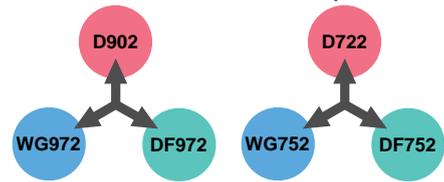


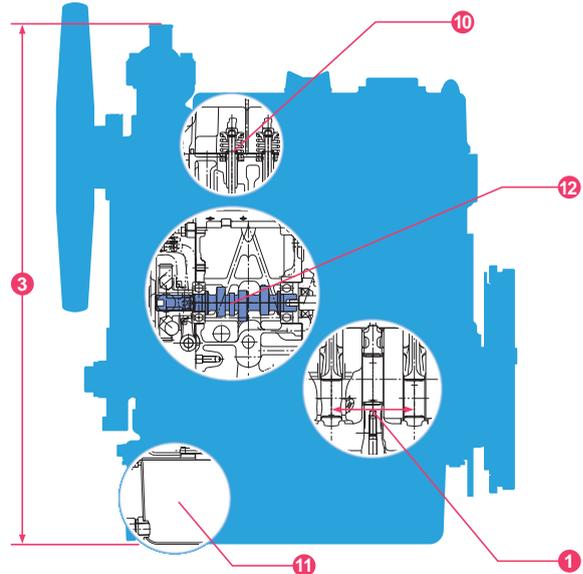
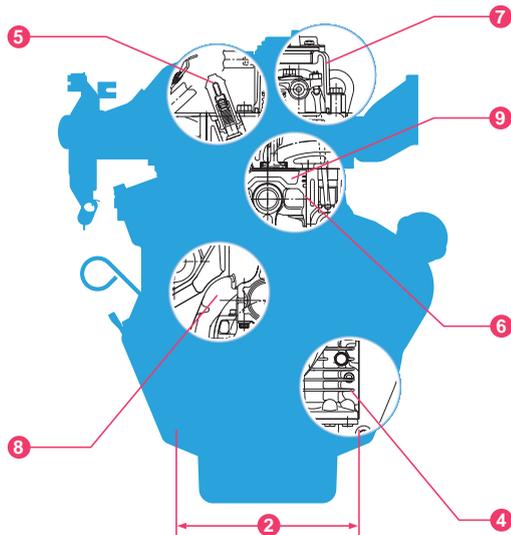
# Introduction

