

# KOHLER® DIESEL KDI

55 – 105 kW | 75 – 141 hp



**KOHLER®**  
IN POWER. SINCE 1920.

# INNOVATIONS AND BENEFITS

## THE LOWEST FUEL CONSUMPTION IN ITS CLASS

The new KDI 3404 offers 10% lower fuel consumption than all competitors in its class. So how did we do it? We used an advanced injection system (2000 bar Common Rail, electronically controlled EGR valve, four valves per cylinder).

## GREATER PRODUCTIVITY

The new KDI 3404 has the highest torque and power figures in its class, delivering the same performance as larger displacement engines. High torque at low rpms allows for maximum productivity and provides immediate response even at low engine speeds. The result is up to 15% better productivity than other engines in its class with the same level of emissions.

## FLEXIBILITY OF APPLICATIONS

In response to increasing demand for hydraulic devices on industrial machinery, the KDI 3404 has two side auxiliary power take offs and one in the front to provide maximum flexibility and compact installation for hydraulic pumps of varying displacements.

## COMPACT DESIGN

The KDI 3404 is the most compact engine in its category. This allows manufacturers to design machines with smaller engine compartments, aiding driver visibility and increasing both safety and productivity.

## RELIABILITY AND SAFETY

Be unstoppable with KDI 3404. The work cycle is never interrupted by regeneration, resulting in a significant increase in productivity.

## FUN TO DRIVE

The KDI 3404 responds instantly to variations in load thanks to the turbocharger's perfect integration with the engine, as well as the electronic performance management. The high levels of torque available at low rpms allow the engine to work effectively — even in the most demanding conditions.

## LONGER MAINTENANCE INTERVALS

Thanks to its clean combustion the KDI 3404 doesn't need an oil change until 500 hours and above of use. The exclusive cylinder smoothing performed by next-generation machinery and the innovative design of the cylinder segments reduce friction, reducing oil consumption.

## BEST-IN-CLASS COMFORT

In terms of low noise, low vibration and high visibility, the KDI 3404 is the benchmark engine in its category. The special crankcase-bedplate architecture and the balancer shafts reduce noise and vibration; the compact aftertreatment grants excellent visibility to provide best-in-class comfort.

# KOHLER Flex

## THE INTEGRATED SUITE OF ENGINE SYSTEMS

KOHLER Flex is the range of solutions for emission control that Kohler has designed to enable each configuration of the engines of the KDI platform to comply with all emissions standards and regulations, worldwide.

At the heart of KOHLER Flex there is the clean combustion of KDI engines that enables the adoption of a compact DPF to meet the more stringent emission standard.

KOHLER Flex combines the clean in-cylinder combustion of KDI engines, made possible by state-of-the-art High Pressure Common Rail (2000 bar), 4 Valves head, Turbocharger, cooled-EGR, and the most compact aftertreatment devices (DOC, DPF and SCR) to comply with all emission requirements. Each combination of KOHLER Flex has been designed in line with the all-in-one philosophy, with the objective of minimize change for OEMs while installing and fitting into existing packages. These systems are efficient and reliable and can be deployed in many combinations to achieve effective emissions solutions for the different markets.

		KOHLER Flex solutions								
		EA	EB	E4	E5	U3	U4	C3	C4	NE
		EUROPE				NORTH AMERICA & CANADA		CHINA		LESS REGULATED COUNTRIES
	EMISSION STANDARD	STAGE 3A	STAGE 3B	STAGE IV	STAGE V*	TIER 3	TIER 4 FINAL/ CARB	CHINA 3	CHINA 4#	
<56kW	MECHANICAL INJECTION	•								•
	HIGH-PRESSURE COMMON RAIL		•		•	•	•	•	•	(•***)
	C-EGR		•		•		•		•	
	DOC		•		•		•		•	
	DPF				•		(•)**			
>56kW	HIGH-PRESSURE COMMON RAIL			•	•	•	•	•	•	(•***)
	C-EGR			•	•	•	•	•	•	
	DOC			•	•		•		•	
	DPF				•		(•)**			
	SCR			•	•		•			

\* Introduction date: January 2019 (19-56kW), January 2020 (56-130kW)

