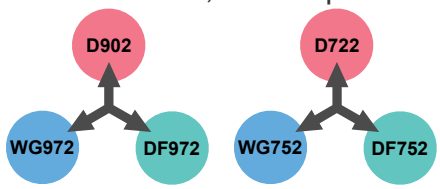
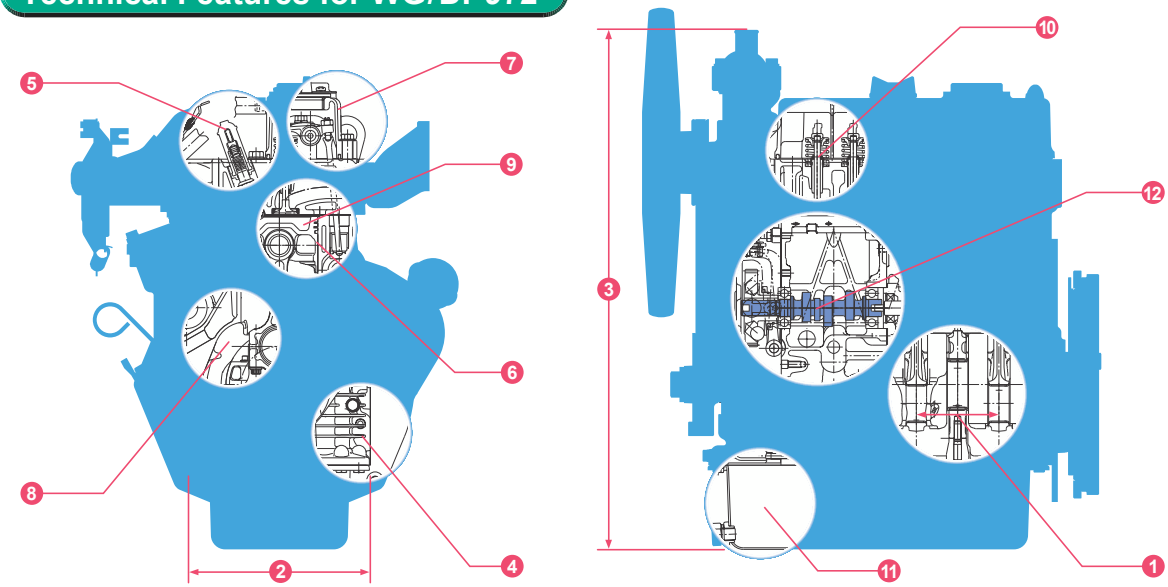
Introduction

Gasoline/LP Gas Engines that are as Tough as their Diesel counterparts

In 2003, Kubota added two new compact diesel engines, Z602 and D902, to its SUPER MINI Series. WG/DF752 and 972 are two dual fuel (gasoline, gasoline/LP Gas) type engines that are solidly based on this world acclaimed diesel engine series. Based on the new D902, the new WG/DF972 is exceptionally well made with such features as high power density, tough reliability, lower noise/vibration, and a special SI combustion chamber. To simplify maintenance, most engine parts are interchangeable with their diesel counterparts. The new WG/DF engines will meet and beat the toughest industrial challenges.



