

E-TVCS

Technology for the clean age.

Kubota's proprietary TVCS (Three Vortex Combustion System) obtains an optimum air/fuel mixture by generating three intense swirling air flows (vortexes) within the spherical-combustion (swirl) chamber. The New TVCS added a special concave recess on the piston head to force compression air in the swirl chamber and to smooth combustion gas exhaust.

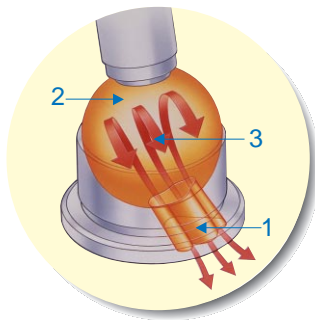
The E-TVCS, based on the New TVCS, is aimed at a drastic emission reduction.

To obtain even better combustion efficiency, an E-TVCS with a tapered injection throat is used in the 03-M models.

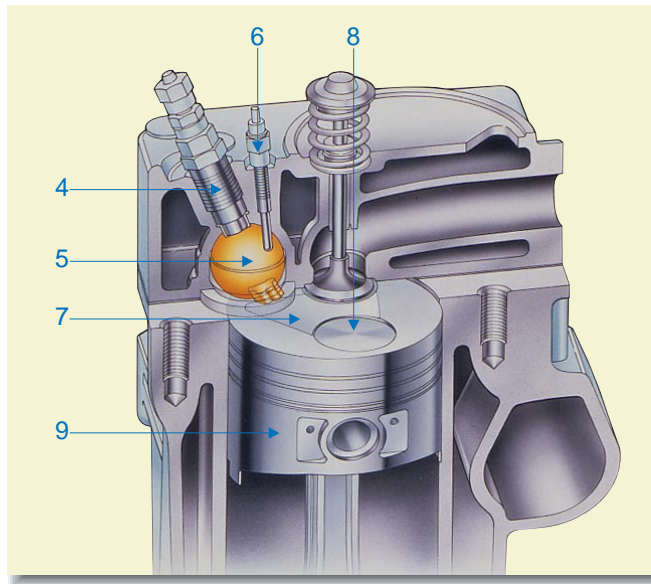
E-TVCS (IDI)

E-TVCS produces far less soot, HC and CO thanks to a better match between the injection nozzle throat and the concave recess on the piston head.

The injection pump and nozzle are better matched with the combustion chamber to reduce NOx emission.



1. Throat of Combustion Chamber
2. Combustion Chamber
3. Three Vortex
4. Injection Nozzle
5. Combustion Chamber
6. Glow Plug
7. Recess Concave
8. Valve Recess
9. Piston

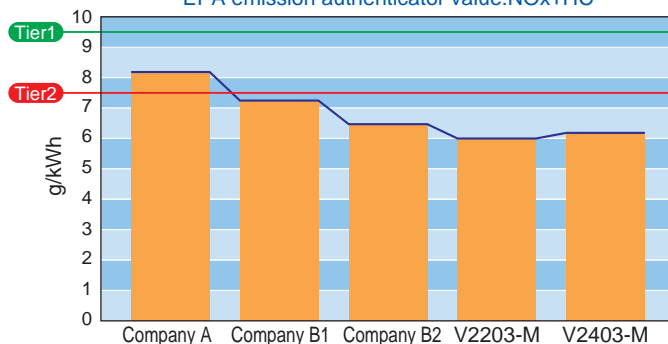


Emission Data

Has the capability of meeting and passing future EPA regulations.

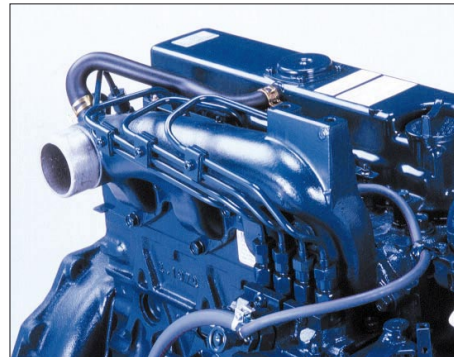
Emission Comparison

EPA emission authenticator value: NOx+HC



Closed Breather System

All models except the turbo (V2003-M-T) are equipped with a closed breather system.



Mild Noise & Lower Vibration

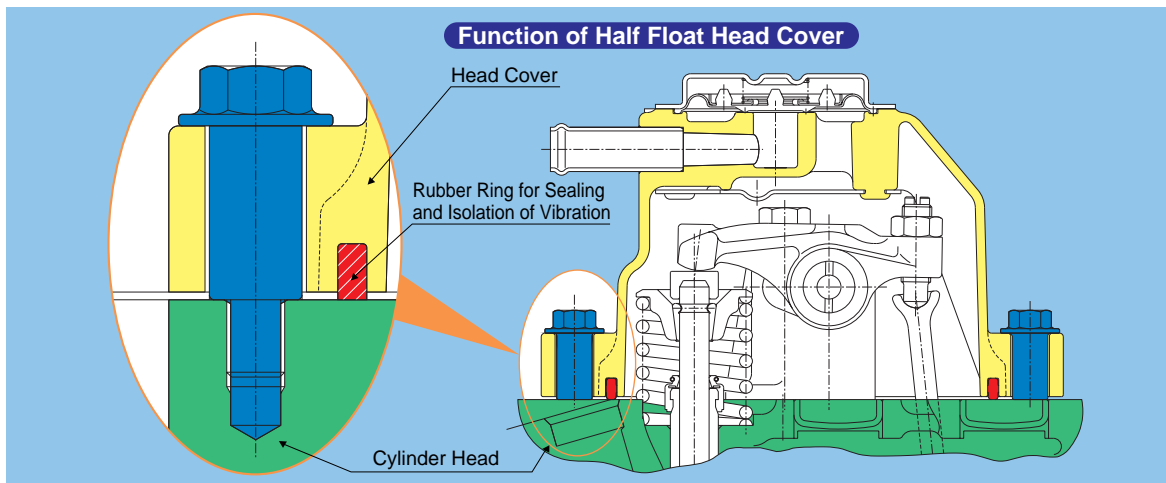
Comfort at work.

In order to improve the already well established lower noise and vibration levels of the existing engines, Kubota added a half float head cover, a MoS₂ coated piston, and a dual dynamic balancer (option) to the new series.

As a result, the noise level is 1-2 dBA lower than conventional models in the same class. The engine noise itself has been reduced to eliminate discomfort to the operator and the surrounding environment.

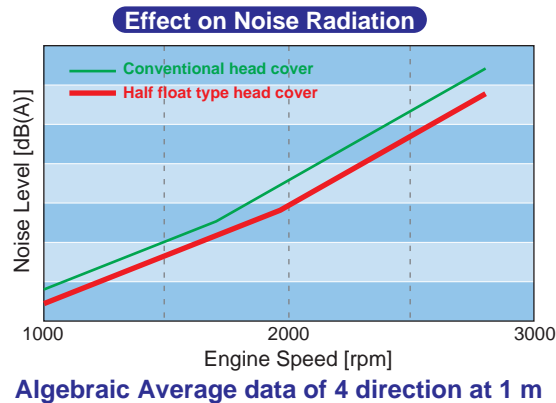
Half Float Head Cover

The rubber ring seals and isolates vibration, and reduces the noise from the crankcase.