\*\* on demand on selected model

\*\*\* with limitation on max sulfur content in fuel

# Indicative only. China 4 emissions limits under definition

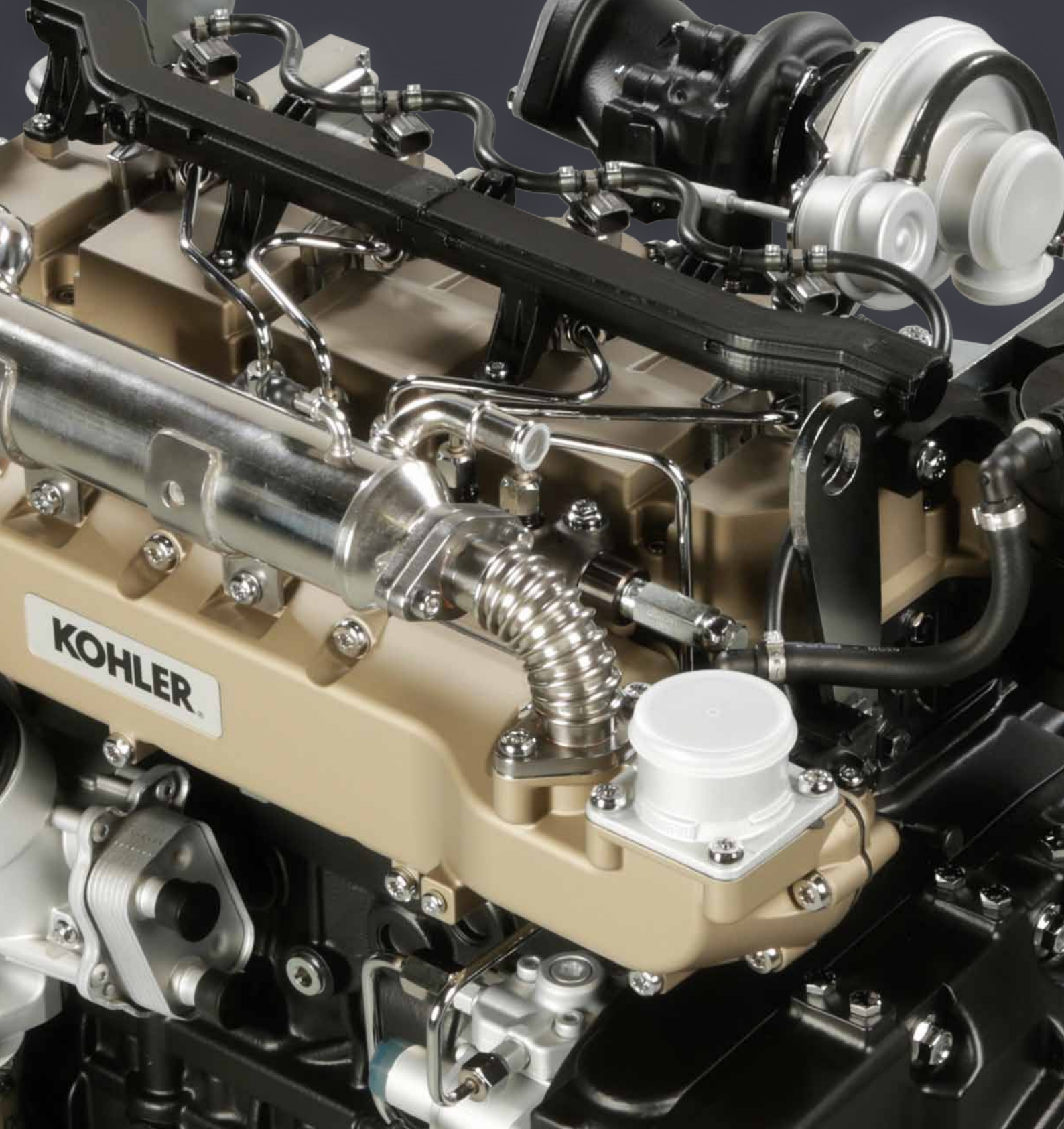
# TURBO COMMON RAIL ENGINES

## STANDARD EQUIPMENT

- Intake manifold
- Exhaust manifold
- Horizontal exhaust flange
- Lateral oil fill provision
- 3.2 kW electric starter
- 90A alternator
- SAE 3 (11" 1/2)
- Cabin heating provision
- Engine mounted oil filter
- Fuel filter with water sensor
- Environmentally friendly oil filter
- ECU
- Oil sump capacity 15.6 L