Technical Features for WG/DF972



Original Dual Fuel Carburetor

High Power Density

1. Cylinder pitch & Bore
2. Same width as WG/DF752
3. Lower engine height than WG/DF752

Tough Reliability

4. Gear case cooling fin
5. Digital ignition

Lower Noise &Vibration

6. MoS_2 coated piston
7. Half float valve cover
8. Increased the rigidity of the engine block

Clean Emission

9. Improved combustion chamber
10. Valve stem seal with spring

Others

11. Extended oil pan
12. Side PTO

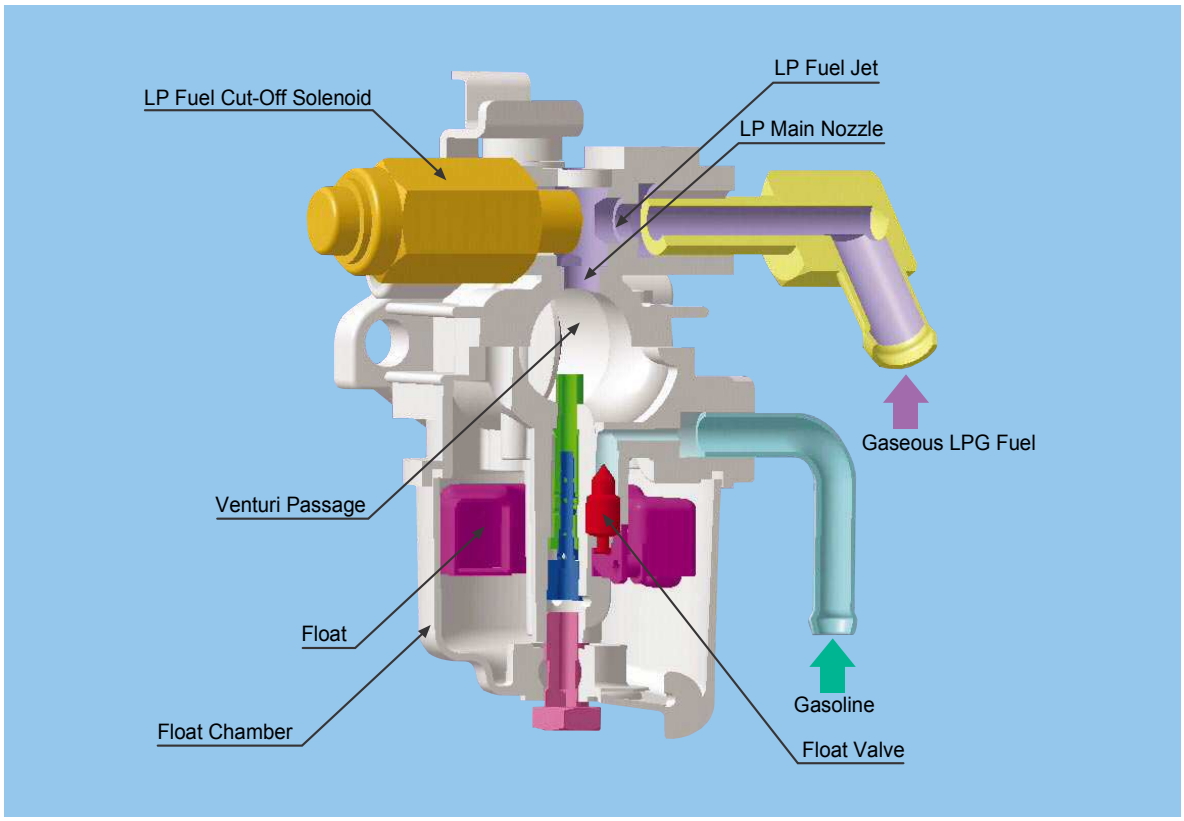
Original Dual Fuel Carburetor

Improved air-intake

Until now, dual fuel carburetors had to have an LP Gas mixer attached onto the front of the gasoline carburetor. Our new U.S. patented dual fuel carburetor has the mixer already built in. Kubota improved the air-intake rate and the overall engine performance by attaching a gasoline nozzle and an LP Gas nozzle to the venturi passage.

Kubota original Dual Fuel Carburetor

U.S. Patent No. 5809979



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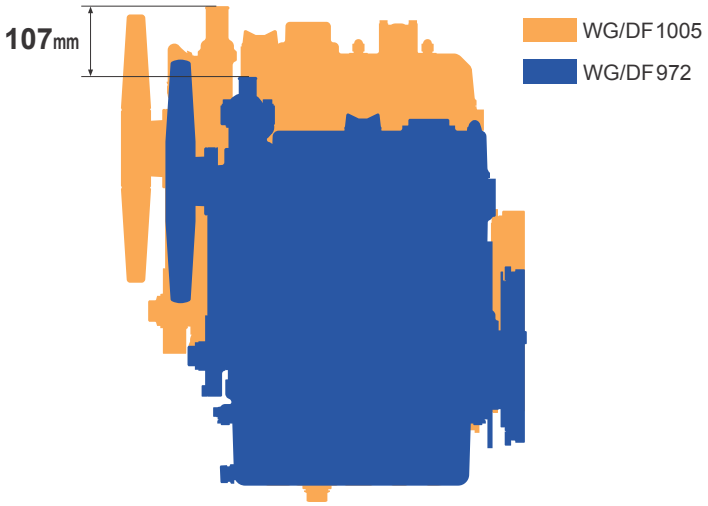
High Power Density

Smaller Yet More Powerful

The engine width of the WG/DF972 is the same as that of the WG/DF752. However, the larger cylinder pitch (72→80 mm) and bore size (ø68→ø74.5) provide the WG/DF972 with 35% more power. Its height is 107mm lower than the current WG/DF1005, yet it displays a 36% increase in power density over the WG/DF1005. All these features resulted in a more compact, more powerful, and more flexible engine to match OEM applications.

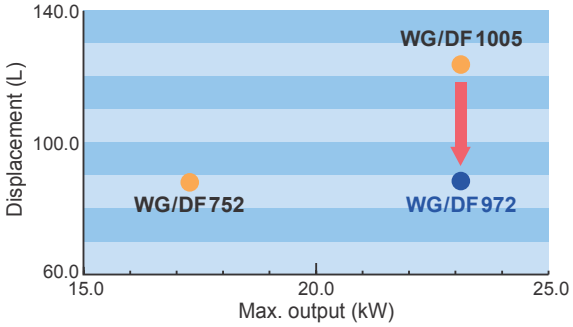
Height Comparison against WG/DF1005

The new WG/DF972 has the same output power as the current WG/DF1005 (23.1/22.0 kW [31.0/29.5 HP/3600 rpm],) yet the WG/DF972 is 107mm lower in height and 55mm shorter in length than the WG/DF1005.