Effect on Noise Radiation

Decreases the noise level by 1-2 dB compared to a conventional rigid mount.



MoS₂ Coated Piston

Sulfurated molybdenum coating enables clearance reduction between the piston and the cylinder liner, thus optimizing the oval ratio and decreasing the slapping noise.



Dual Dynamic Balancer

Reduces the engine's vibration level even further (option)

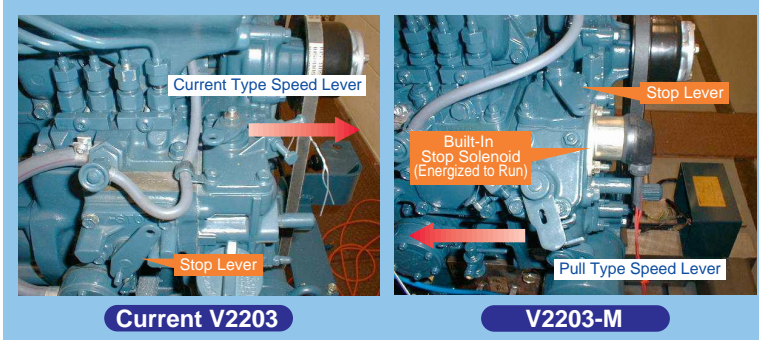
Mounting Convenience

Highly adaptable to fit most equipment

The highly adaptable 03-M series offer customers greater freedom with equipment selection. In addition to such convenient features as a built-in stop solenoid, a wire-holder, revised speed lever and a low fan center, customers can select the oil filter position to match their needs. Moreover, thanks to the one-side maintenance design, it is much easier to perform everyday maintenance and check ups.

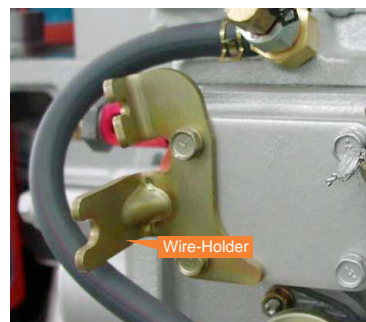
Built-In Stop Solenoid

Improves the operation's reliability.



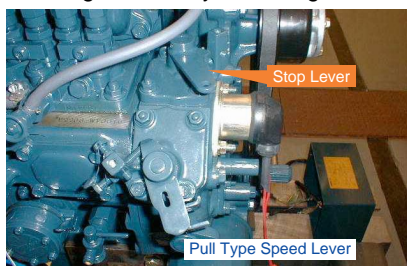
Wire-Holder

Standard wire-holder simplifies the cable installation.



Pull-Type Speed Lever

The direction of speed control lever is changed for easy mounting.



One-Side Maintenance

All parts are located on one side of the engine for easy access and service.

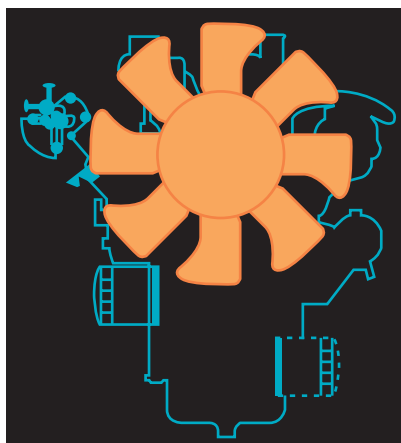


Lower Fan Height

The fan height is 25 mm lower than conventional models.

Selectable Oil Filter Position

The oil filter position is available on either the right or the left side.



Durability & Reliability

Attention to detail prolongs superb engine performance.

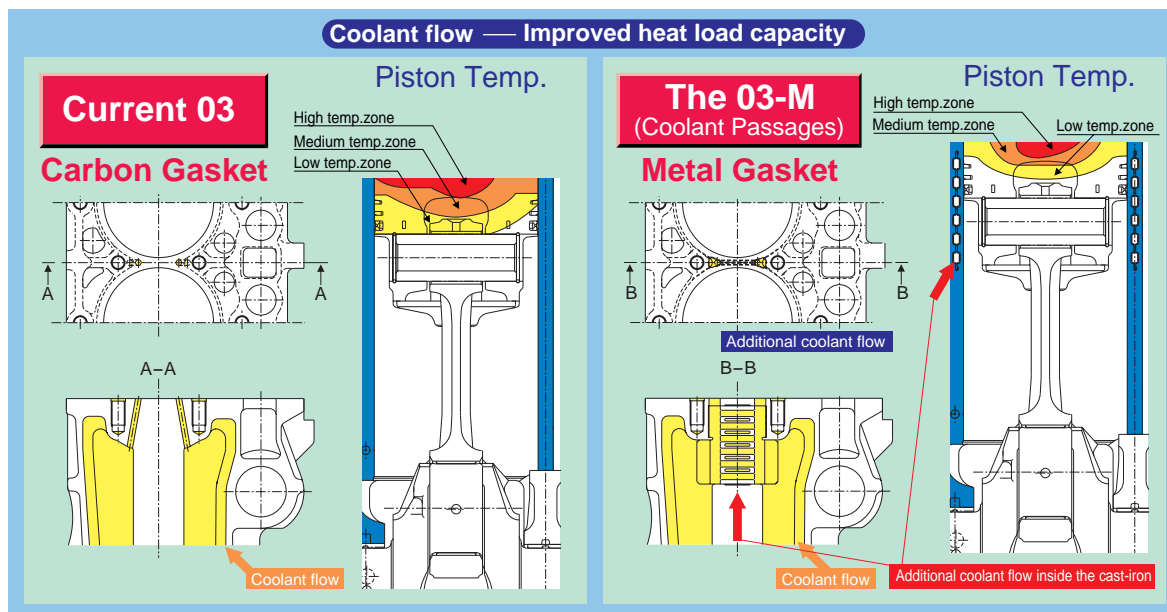
A combination of the newly designed coolant passages and a thermostat with a bottom by-pass valve, ensures better piston cooling efficiency.

When the coolant temperature reaches the thermostat opening temperature, the bottom by-pass valve will completely close the coolant-circuit to the by-pass line, thus preventing damage to the engine.

These new features in greater reliability and increased durability.

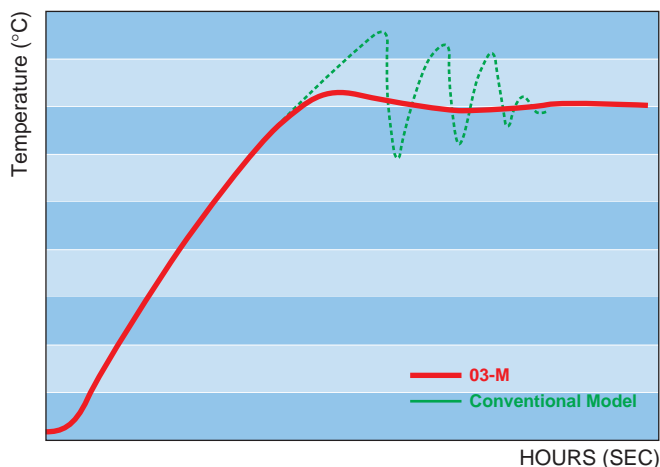
Coolant Passages

The improved cooling course suppresses the piston-top-ring groove's temperature by 25 degrees C.



