
Open Power Unit VS/CS		126/141	141/141 ²	168/183	171/186	–/194	–/197		
Dimensions	Flywheel		6.5"			7.5"			
	Flywheel housing		SAE 5			SAE 5			
	L ¹ x B x H [mm]	Basic engine	VS	536x431x548	565x431x580	556x442x583	556x442x583	–	–
			CS	571x431x548	565x431x580	595x442x583	595x442x583	684x442x583	684x442x583
L ¹ x B x H [mm]	Open Power Unit	VS	597x449x638	626x449x670	618x453x671	618x453x671	–	–	
		CS	626x449x638	626x449x670	650x453x671	650x453x671	739x453x671	739x453x671	

Engine output max. [kW/hp]	[rpm]	3F30	3F35E	3F45	3F45E	4F45	4F45E
Blocked ISO fuel stop power (IFN) for intermittent loading according to ISO 3046-1. Applies to variable speed.	3000	15.8/21.2	18.4/24.6	18.4/24.6	–	–	–
	2500	–	–	–	18.4/24.6	–	–
	2400	–	–	18.4/24.6	–	–	–
Blocked ISO fuel stop power (IFN) for intermittent loading according to ISO 3046-1. Applies to constant speed.	1800 (Standby)	–	10.8/14.5	–	14.2/19.0	–	18.4/24.6
	1800 (Prime)	–	9.4/12.6	–	12.6	–	17.0
	1500 (Standby)	7.5/10.0	–	11.0/14.7	–	16.0/21.4	–
	1500 (Prime)	6.4/8.6	–	9.9/13.3	–	14.6/19.6	–

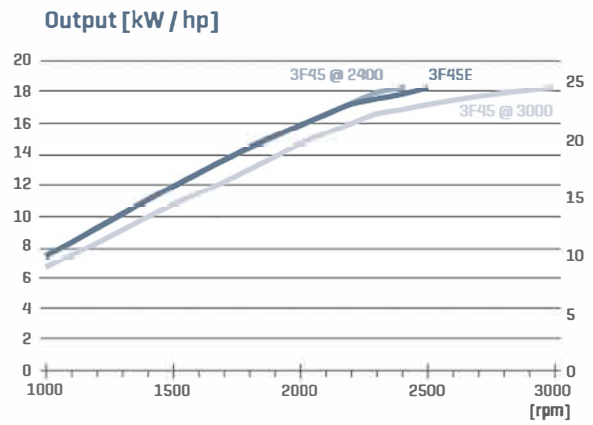
¹ Up to flange SAE5 housing ² Preliminary value

Maximum Power Output, Torque and Fuel Consumption

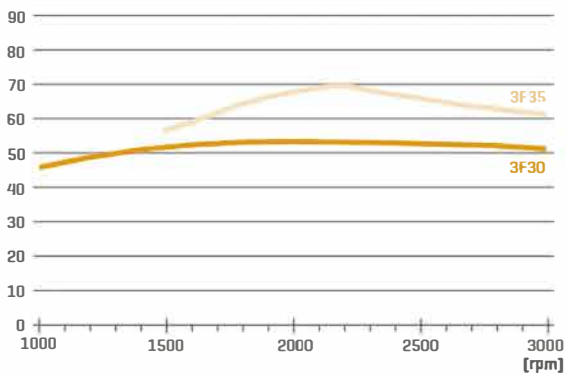
3F30 | 3F35E



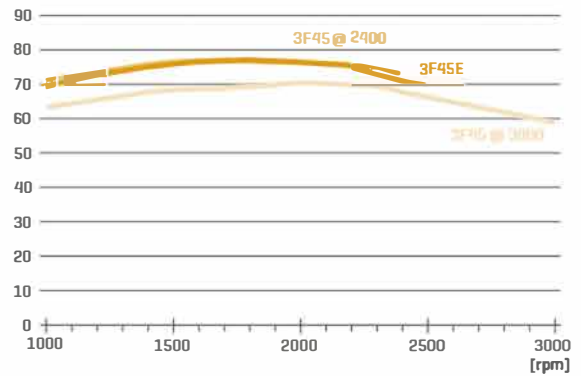
3F45 | 3F45E



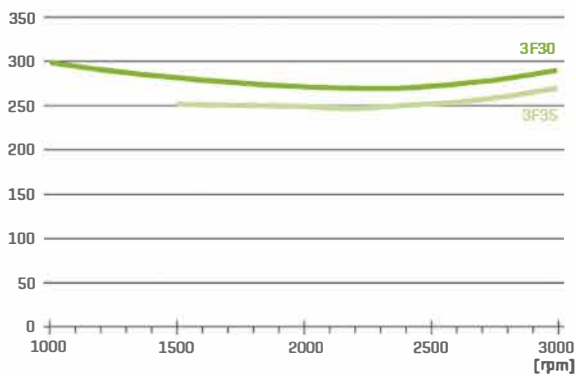
Torque [Nm]