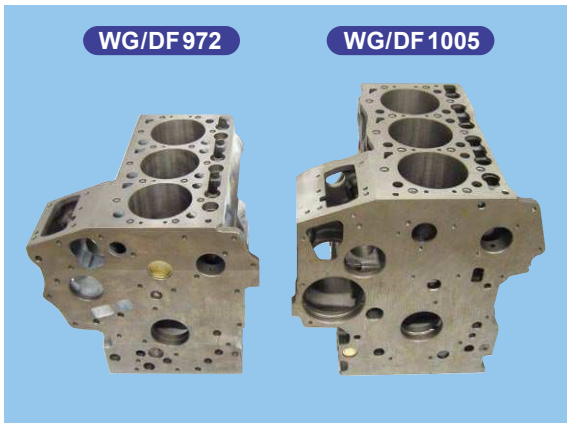


Power density comparison vs. the WG/DF1005

WG/DF 972's power density is 36% greater than the WG/DF1005



Crankcase comparison

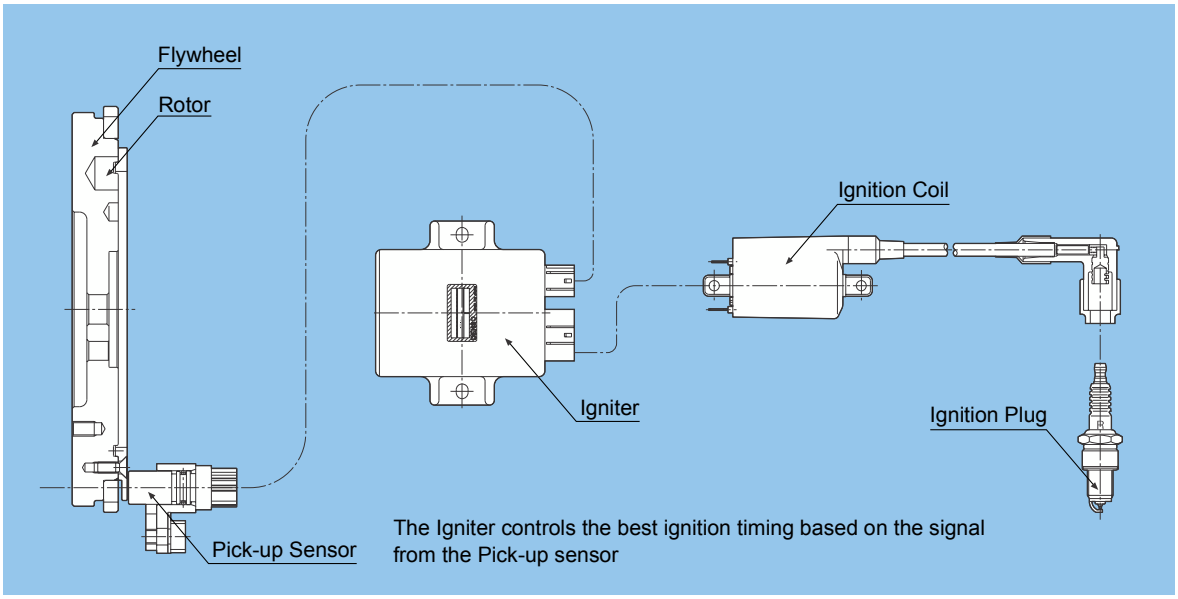


Attention to Detail (WG/DF972)

The newly designed gear case with cooling fins around the lubricating oil passage, ensures better cooling efficiency by reducing oil degradation, and helps protect engine components from wear.

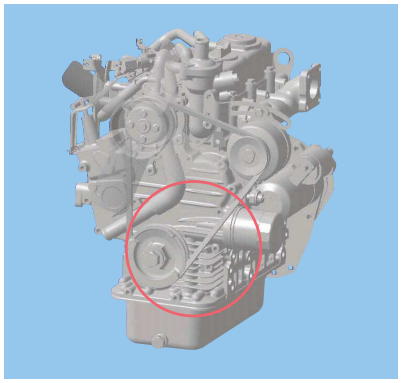
Digital igniter optimizes ignition

The voltage ignition signal sent from the rotor built into the flywheel is then magnetically picked up by the sensor, transmitted through the ignition coil to the spark plug and ignited, according to the ignition map set by the igniter Compared to a distributor type system, there is no distributor mechanism to wear out, thus it will last much longer. Moreover, it allows ignition timing to be optimized.



Gear case with cooling fins increases cooling efficiency

The maximum output of the WG/DF972 is 6.0kW/8.0HP over that of the WG/DF752, yet the gear case with cooling fin increases its cooling efficiency, while maintaining approximately the same 3.4L oil capacity of the WG/DF752.