Thermostat with a Bottom By-pass Valve

Increases the coolant-circuit to Radiator by 5%.



Seamless output range

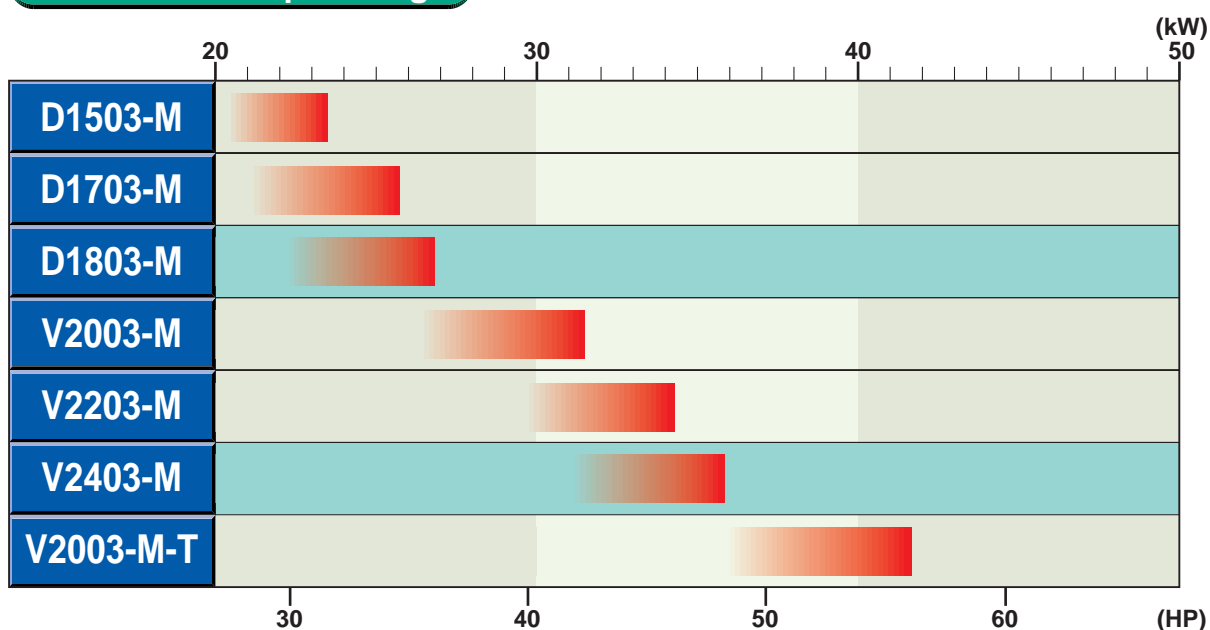
Enhanced lineup to meet most any need

The 03-M IDI model lineup (including the turbo type) is enhanced with a wide displacement range (1.5L to 2.4L), and a varied output range (23.5 kW to 41.8 kW).

All these models exhibit a higher output than comparable engines in the same class.

In addition to these indirect injection models, direct injection models are also available to choose from.

03-M Series Output Range



※DI models will be available soon.



Options

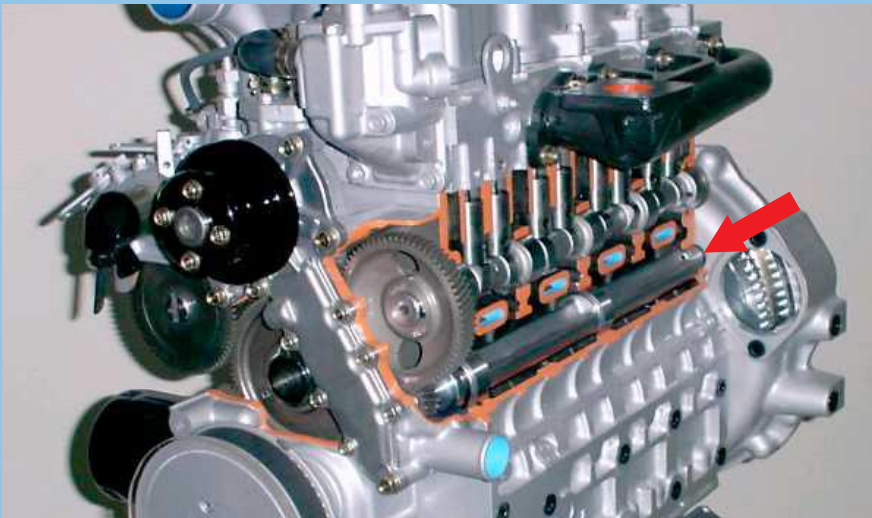
A selection to help you and your equipment

Customize your equipment with 03-M series options.

Whatever the specification is and wherever it is used, these options can improve and bring out your equipment's best performance.

Dual Dynamic Balancer

Reduces the engine's vibration level even further (option)

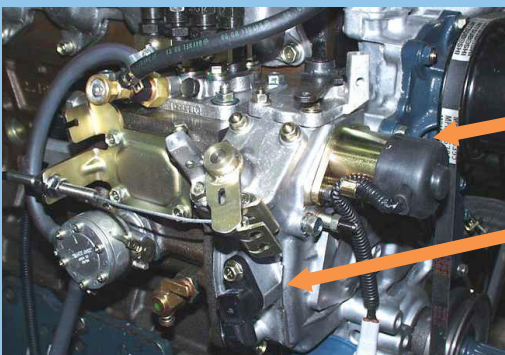


Electronic Governor

Can be used instead of the factory installed mechanical governor.

Meets the same emission compliance as the current mechanical governor.