## 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/DF 752
- 3 Lower engine height than WG/DF 752

### Tough Reliability

- 4 Gear case cooling fin
- 5 Digital ignition

### Lower Noise &Vibration

- 6 MoS<sub>2</sub> 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

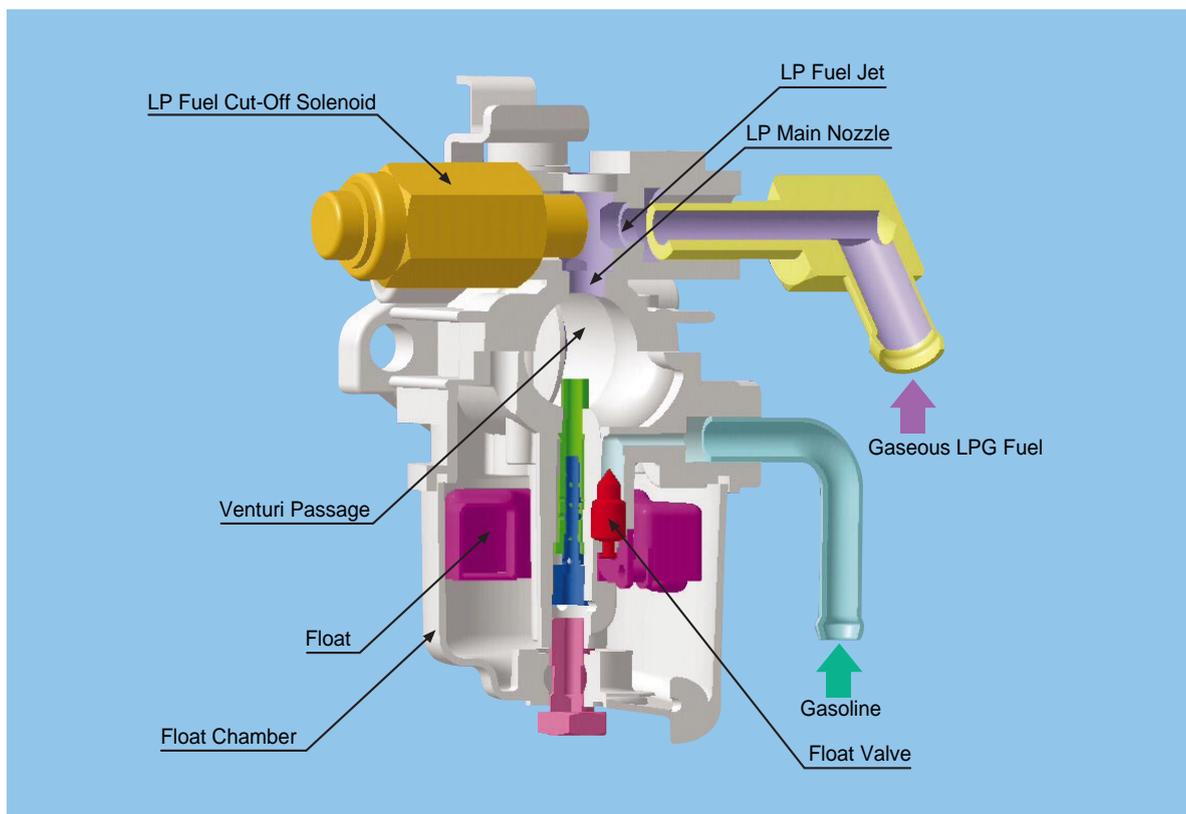
# Original Dual Fuel Carburetor

## 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



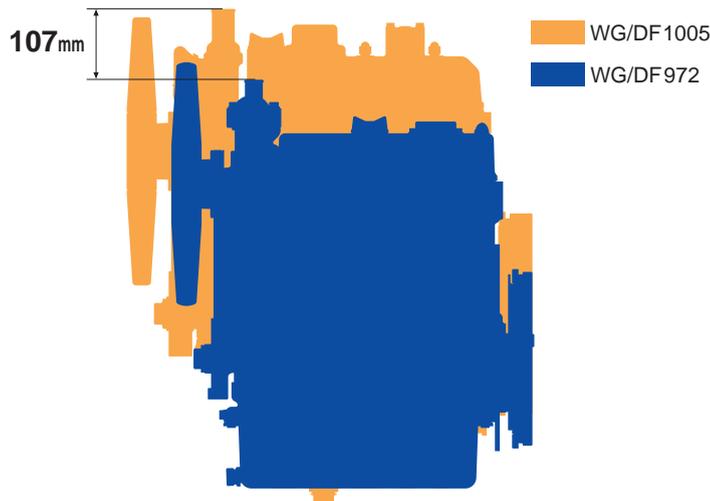
# High Power Density

## 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 ( $\phi 68 \rightarrow \phi 74.5$ ) 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.