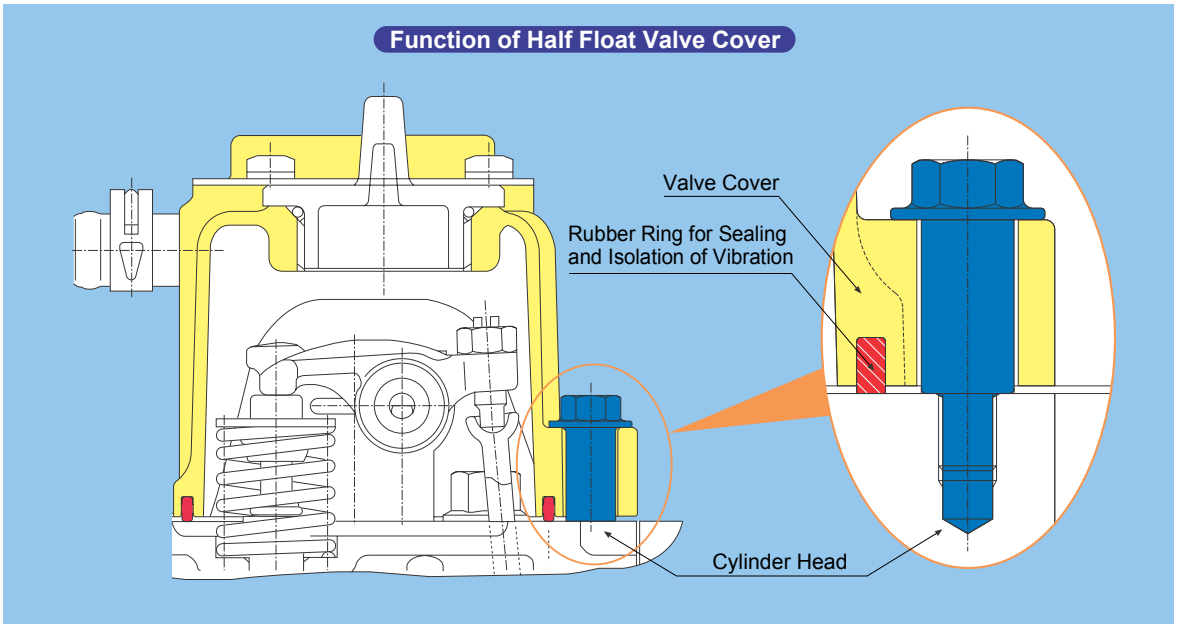


More Comfort from Less Noise & Vibration

The combustion chamber, designed exclusively for dual fuel engines, effectively reduces noise. To improve the already well-established lower noise and vibration levels of the WG/DF972, Kubota added a half float valve cover, and a MoS_2 coated piston. As a result, WG/DF972 produces a higher HP/output, yet the same noise and vibration levels as the WG/DF752.

Half float valve cover

A rubber ring seals and isolates vibration, and reduces the noise from the crankcase and the engine valve cover.



MoS_2 Coated Piston

Sulfureted molybdenum coating allows clearance reduction between the piston and the cylinder liner, thus optimizing the oval shape ratio and decreasing the piston slapping noise.

Increased the rigidity of the engine block

Parts of engine block which support main bearing case has thicker rib for additional rigidness to improve noise & vibration.

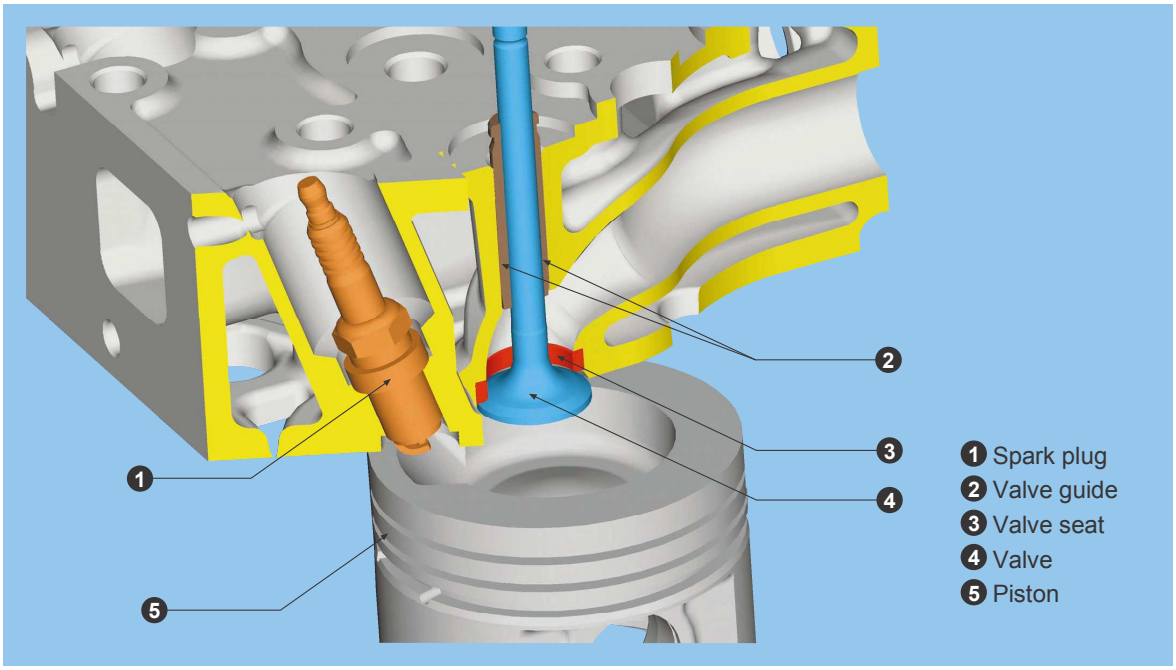
Clean Emission

Environmentally Friendly

Kubota's outstanding technology enables these engines to meet all current existing emission regulations around the world including Tier 2 emission regulations of both EPA and CARB LSI (under 1 liter).