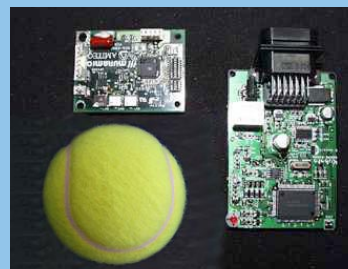
Engine



Actuator
Proportional Solenoid
compatible with engine Stop
Solenoid

Engine Speed Sensor

Controller

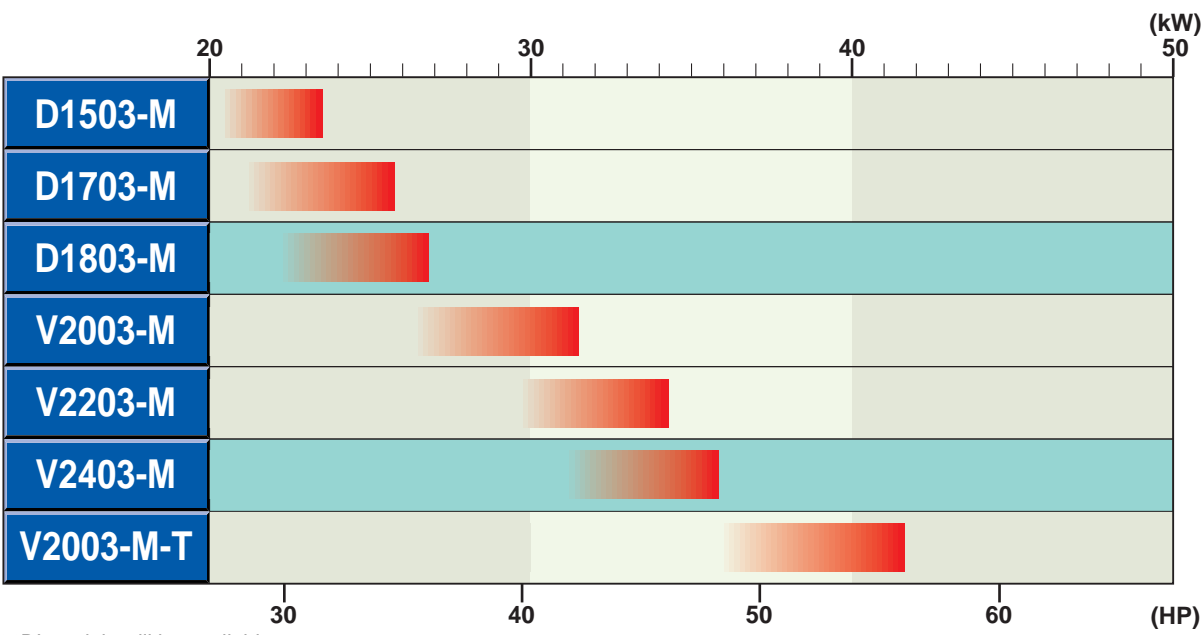


Small-sized
L 95mm x W 68mm

Starter Safety System




Prevents the starter from engaging again after the engine starts up.





Output Range



※DI models will be available soon.

Specifications

Model					
Cylinders			3		
Bore x Stroke		mm (in.)	83{3.27}x92.4{3.64}	87{3.43}x92.4{3.64}	87{3.43}x102.4{4.03}
Displacement		L (cu.in.)	1.499(91.47)	1.647(100.5)	1.826(111.4)
Combustion / Intake system			E-TVCS,NA		
Cooling system			Liquid-Cooled		
Starter		V-kW	12-1.4	12-1.4	12-2.0
Speed		rpm	2800	2800	2600
Output	Gross intermittent		24.9{33.4}{33.9}	27.4{36.7}{37.3}	28.4{38.1}{38.6}
	Net intermittent	kW{HP}{PS}	23.5{31.5}{32.0}	25.7{34.5}{35.0}	26.9{36.0}{36.5}
	Net continuous		20.4{27.3}{27.7}	22.4{30.0}{30.4}	23.3{31.3}{31.7}
Dimensions	Length	mm (in.)	572.1 (22.5)	572.1 (22.5)	575.9 (22.7)
	Width	mm (in.)	499.0 (19.6)	499.0 (19.6)	499.0 (19.6)
	Height1	mm (in.)	643.0 (25.3)	643.0 (25.3)	684.0 (26.9)
	Height2	mm (in.)	229.3 (9.0)	229.3 (9.0)	265.5 (10.5)
Dry Weight		kg (lb)	148.0 (326.3)	148.0 (326.3)	151.0 (332.9)

Model						
Cylinders			4			
Bore x Stroke		mm (in.)	83{3.27}x92.4{3.64}	87{3.43}x92.4{3.64}	87{3.43}x102.4{4.03}	83{3.27}x92.4{3.64}
Displacement		L (cu.in.)	1.999(122.0)	2.197(134.1)	2.434(148.5)	1.999(122.0)
Combustion / Intake system			E-TVCS,NA			E-TVCS,Turbo
Cooling system			Liquid-Cooled			
Starter		V-kW	12-1.4		12-2.0	12-1.4
Speed		rpm	2800	2800	2600	2800
Output	Gross intermittent		33.2{44.5}{45.1}	36.4{48.8}{49.5}	38.0{51.0}{51.7}	44.0{59.0}{59.8}
	Net intermittent	kW{HP}{PS}	31.6{42.4}{43.0}	34.3{46.0}{46.7}	35.8{48.0}{48.7}	41.8{55.3}{56.1}
	Net continuous		27.2{36.5}{37.0}	29.8{40.0}{40.5}	31.1{41.7}{42.3}	36.3{47.5}{48.2}
Dimensions	Length	mm (in.)	667.1 (26.3)	667.1 (26.3)	670.9 (26.4)	667.1 (26.3)
	Width	mm (in.)	499.0 (19.6)	499.0 (19.6)	499.0 (19.6)	499.0 (19.6)
	Height1	mm (in.)	634.5 (25.0)	634.5 (25.0)	684.0 (26.7)	672.5 (26.5)
	Height2	mm (in.)	221.0 (8.7)	221.0 (8.7)	265.5 (10.5)	221.0 (8.7)
Dry Weight		kg (lb)	180.0(396.9)	180.0(396.9)	184.0(405.7)	184.0(405.7)

*Specifications are subject to change without notice.

*Dry weight is according to Kubota's standard specifications.

***Gross Intermittent:** 1-hour rating based on engine without cooling fan, air cleaner and muffler, with alternator (Idling). (SAE J1995)

***Net Intermittent:** 1-hour rating based on engine with standard cooling fan, air cleaner, muffler, and alternator (Idling). (SAE J1346, ISO 3046 IFN)

***Net Continuous:** Continuous rating based on engine with standard cooling fan, air cleaner, muffler, and alternator (Idling). (ISO 3046 IC15N)