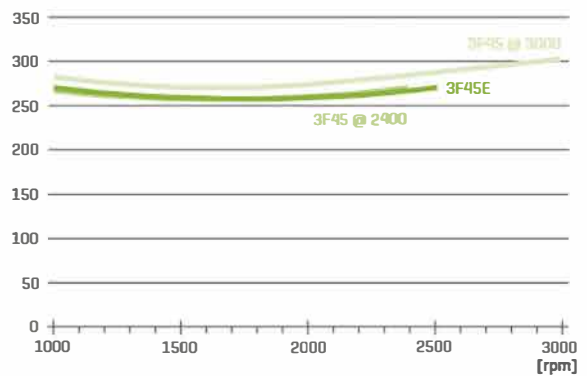
Torque [Nm]



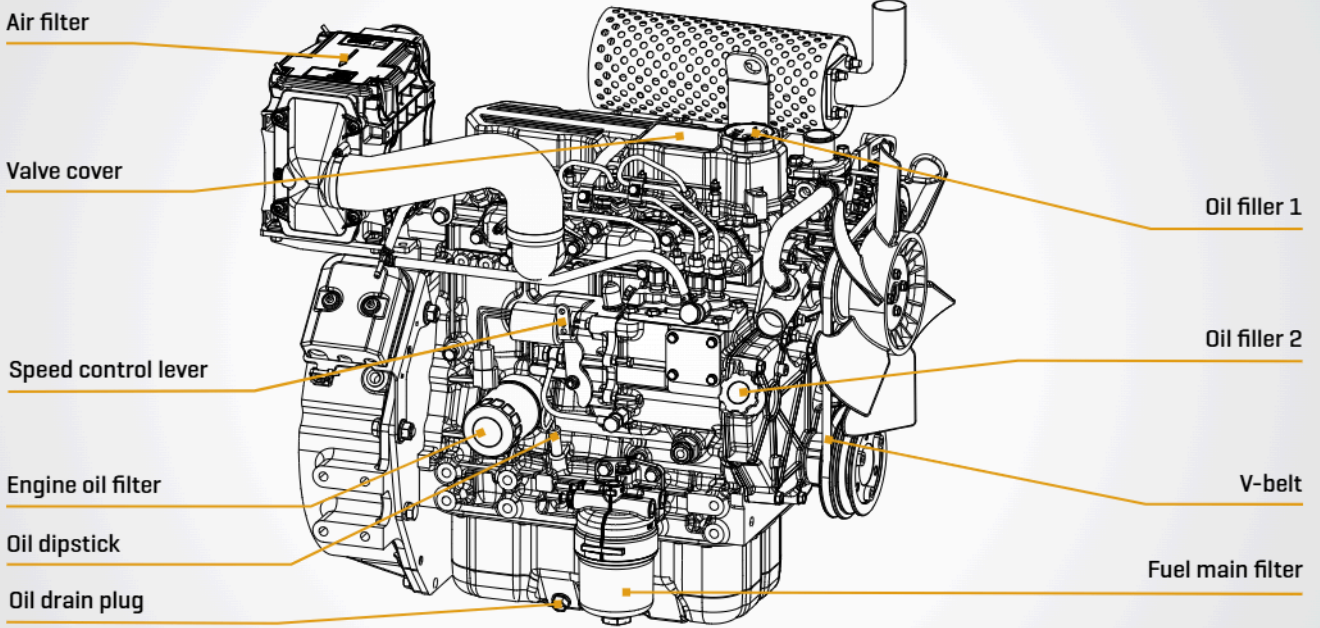
Fuel consumption [g/kWh]



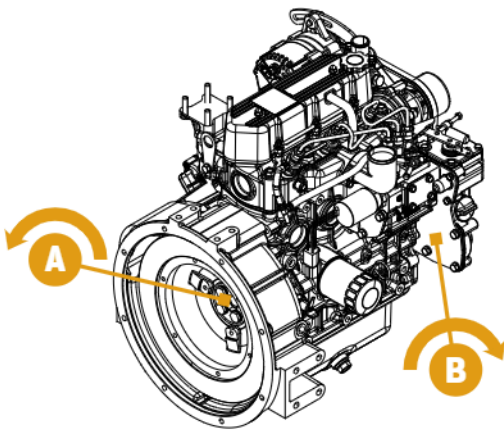
Fuel consumption [g/kWh]