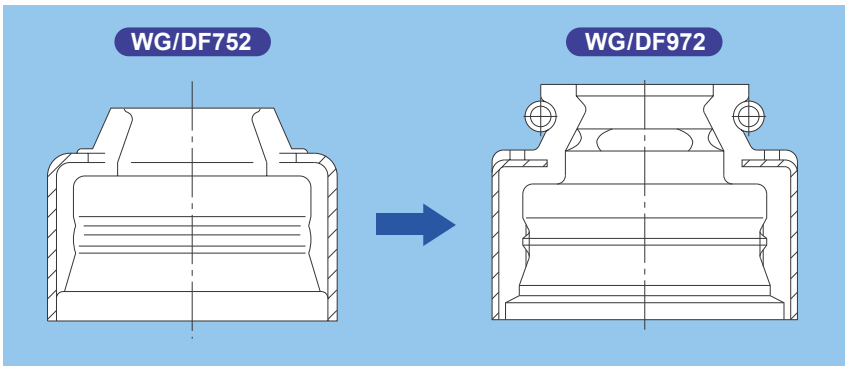
Improved combustion chamber

The Spark Ignition type combustion chamber, compactly placed on top of the piston head, successfully reduces emissions. To ensure even more reliable emission life, the intake/exhaust valve seats are fitted with special heat resistant stellite alloys.



Valve stem seal with spring

Helps decrease the HC level by optimizing oil supply to the valve guide.



Other Features

A selection to help you customize

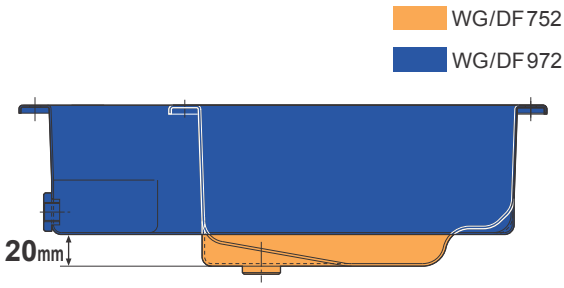
Whatever the specifications, wherever it is used, these options will help you customize and bring out its best performance.

Side PTO

Power can be taken out from the side.

Extended oil pan

Placed beneath the gear case to reduce overall height.

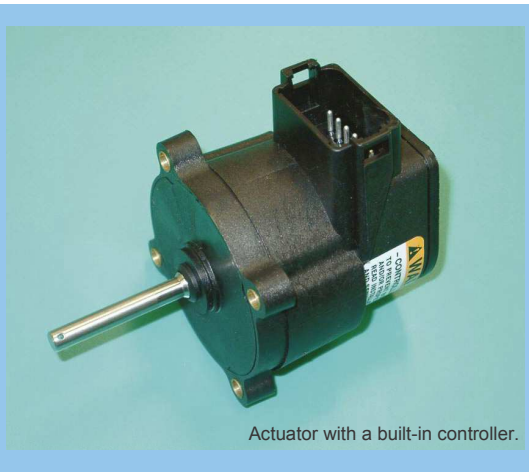


Auto choke (Option)

Quickens engine start-ups since there is no need to manually pulling the choke out.

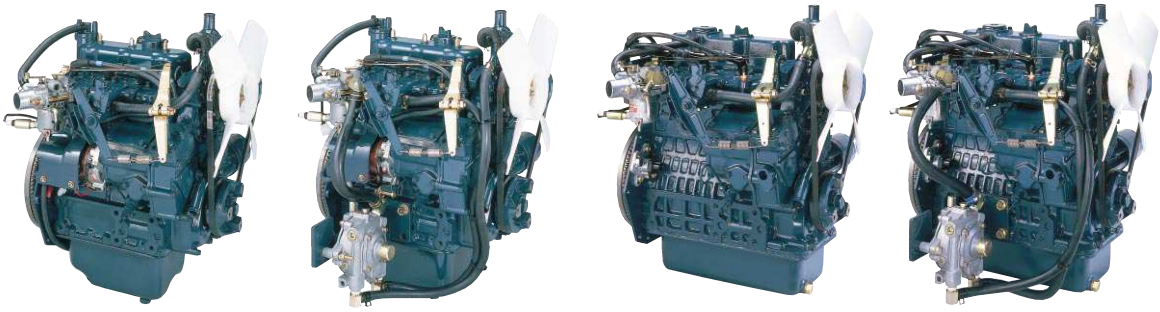
Electronic governor (Option)

Can be used instead of the factory installed mechanical governor.


Actuator with a built-in controller.