***Atmospheric Condition:** Ambient temperature 25°C, Relative humidity 30%, Barometric pressure 750 mm Hg (100 kPa)

***Conversion Formula:** HP=0.746 kW, PS=0.7355 kW

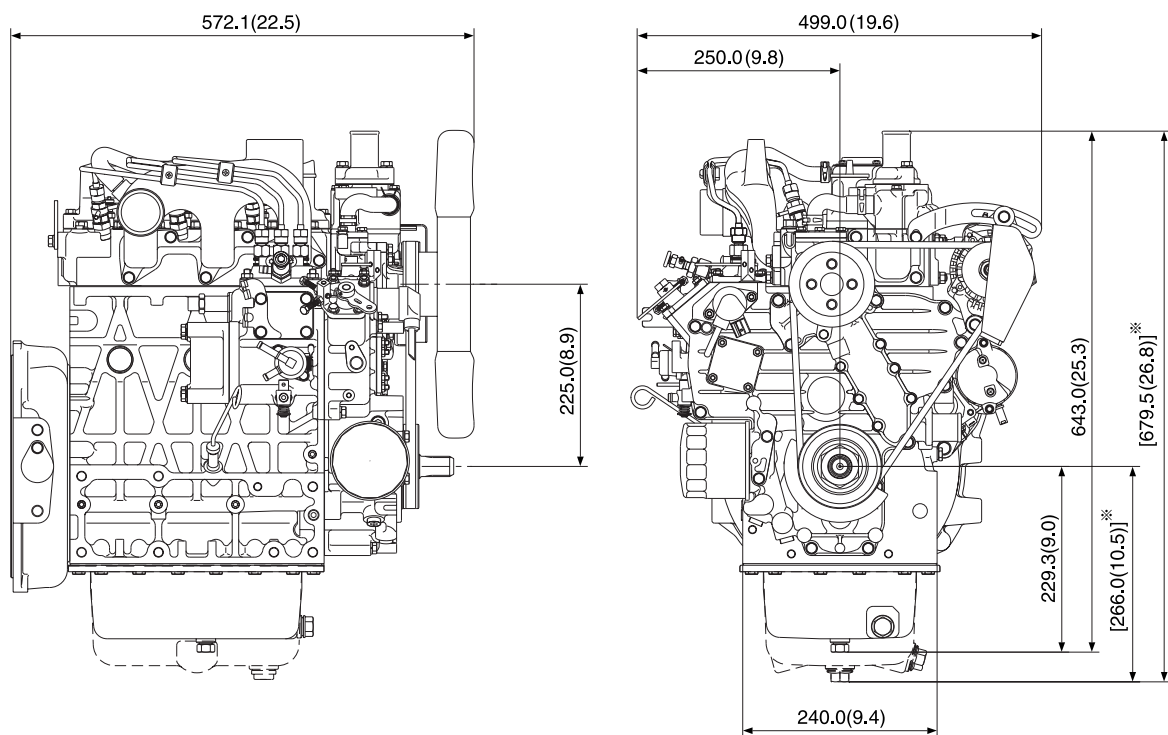
***Height 1 :** Overall Height

***Height 2 :** From crankshaft center to lower edge of engine.

D1503-M



Dimensions mm(in.)



※[]For EU

Specifications

Model		D1503-M
Cylinders		3
Bore x Stroke	mm (in.)	83{3.27}x92.4{3.64}
Displacement	L (cu.in.)	1.499 (91.47)
Combustion / Intake system		E-TVCS,NA
Cooling system		Liquid-Cooled
Starter		V-kW
Speed		rpm
Output	Gross intermittent	24.9{33.4}{33.9}
	Net intermittent	23.5{31.5}{32.0}
	Net continuous	20.4{27.3}{27.7}
Dimensions	Length	mm (in.)
	Width	mm (in.)
	Height1	mm (in.)
	Height2	mm (in.)
Dry Weight		kg (lb)

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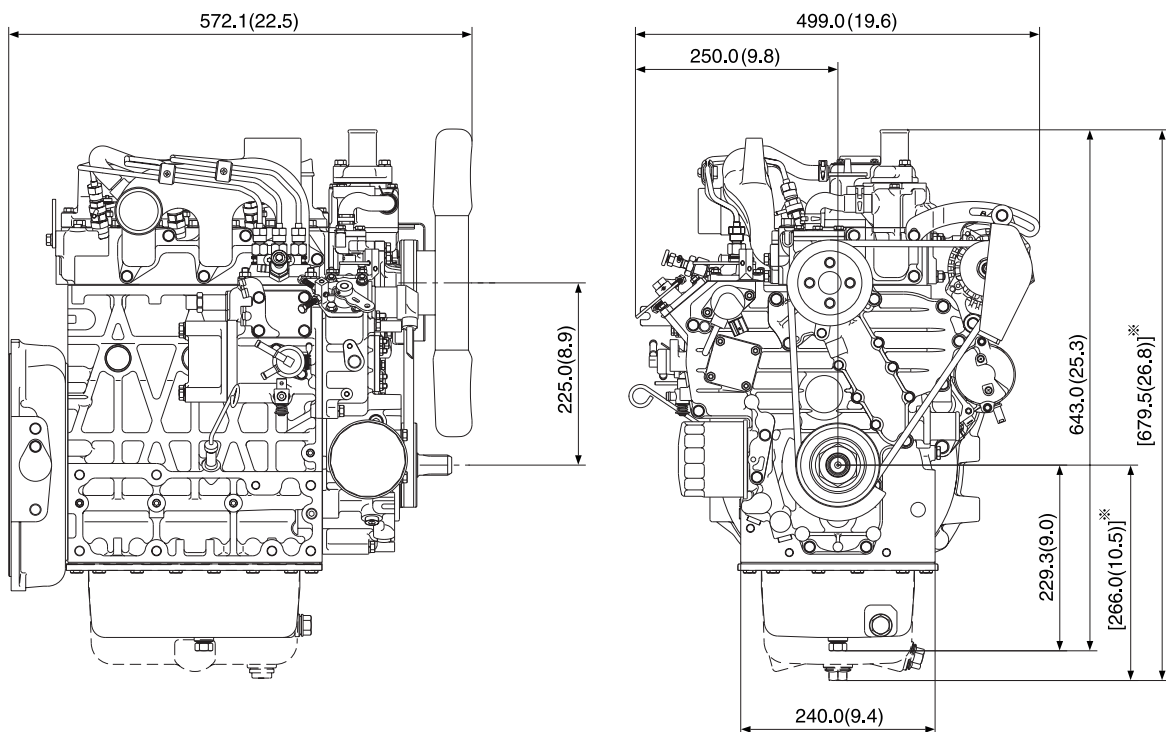
***Height 1** : Overall Height

***Height 2** : From crankshaft center to lower edge of engine.

D1703-M



Dimensions mm(in.)



※[] For EU

Specifications

Model			D1703-M
Cylinders			3
Bore x Stroke		mm (in.)	87{3.43}x92.4{3.64}
Displacement		L (cu.in.)	1.647 (100.5)
Combustion / Intake system			E-TVCS,NA
Cooling system			Liquid-Cooled
Starter		V-kW	12-1.4
Speed		rpm	2800
Output	Gross intermittent	kW {HP} {PS}	27.4 {36.7} {37.3}
	Net intermittent		25.7 {34.5} {35.0}
	Net continuous		22.4 {30.0} {30.4}
Dimensions	Length	mm (in.)	572.1 (22.5)
	Width	mm (in.)	499.0 (19.6)
	Height1	mm (in.)	643.0 (25.3)
	Height2	mm (in.)	229.3 (9.0)
Dry Weight		kg (lb)	148.0 (326.3)

*Specifications are subject to change without notice.

*Dry weight is according to Kubota's standard specifications.