## ACCESSORIES ON DEMAND

Heavy Duty air cleaner

Downward exhaust flange

Hydraulic pump provision  
on 3rd and 4th PTO

120A alternator

Balancer shafts

Structural oil sump and bell  
housing

375 Nm Power take-off front  
PTO

# KDI 3404

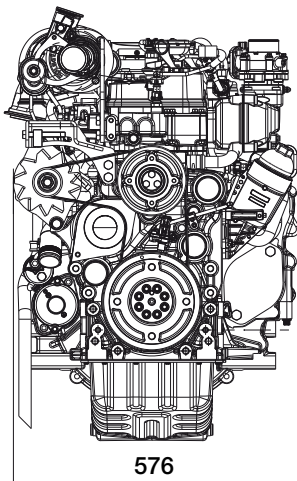
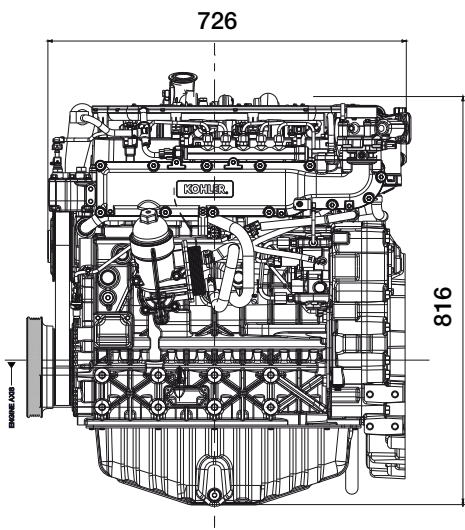
P < 56 kW



Quick specifications	KDI3404TCRU4	KDI3404TCNE5	KDI3404TC-E5
CYLINDERS / FIE	4 / Turbo Common Rail	4 / Turbo Common Rail	4 / Turbo Common Rail
MAX POWER kW (hp)@rpm	55.4 (74) @ 2200	55.4 (74) @ 2200	55.4 (74) @ 2200
MAX TORQUE Nm@rpm	375 @ 1400	430 @ 1200	330 @ 1400
EMISSION COMPLIANCE	EU STAGE III B US TIER 4 Final	EU STAGE V US TIER 4 Final	EU STAGE V US TIER 4 Final
KOHLER Flex Emissions Management system	U4 (EGR+DOC)	E5 (EGR+DOC+DPF)	E5 (EGR+DOC+DPF)
AFTERCOOLER	•	•	-

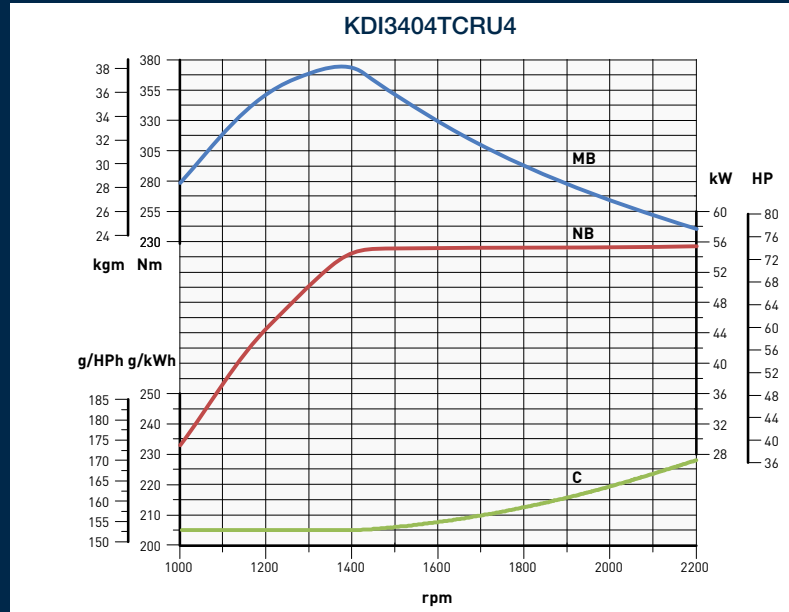
# DATA

Dimensions (mm)



# PERFORMANCE CURVES

(IFN-ACCORDING TO ISO 3046 and iso 14396)



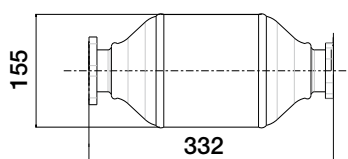
- MB - Torque curve IFN
- NB - Power curve IFN
- C - Specific fuel consumption - (NB curve)

Power ratings refer to engines equipped with air filter, standard muffler, after running-in period at ambient conditions of +25°C, relative humidity 30% and 1 bar. De-rating depending on applications.