Specifications

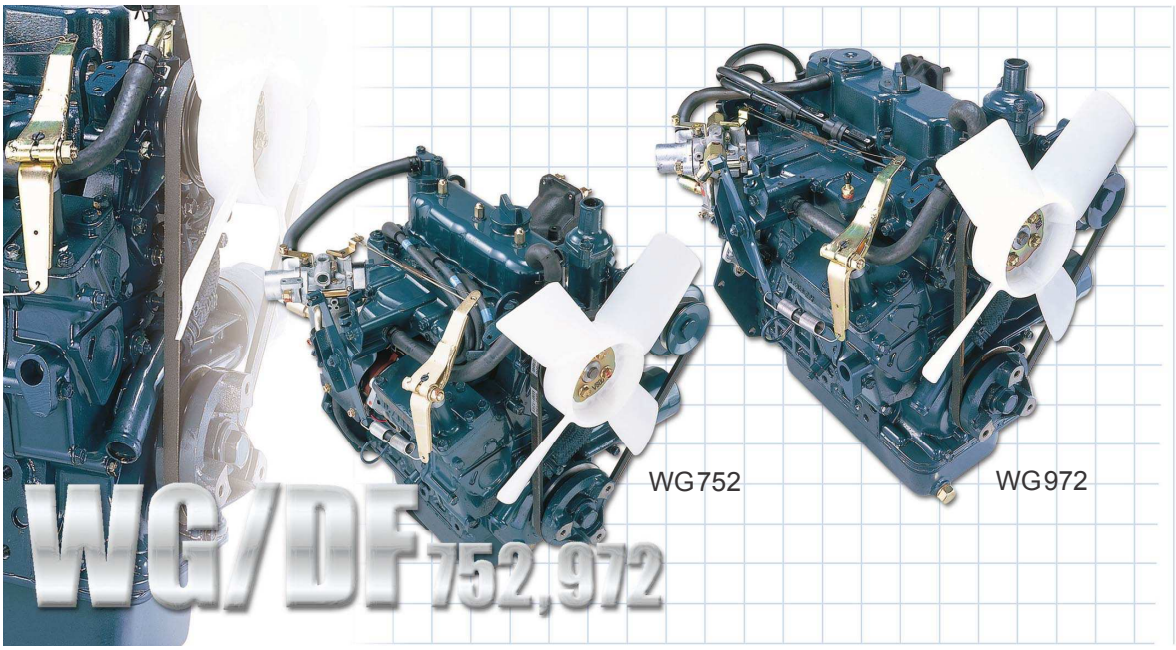
Full Lineup



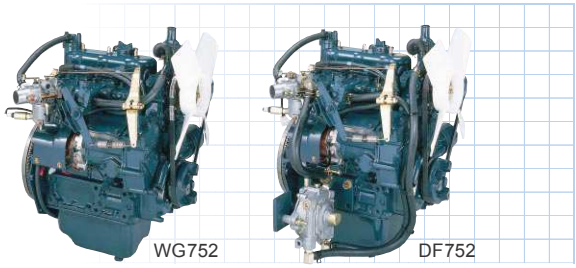
WG752 | DF752 | WG972 | DF972

Model			WG752	DF752		WG972	DF972	
Type			Vertical,Liquid-Cooled 4-cycle Gasoline engine	Vertical,Liquid-Cooled 4-cycle engine		Vertical,Liquid-Cooled 4-cycle Gasoline engine	Vertical,Liquid-Cooled 4-cycle engine	
				Gasoline use	LPG use		Gasoline use	LPG use
Cylinders			3					
Bore x Stroke		mm(in.)	68(2.68)x68(2.68)			74.5(2.93)x73.6(2.90)		
Displacement		L(cu.in.)	0.740(45.2)			0.962(58.7)		
Speed		rpm	3600					
Output	Gross intermittent	kW/HP/PS	18.3/24.5/24.9	17.5/23.5/23.8		24.2/32.5/32.9	23.1/31.0/31.4	
	Net intermittent		17.1/23.0/23.3	16.4/22.0/22.3		23.1/31.0/31.4	22.0/29.5/29.9	
	Net Continuous		13.4/18.0/18.2	12.7/17.0/17.3		20.9/28.0/28.4	17.5/23.5/23.8	
Dimensions(L×W×H)		mm(in.)	421.0x392.0x540.0(16.57x15.44x21.26)			442.6x402.0x503.1(17.40x15.80x19.80)		
Dry Weight		kg(lbs.)	61.7(136.0)			72.0(159.0)		

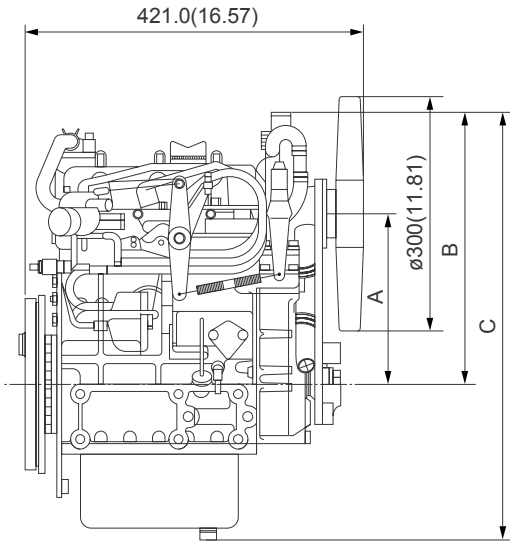
Note: *Specifications are subject to change without notice.
*Dry weight is according to Kubota's standard specification. When specification varies, the weight will vary accordingly.