***Gross Intermittent**: 1-hour rating based on engine without cooling fan, air cleaner and muffler, with alternator (Idling). (SAE J1995)

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***Net Continuous**: Continuous rating based on engine with standard cooling fan, air cleaner, muffler, and alternator (Idling). (ISO 3046 IC15N)

***Atmospheric Condition**: Ambient temperature 25°C, Relative humidity 30%, Barometric pressure 750 mm Hg (100 kPa)

***Conversion Formula**: HP=0.746 kW, PS=0.7355 kW

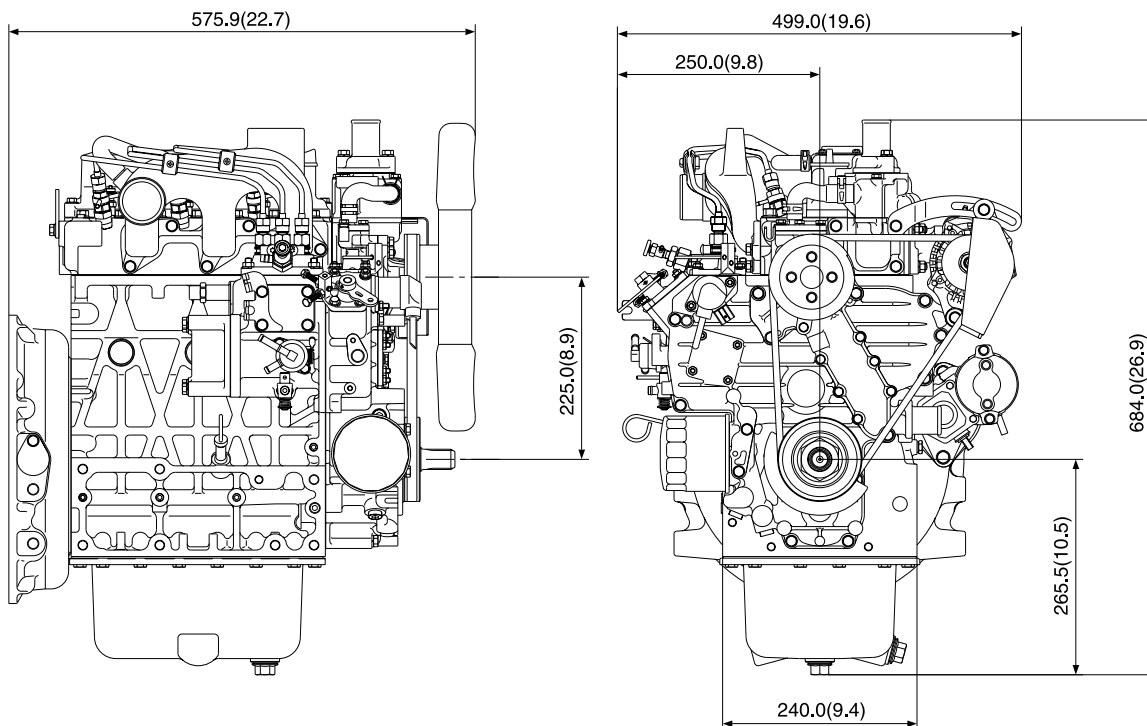
***Height 1** : Overall Height

***Height 2** : From crankshaft center to lower edge of engine.

D1803-M



Dimensions mm(in.)



Specifications

Model		D1803-M
Cylinders		3
Bore x Stroke	mm(in.)	87 {3.43} x 102.4 {4.03}
Displacement	L(cu.in.)	1.826 (111.4)
Combustion / Intake system		E-TVCS, NA
Cooling system		Liquid-Cooled
Starter		V-kW
Speed		rpm
Output	Gross intermittent	kW{HP}{PS}
	Net intermittent	
	Net continuous	
Dimensions	Length	mm(in.)
	Width	mm(in.)
	Height1	mm(in.)
	Height2	mm(in.)
Dry Weight		kg(lb)

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*Dry weight is according to Kubota's standard specifications.

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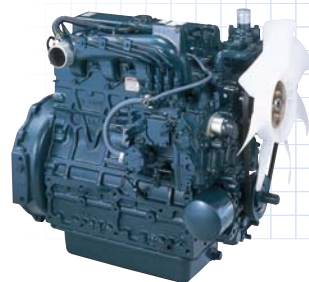
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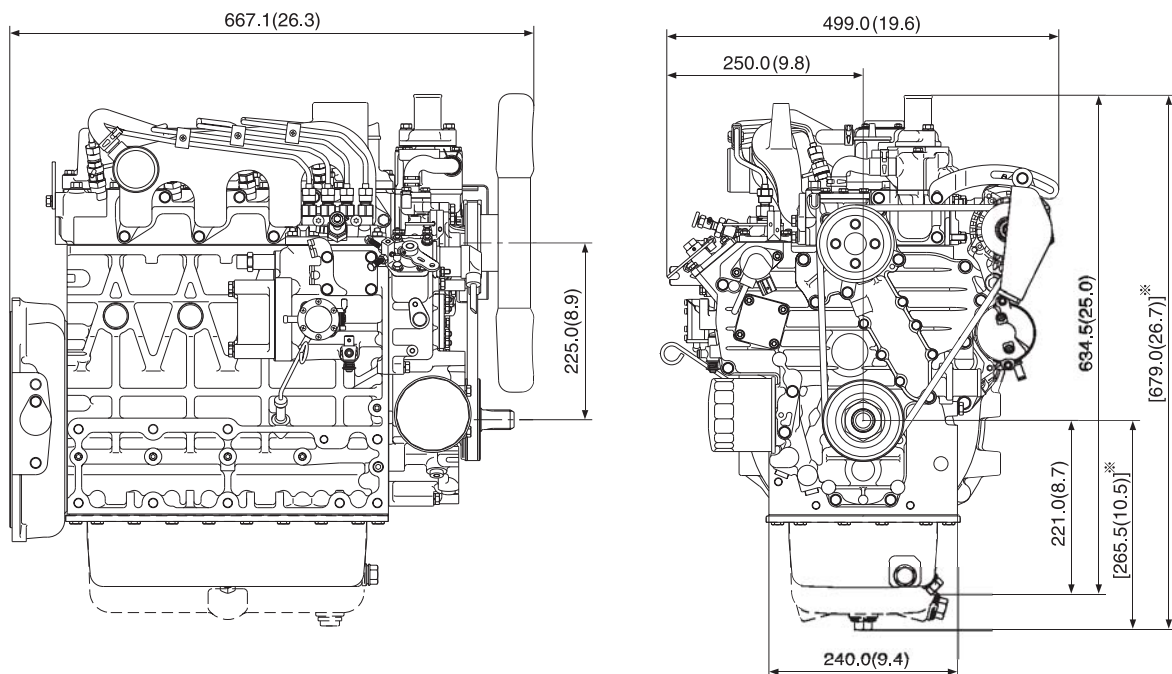
***Height 1** : Overall Height

***Height 2** : From crankshaft center to lower edge of engine.

V2003-M



Dimensions mm(in.)



※[]For EU

Specifications

Model		V2003-M
Cylinders		4
Bore x Stroke	mm (in.)	83 {3.27} x 92.4 {3.64}
Displacement	L (cu.in.)	1.999 (122.0)
Combustion / Intake system		E-TVCS, NA
Cooling system		Liquid-Cooled
Starter		V-kW
Speed		rpm
Output	Gross intermittent	33.2 {44.5} {45.1}
	Net intermittent	31.6 {42.4} {43.0}
	Net continuous	27.2 {36.5} {37.0}
Dimensions	Length	mm (in.)
	Width	mm (in.)
	Height1	mm (in.)
	Height2	mm (in.)
Dry Weight		kg (lb)

*Specifications are subject to change without notice.

*Dry weight is according to Kubota's standard specifications.