# KOHLER Flex ENVELOPE

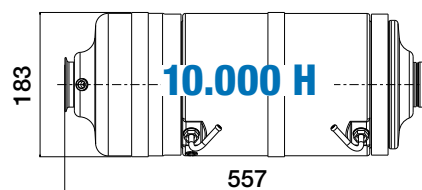
Dimensions (mm)

## Flex U4



**DOC**

## Flex E5



**DOC + DPF**



# KDI 3404

P > 56 kW



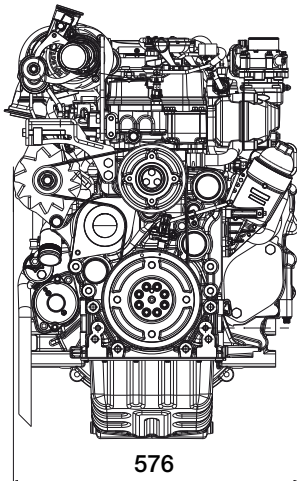
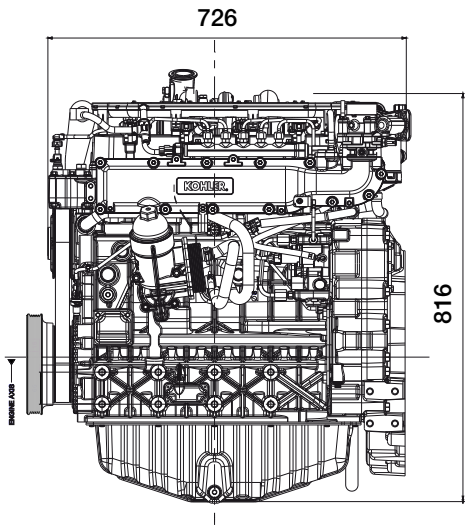
Quick specifications	KDI3404TCPC4	KDI3404TCSU4	KDI3404TCPE5
CYLINDERS	4 / Turbo Common Rail	4 / Turbo Common Rail	4 / Turbo Common Rail
MAX POWER kW (hp)@rpm	105 (141) @ 2200	100 (134) @ 2200	105 (141) @ 2200
MAX TORQUE Nm@rpm	500 @ 1400	500 @ 1400	640 @ 1400
EMISSION COMPLIANCE	CHINA 4**	EU STAGE IV US TIER 4 Final	EU STAGE V US TIER 4 Final
KOHLER Flex Emissions Management system	C4 (EGR+DOC)	U4 (EGR+DOC+SCR)	E5 (DOC+DPF+SCR)
AFTERCOOLER	•	•	•

\*\* Indicative only. China 4 emissions limits under definition



# DATA

Dimensions (mm)



# PERFORMANCE CURVES

(IFN-ACCORDING TO ISO 3046 and iso 14396)



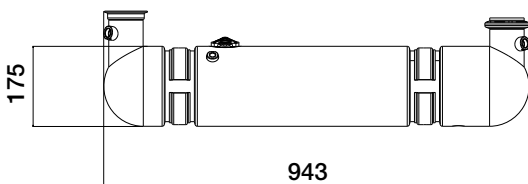
- MB - Torque curve IFN
- NB - Power curve IFN
- C - Specific fuel consumption - (NB curve)

Power ratings refer to engines equipped with air filter, standard muffler, after running-in period at ambient conditions of +25°C, relative humidity 30% and 1 bar. De-rating depending on applications.

# KOHLER Flex ENVELOPE

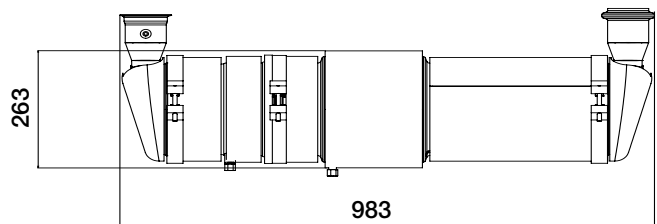
Dimensions (mm)