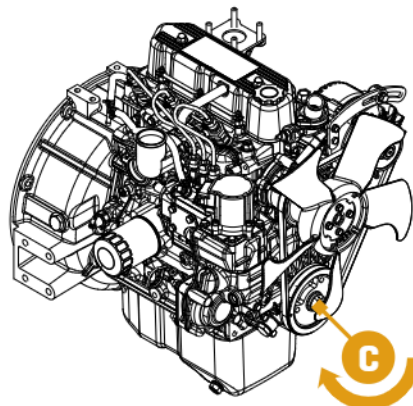
Maintenance and Operating Points



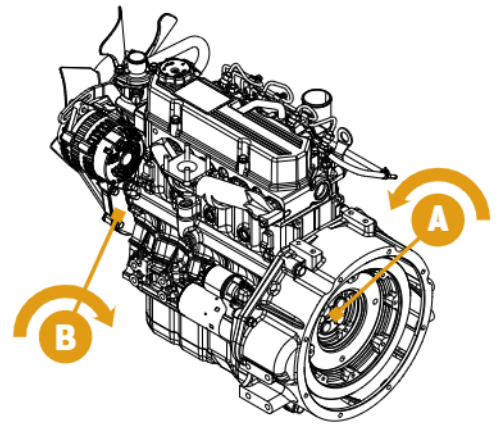
Power Take-off 3F30 | 3F35E



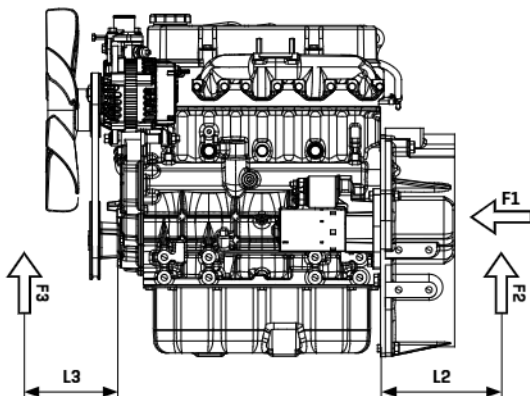
all types



3F45 | 3F45E | 4F45 | 4F45E



Load capacity [all types]

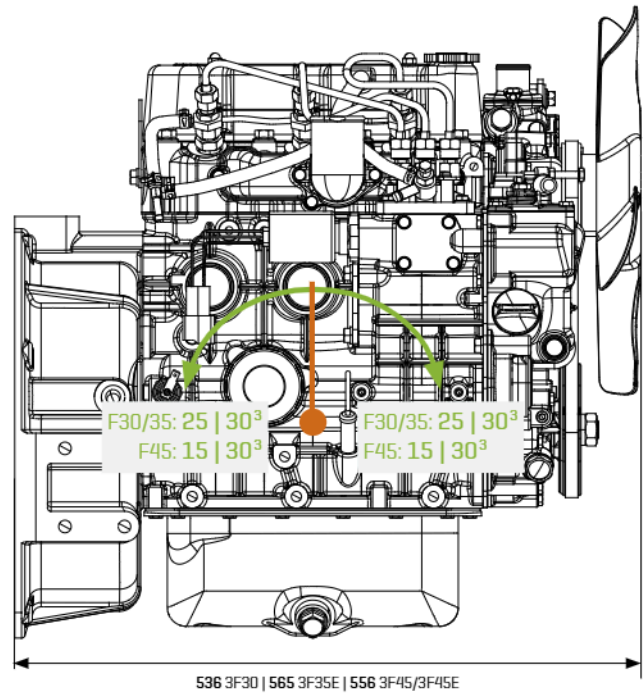
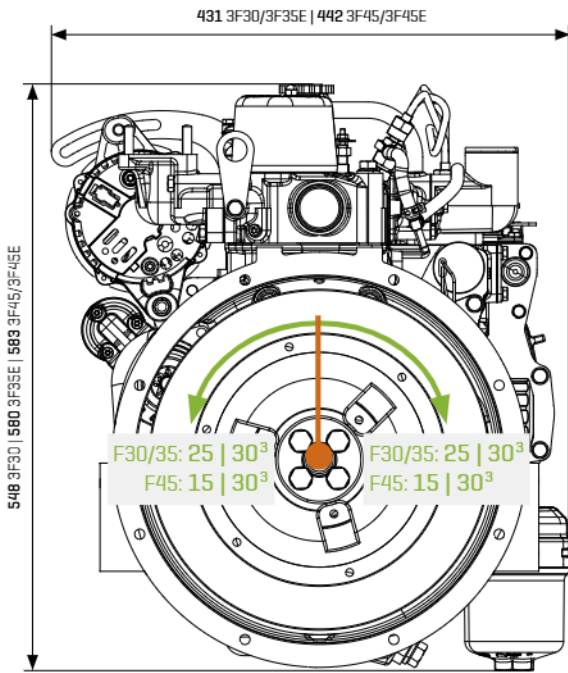