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***Net Continuous**: Continuous rating based on engine with standard cooling fan, air cleaner, muffler, and alternator (Idling). (ISO 3046 IC15N)

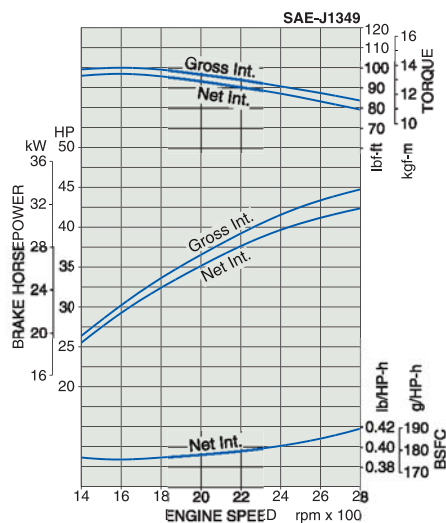
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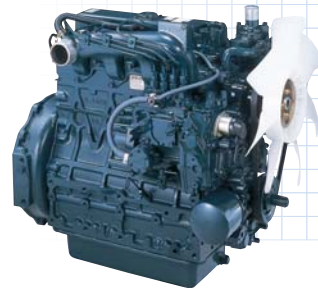
***Height 1** : Overall Height

***Height 2** : From crankshaft center to lower edge of engine.

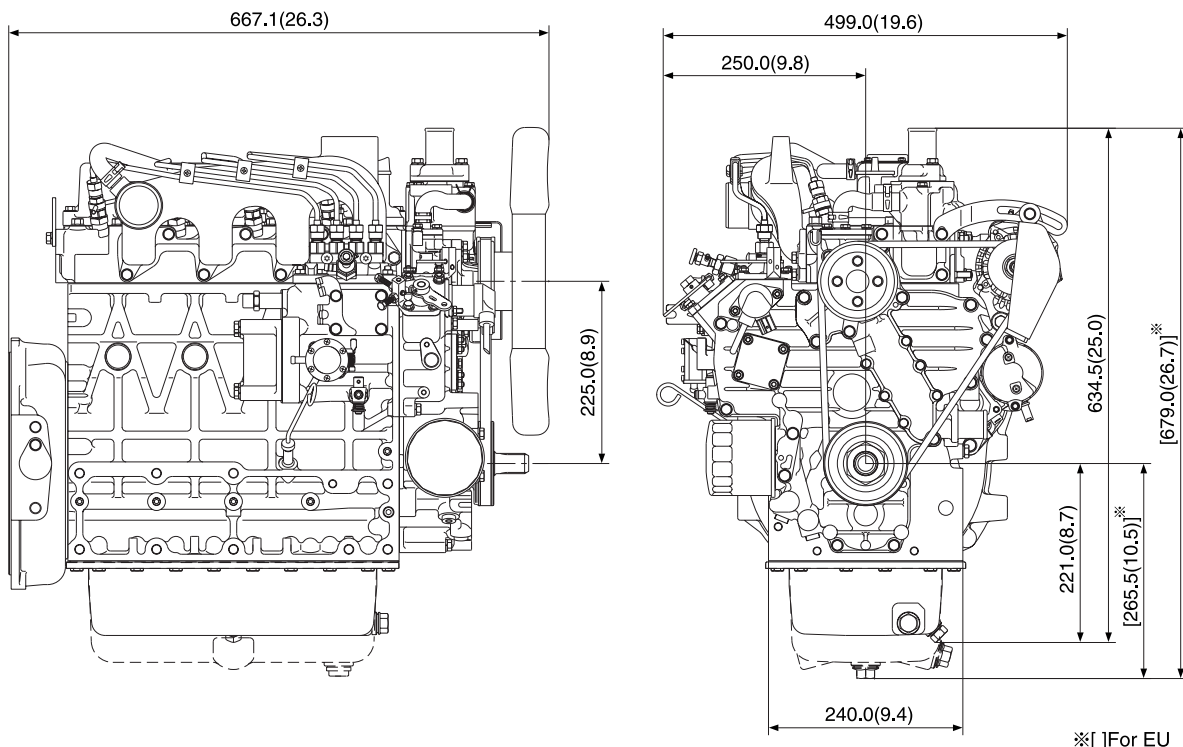
Performance Curve



V2203-M



Dimensions mm(in.)



Specifications

Model		V2203-M
Cylinders		4
Bore x Stroke	mm (in.)	87 {3.43} x 92.4 {3.64}
Displacement	L (cu.in.)	2.197 (134.1)
Combustion / Intake system		E-TVCS, NA
Cooling system		Liquid-Cooled
Starter		V-kW 12-1.4
Speed		rpm 2800
Output	Gross intermittent	kW {HP} {PS}
	Net intermittent	
	Net continuous	
Dimensions	Length	mm (in.) 667.1 (26.3)
	Width	mm (in.) 499.0 (19.6)
	Height1	mm (in.) 634.5 (25.0)
	Height2	mm (in.) 221.0 (8.7)
Dry Weight		kg (lb) 180.0 (396.9)

*Specifications are subject to change without notice.

*Dry weight is according to Kubota's standard specifications.

***Gross Intermittent:** 1-hour rating based on engine without cooling fan, air cleaner and muffler, with alternator (Idling). (SAE J1995)

***Net Intermittent:** 1-hour rating based on engine with standard cooling fan, air cleaner, muffler, and alternator (Idling). (SAE J1346, ISO 3046 IFN)

***Net Continuous:** Continuous rating based on engine with standard cooling fan, air cleaner, muffler, and alternator (Idling). (ISO 3046 IC15N)

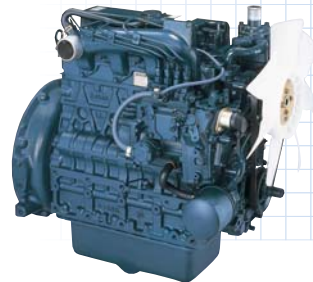
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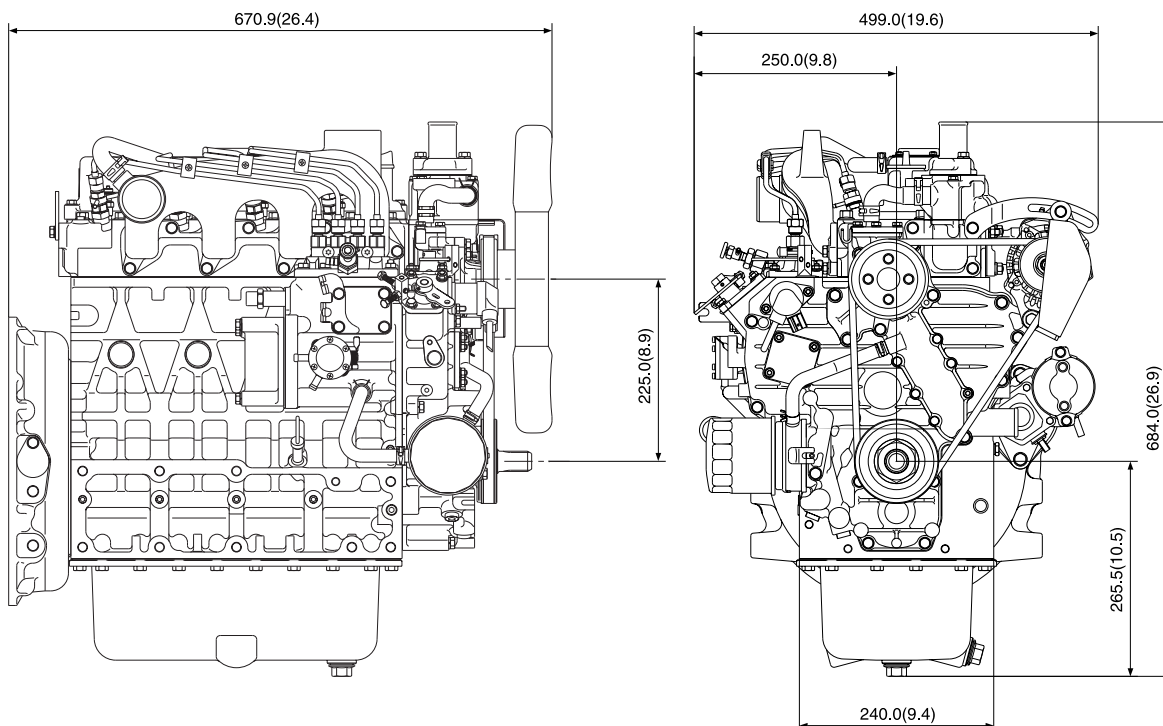
***Height 1 :** Overall Height