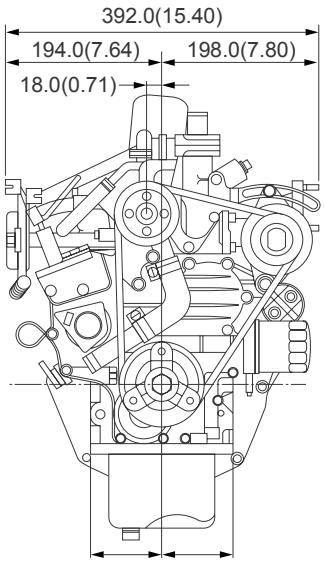


WG/DF752



Dimensions mm(in.)





	A	B	C
High Fan Position	215(8.46)	344(13.54)	540(21.26)
Low Fan Position	175(6.89)	305(12.01)	501(19.72)

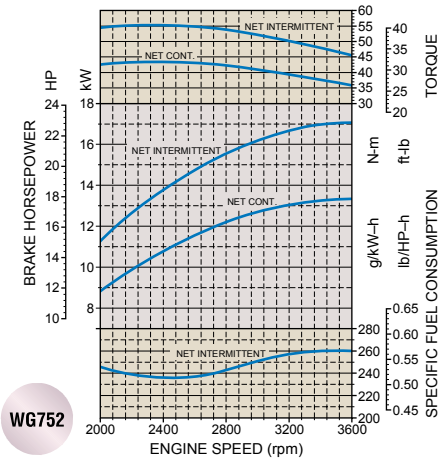
Shown above: with Kubota Standard flywheel and rear-end-plate.
Option kit for Clutch No.6 1/2" Flywheel and SAE No.5 Flywheel Housing is also available.

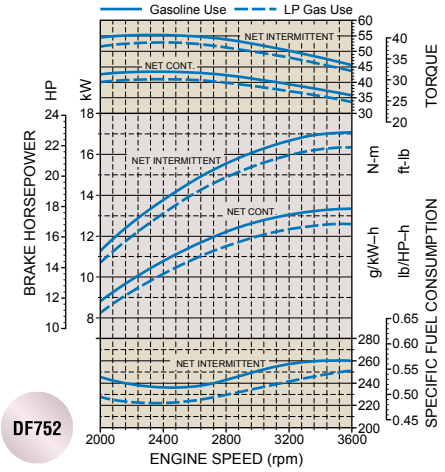
Specifications

Model			WG752	DF752	
Type		mm(in.) L(cu.in.)	Vertical,Liquid-Cooled 4-cycle Gasoline engine	Vertical,Liquid-Cooled 4-cycle engine	
				Gasoline use	LPG use
Cylinders			3		
Bore×Stroke		mm(in.)	68×68(2.68×2.68)		
Displacement		L(cu.in.)	0.740(45.2)		
Output	Gross intermittent	kW/HP/PS /rpm	18.3/24.5/24.9/3600		17.5/23.5/23.8 /3600
	Net intermittent		17.1/23.0/23.3/3600		16.4/22.0/22.3 /3600
	Net Continuous		13.4/18.0/18.2/3600		12.7/17.0/17.3 /3600
No Load High Idling Speed		rpm	3850		
No Load Low Idling Speed			1500		
Max. Torque		N·m(lbs ft) /rpm	54.9(40.5)/2400		52.0(38.3) /2400
Fuel			Unleaded gasoline		*Commercial LPG
Lubricating System			Forced lubricating by trochoid pump		
Lubricating Oil			Quality better than SH class		
Cooling system			Radiator(Not included in the basic specification)		
Starter Capacity		V-kW	12-0.7		
Alternator Capacity		V-W	12-150		
Dry Weight		kg(lbs.)	61.7(136.0)		
Dimensions (L×W×H)	Heigh Fan Position	mm(in.)	421.0×392.0×540.0(16.57×15.44×21.26)		
	Low Fan Position		421.0×392.0×501.0(16.57×15.44×19.72)		
Direction of Rotation			Counterclockwise(viewed from the flywheel side)		

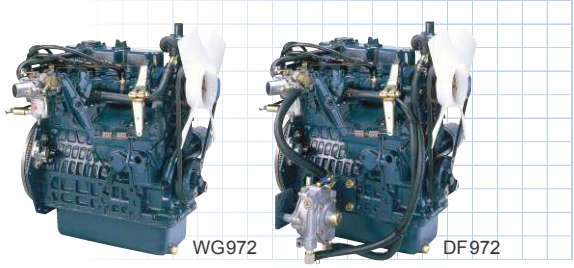
Note: *LPG regulator with vaporizer operates on a liquid withdrawal type system.
* Specifications are subject to change without notice.
* Dry weight is according to Kubota's standard specification.
When specification varies, the weight will vary accordingly.