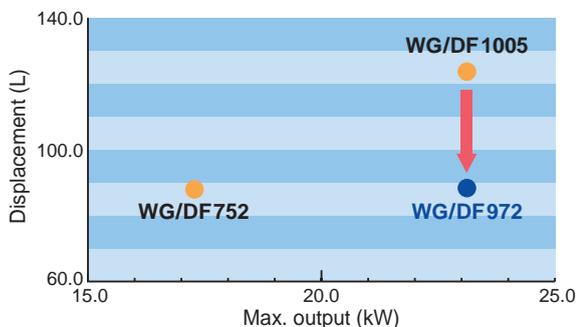
### Height Comparison against WG/DF1005

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



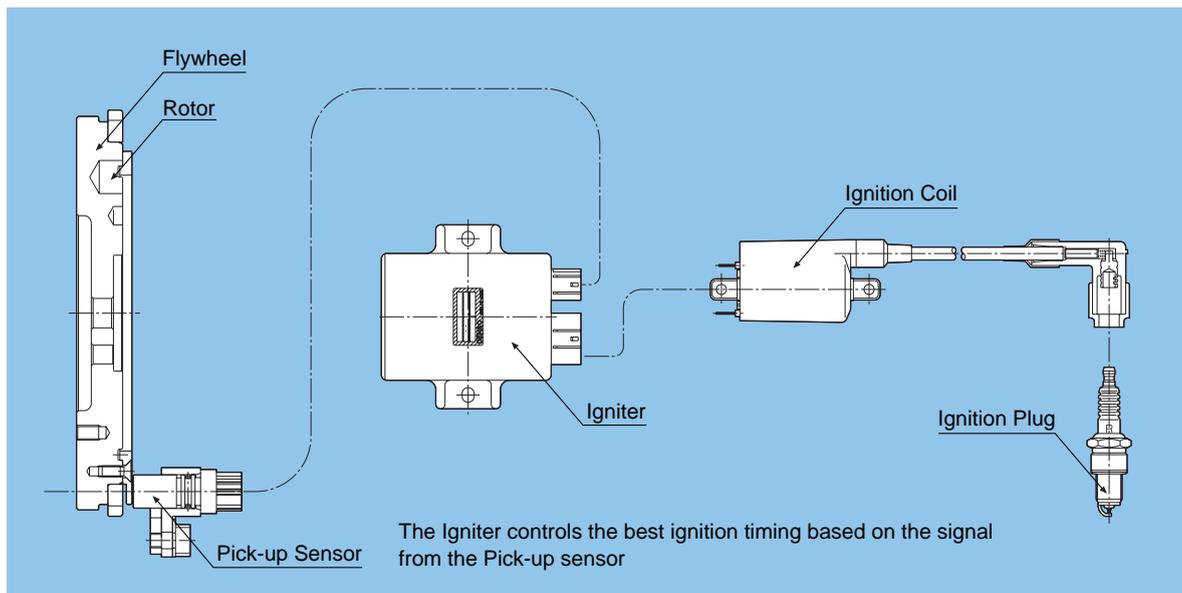
# Tough Reliability

## 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.

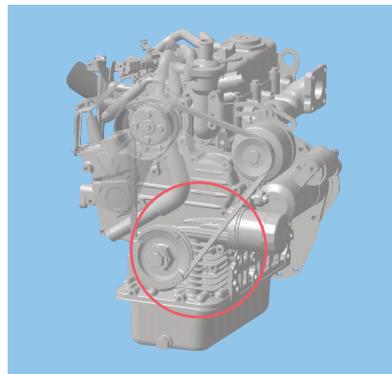
### Digital igniter optimizes ignition

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.



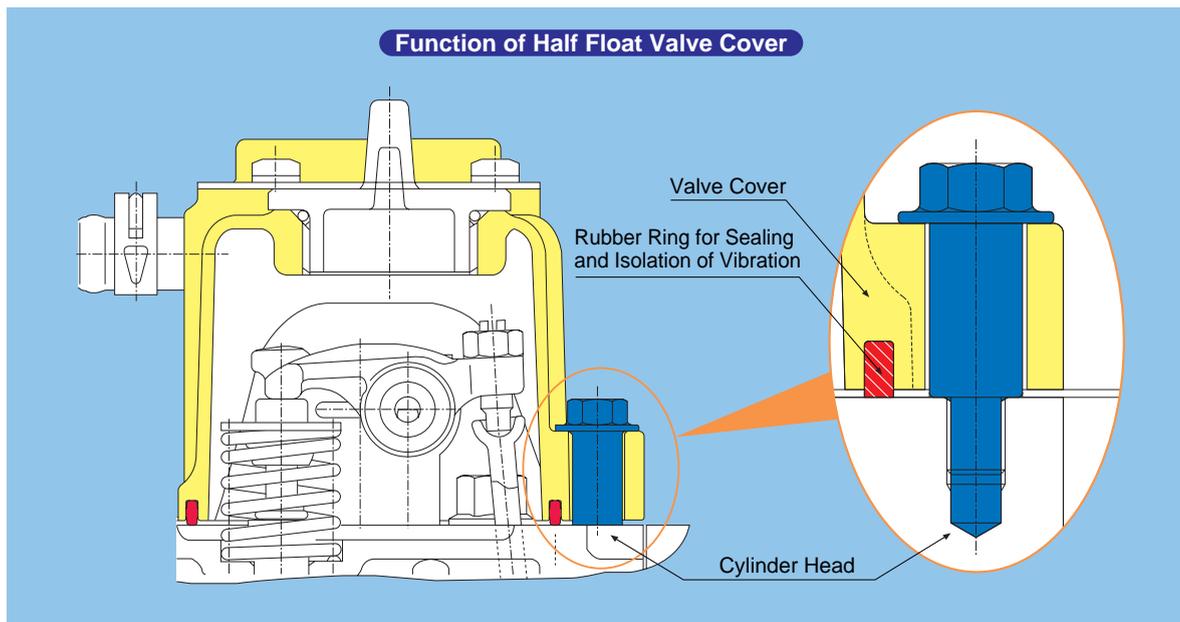
# Lower Noise & Vibration

## 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<sub>2</sub> 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<sub>2</sub> 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 rigidity to improve noise & vibration.