***Height 2 :** From crankshaft center to lower edge of engine.

V2403-M



Dimensions mm(in.)



Specifications

Model			V2403-M
Cylinders			4
Bore x Stroke		mm (in.)	87 {3.43} x 102.4 {4.03}
Displacement		L (cu.in.)	2.434 (148.5)
Combustion / Intake system			E-TVCS,NA
Cooling system			Liquid-Cooled
Starter		V-kW	12-2.0
Speed		rpm	2600
Output	Gross intermittent	kW {HP} {PS}	38.0 {51.0} {51.7}
	Net intermittent		35.8 {48.0} {48.7}
	Net continuous		31.1 {41.7} {42.3}
Dimensions	Length	mm (in.)	670.9 (26.4)
	Width	mm (in.)	499.0 (19.6)
	Height1	mm (in.)	684.0 (26.9)
	Height2	mm (in.)	265.5 (10.5)
Dry Weight		kg (lb)	184.0 (405.7)

*Specifications are subject to change without notice.

*Dry weight is according to Kubota's standard specifications.

***Gross Intermittent**: 1-hour rating based on engine without cooling fan, air cleaner and muffler, with alternator (Idling). (SAE J1995)

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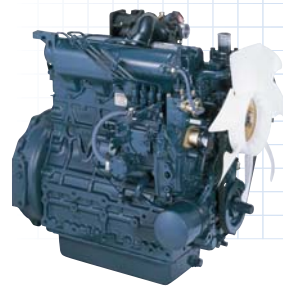
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***Conversion Formula**: HP=0.746 kW, PS=0.7355 kW

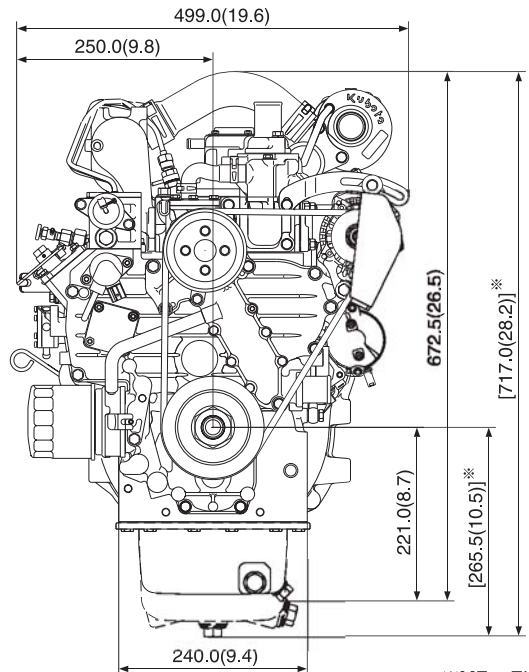
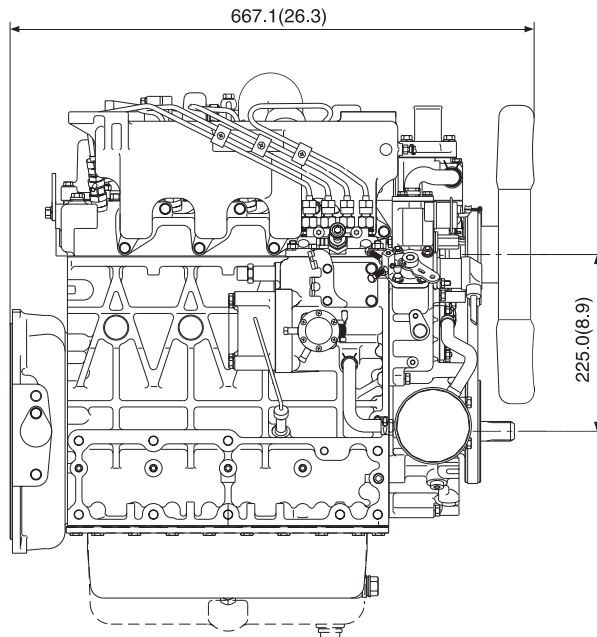
***Height 1** : Overall Height

***Height 2** : From crankshaft center to lower edge of engine.

V2003-M-T



Dimensions mm(in.)



※[]For EU

Specifications

Model		V2003-M-T
Cylinders		4
Bore x Stroke	mm (in.)	83 {3.27} x 92.4 {3.64}
Displacement	L (cu.in.)	1.999 (122.0)
Combustion / Intake system		E-TVCS, Turbo
Cooling system		Liquid-Cooled
Starter		V-kW
Speed		rpm
Output	Gross intermittent	44.0 {59.0} {59.8}
	Net intermittent	41.8 {55.3} {56.1}
	Net continuous	36.3 {47.5} {48.2}
Dimensions	Length	mm (in.)
	Width	mm (in.)
	Height1	mm (in.)
	Height2	mm (in.)
Dry Weight		kg (lb)

*Specifications are subject to change without notice.

*Dry weight is according to Kubota's standard specifications.

***Gross Intermittent**: 1-hour rating based on engine without cooling fan, air cleaner and muffler, with alternator (Idling). (SAE J1995)

***Net Intermittent**: 1-hour rating based on engine with standard cooling fan, air cleaner, muffler, and alternator (Idling). (SAE J1346, ISO 3046 IFN)

***Net Continuous**: Continuous rating based on engine with standard cooling fan, air cleaner, muffler, and alternator (Idling). (ISO 3046 IC15N)

***Atmospheric Condition**: Ambient temperature 25°C, Relative humidity 30%, Barometric pressure 750 mm Hg (100 kPa)

***Conversion Formula**: HP=0.746 kW, PS=0.7355 kW

***Height 1** : Overall Height

***Height 2** : From crankshaft center to lower edge of engine.

Performance Curve