## FlexU4



**DOC + SCR**

## FlexE5



**DOC + DPF + SCR**

# KDI 3404TCR >56 Kw

Other power setting available

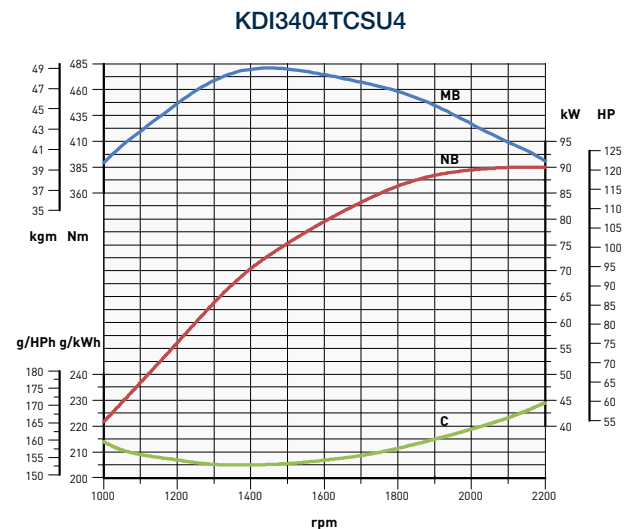
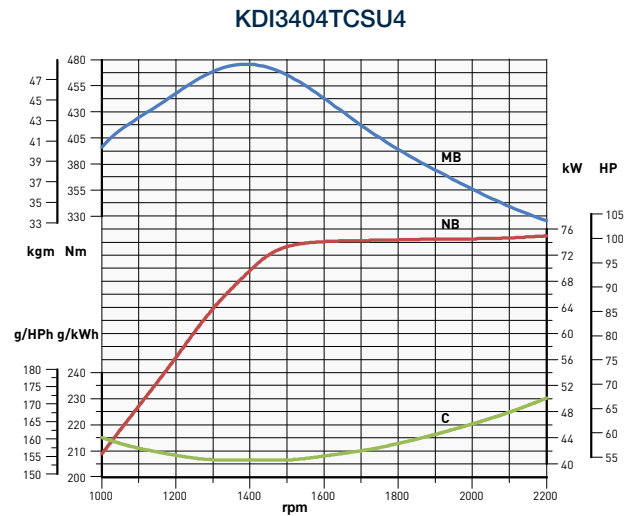
Quick specifications	KDI3404TCSU4	KDI3404TCSE5
CYLINDERS	4	4
MAX POWER [kW (hp)@rpm] @ 2200	75 (102)*	75 (102)*
MAX TORQUE [Nm@rpm] @1400	475	475
EMISSION COMPLIANCE	EU STAGE IV US TIER 4 Final	EU STAGE V US TIER 4 Final
KOHLER Flex™ Emissions Management system	U4 (EGR+DOC+SCR)	E5 (EGR+DOC+ DPF+SCR)
AFTERCOOLER	●	●

\* available also at 81 kW / 108 hp

Quick specifications	KDI3404TCSU4	KDI3404TCSE5
CYLINDERS	4	4
MAX POWER [kW (hp)@rpm] @ 2200	90 (122)	90 (122)
MAX TORQUE [Nm@rpm] @1400	480	480
EMISSION COMPLIANCE	EU STAGE IV US TIER 4 Final	EU STAGE V US TIER 4 Final
KOHLER Flex™ Emissions Management system	U4 (EGR+DOC+SCR)	E5 (EGR+DOC+ DPF+SCR)
AFTERCOOLER	●	●

## PERFORMANCE CURVES

(IFN-ACCORDING TO ISO 3046  
and iso 14396)



Power ratings refer to engines equipped with air filter, standard muffler, after running-in period at ambient conditions of +25°C, relative humidity 30% and 1 bar. De-rating depending on applications.

- MB - Torque curve IFN
- NB - Power curve IFN
- C - Specific fuel consumption - (NB curve)