Power take-off		3F30	3F35E	3F45	3F45E	4F45	4F45E
Transmission ratio	A			1:1			
	B	0.867:1		1:1		NA	
	C			1:1			
Transmittable torque	A			100 %			
	B	15.6 Nm		39.2 Nm		NA	
	C	30 Nm				49 Nm	
Load capacity	F1max	Short-term 980 N Permanent 490 N				1080 N	
	F2max	1470 N @ L2=100 mm				1960 N @ L2=120 mm	
	F3max	680 N @ L3=120 mm				1470 N @ L3=120 mm	

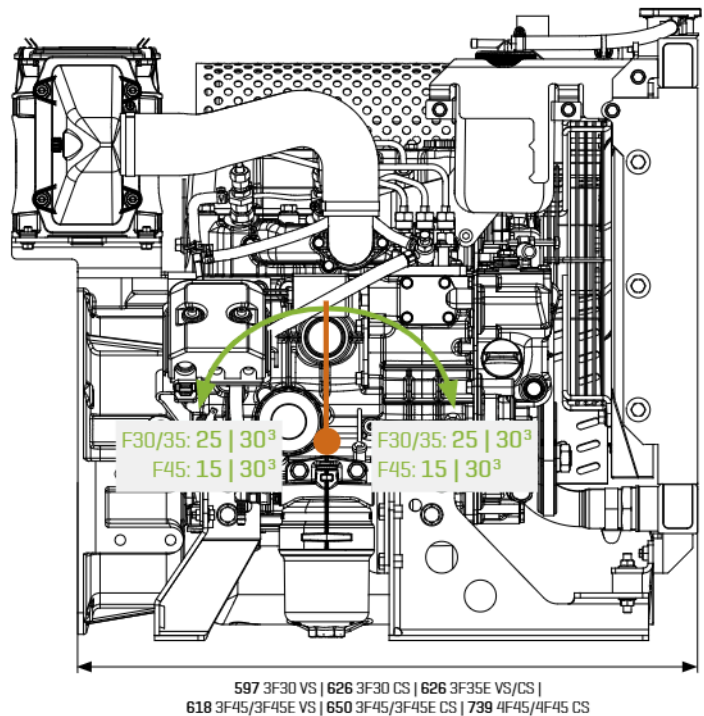
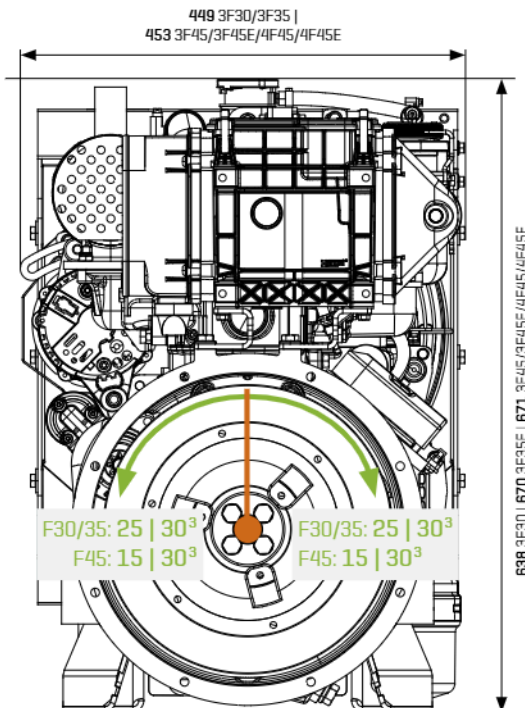
Dimensions [mm] and Inclinations [°]

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 hatz.com.

Basic Engine – variable [VS] speed ⁴



OPU (Open Power Unit) – variable [VS] and constant [CS] speed ⁴



³max. 30 min ⁴3F30/3F35E with 6.5" flywheel and SAE 5 connection housing; 3F45/3F45E/4F45/4F45E with 7.5" flywheel and SAE 5 connection housing

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