Performance Curve

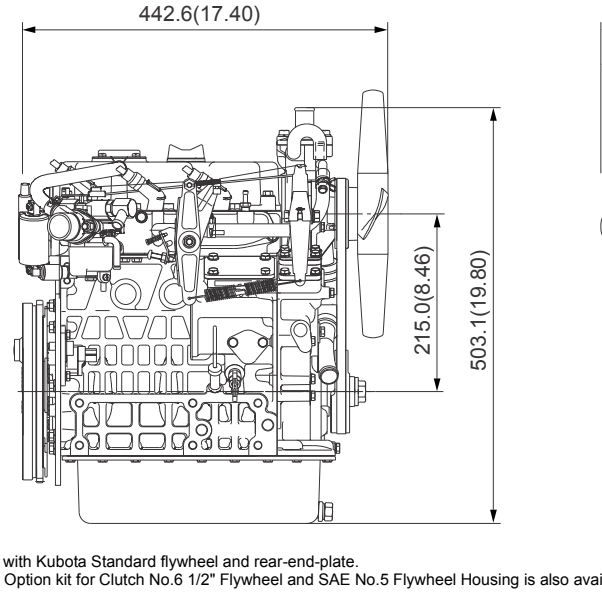


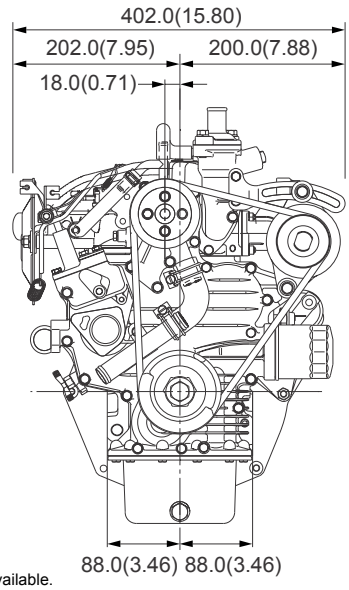


WG/DF 972



Dimensions mm(in.)





Shown above: with Kubota Standard flywheel and rear-end-plate.
Option kit for Clutch No.6 1/2" Flywheel and SAE No.5 Flywheel Housing is also available.

Specifications

Model			WG972	DF972	
Type		mm(in.) L(cu.in.)	Vertical,Liquid-Cooled 4-cycle Gasoline engine	Vertical,Liquid-Cooled 4-cycle engine	
				Gasoline use	LPG use
Cylinders			3		
Bore×Stroke		mm(in.)	74.5×73.6(2.93×2.90)		
Displacement		L(cu.in.)	0.962(58.7)		
Output	Gross intermittent	kW/HP/PS /rpm	24.2/32.5/32.9/3600		23.1/31.0/31.4 /3600
	Net intermittent		23.1/31.0/31.4/3600		22.0/29.0/29.9 /3600
	Net Continuous		20.9/28.0/28.4/3600		17.5/23.5/23.8 /3600
No Load High Idling Speed		rpm	3850		
No Load Low Idling Speed			1500		
Max. Torque		N·m(lbs ft) /rpm	73.5(52.9)/2400		69.6(50.0) /2400
Fuel			Unleaded gasoline		*Commercial LPG
Lubricating System			Forced lubricating by trochoid pump		
Lubricating Oil			Quality better than SH class		
Cooling system			Radiator(Not included in the basic specification)		
Starter Capacity		V-kW	12-1.0		
Alternator Capacity		V-W	12-480		
Dry Weight		kg(lbs.)	72.0(159.0)		
Dimensions(L×W×H)		mm(in.)	442.6×402.0×503.1(17.40×15.80×19.80)		
Direction of Rotation			Counterclockwise(viewed from the flywheel side)		

Note: *LPG regulator with vaporizer operates on a liquid withdrawal type system.
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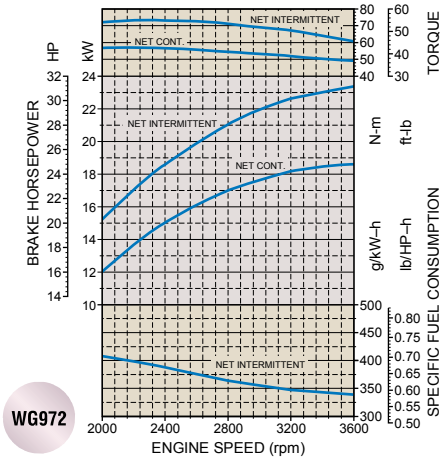
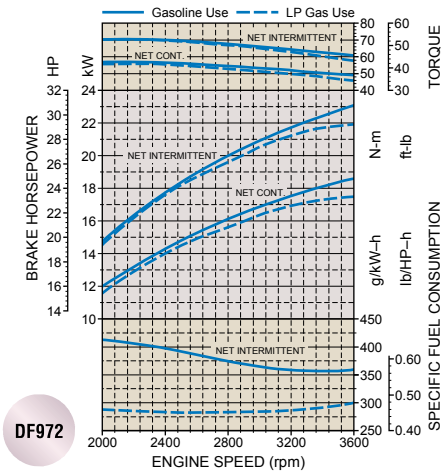
Performance Curve





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