# TURBO COMMON RAIL ENGINES



Model		KDI3404 P < 56 kW			KDI3404 P > 56 kW			
Engine specs	4 stroke diesel with cylinder in line	•			•			
	Liquid cooling	•			•			
	4 valves per cylinder	•			•			
	In crankcase camshaft, gear train driven	•			•			
	Pushrod - rocker arms timing with hydraulic tappets	•			•			
	Cast iron crankcase with bed-plate	•			•			
	Cast iron cylinder heads	•			•			
	Closed crankcase ventilation system	•			•			
Technical features	Cylinder	4			4			
	Bore (mm)	96			96			
	Stroke (mm)	116			116			
	Engine displ (cm <sup>3</sup> )	3359			3359			
	Injection system	DI			DI			
	Injection Equipment	Turbo high pressure common rail			Turbo high pressure common rail			
	Aftercooler	•	•	-	•	•	•	
Performance	Max power (IFN - ISO 3046 and ISO 14396) [kW(hp)@rpm] @ 2200	55.4 (74)	55.4 (74)	55 (74)	105 (141)	100 (134)	105 (141)	
	Max torque (IFN - ISO 3046 and ISO 14396) (Nm@ rpm)	375 @ 1400	430 @ 1200	330 @ 1400	500 @ 1400	500 @ 1400	640 @ 1400	
	Low-end torque (Nm@1000 rpm)	278	278	278	278	412	412	
KOHLER Flex™ Emissions Management system	KOHLER Flex™ solution	U4	E5	E5	C4	U4	E5	
	EGR	•	•	•	•	•	-	
	DOC	•	•	•	•	•	•	
	DPF	-	•	•	-	-	•	
	SCR	-	-	-	-	•	•	
	Emission compliance	EU STAGE III B US TIER 4 Final	EU STAGE V US TIER 4 Final	EU STAGE V US TIER 4 Final	CHINA 4**	EU STAGE IV US TIER 4 Final	EU STAGE V US TIER 4 Final	
Fuel economy	Best point (g/kWh)	205			205			
	Max power (g/kWh@2400 rpm)	229			230			
Startability	Unaided (°C)	down to -20			down to -20			
	Aided* (°C) [Manifold grid heater]	below -20			below -20			
Fuel compatibility	EN 590	•			•			
	No 1 Diesel (US) - ASTM D 975-09 B - Grade 1-D S 15	•			•			
	No 2 Diesel (US) - ASTM D 975-09 B - Grade 2-D S 15	•			•			
	Arctic EN 590/ASTM D 975-09 B (No petroleum added)	•			•			
Service features	Oil/filter change interval std/synthetic (hr)	500-750*			500-750*			
	Valve adjustment	-			-			
	Alternator belt replacement	36 mth			36 mth			
	Coolant change	24mth			24mth			
	Oil consumption (% fuel)	<0.1			<0.1			
Physical characteristics	H x L x W (fan excluded) (mm)	816 x 726 x 576			816 x 726 x 576			
	Weight (kg)	394			394			
	Daily service points - positions	1 side service			1 side service			
	Ambient operating temps (°C)	-40 to +50			-40 to +50			
	Gradeability-all round (continous) (deg)	40°			40°			
	Gradeability-all round (intermittent-1min) (deg)	45°			45°			
Lubrication	Oil type	SAE 5W30 low SAPS / API CJ-4 / ACEA E6 E7 E9			SAE 5W30 low SAPS / API CJ-4 / ACEA E6 E7 E9			
Vibration	Max engine excitation at mounting locations	5g			5g			
Auxiliary PTOs (3rd & 4th) (optional)		3°PTO		4°PTO		3°PTO		4°PTO
	Max torque (Nm)	200		250		200		250
	Drive ratio	1:1.13		1:1		1:1.13		1:1
	Provision for hydraulic pump	SAE A		SAE B		SAE A		SAE B

\* according to operating conditions

**EUROPE**

Lombardini Srl  
Via Cav. del lavoro  
A. Lombardini n° 2  
42124 Reggio Emilia, ITALY  
T. +39-(0)522-389-1  
infodiesel@kohler.com

**DEUTSCHLAND**

Lombardini Motoren GmbH  
Fritz-Klatte-Str. 6, Bürogebäude 2  
65933 Frankfurt am Main,  
DEUTSCHLAND  
T. +49-(0)69-9508160  
de.infodiesel@kohler.com

**UK**

Lombardini U.K. Ltd  
1, Rochester Barn - Eynsham Road  
OX2 9NH  
Oxford, UK  
T. +44-(0)1865-863858  
uk.infodiesel@kohler.com

**ESPAÑA**

Lombardini ESPAÑA, S.L.  
P.I. Cova Solera 1-9  
08191 - Rubí (Barcelona)  
ESPAÑA  
T. +34-(0)9358-62111  
es.infodiesel@kohler.com

**FRANCE**

Lombardini France S.a.s.  
47 Allée de Riottier,  
69400 Limas, FRANCE  
T. +33-(0)474-626500  
fr.infodiesel@kohler.com

**ROAPAC**

Kohler Singapore Pte Ltd  
(Kohler Power Systems)  
7 Jurong Pier Road  
SINGAPORE 619159  
T. +65-63020701  
Sgsalesall@kohler.com

Lombardini s.r.l. is a company of Kohler Group and has manufacturing facilities in Italy, Slovakia and India and sales subsidiaries in France, Germany, UK, Spain and Singapore. Kohler reserves the right to make modifications without prior notice. For the latest version please visit our website:

**KOHLERENGINES.COM/EU**

**KOHLER**  
IN POWER. SINCE 1920.