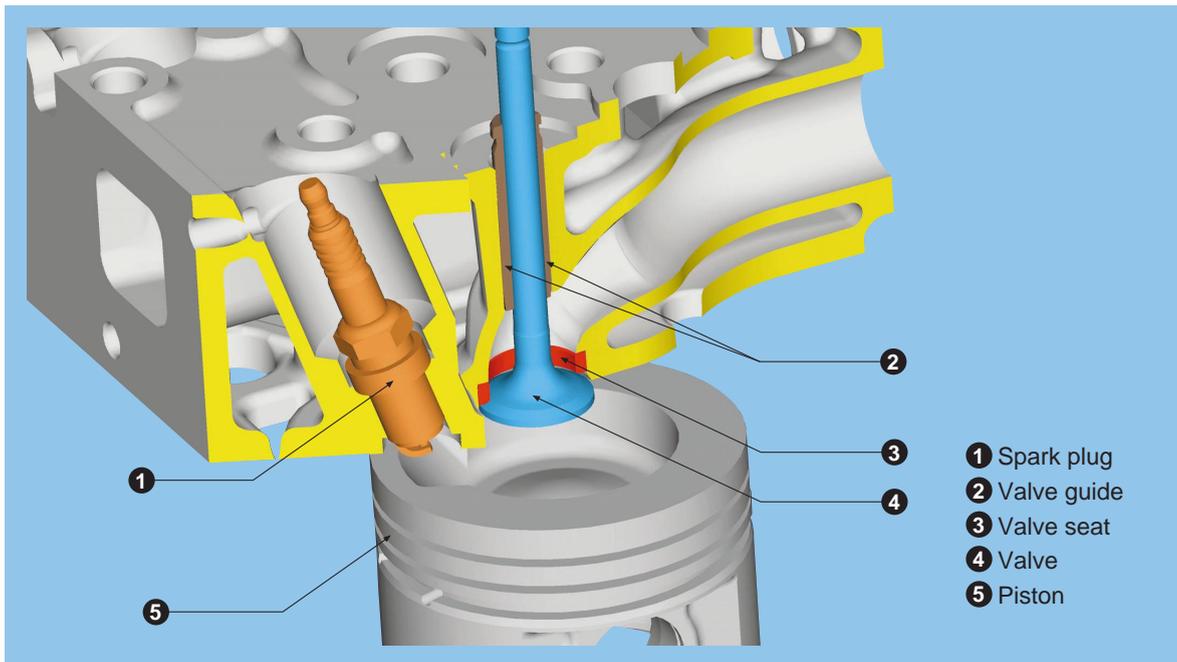
# Clean Emission

## 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).

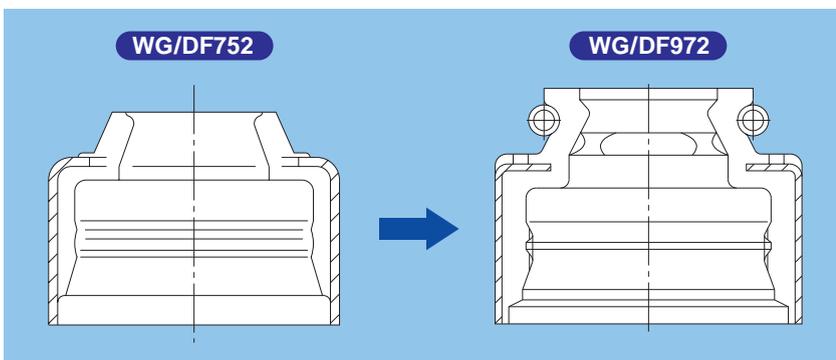
### Improved combustion chamber

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.

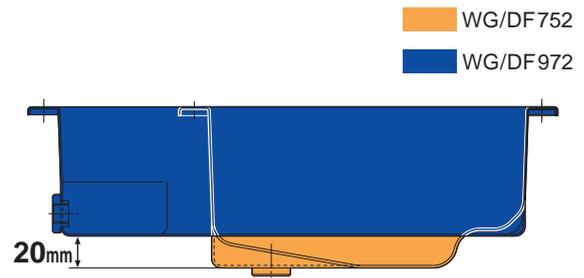
### Side PTO

Power can be taken out from the side.



### Extended oil pan

Placed beneath the gear case to reduce overall height.



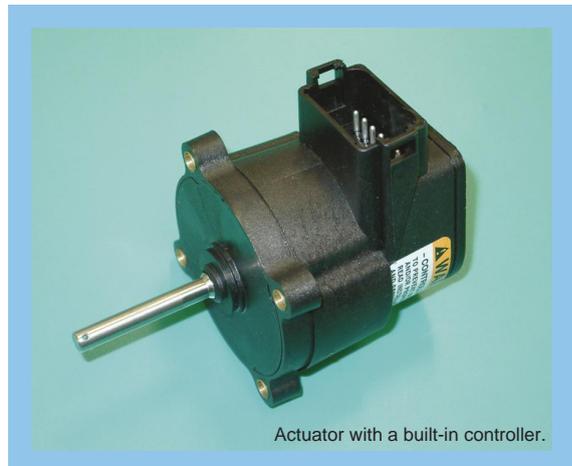
### Auto choke (Option)

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.



# Specifications

## Full Lineup



**WG752**



**DF752**



**WG972**



**DF972**

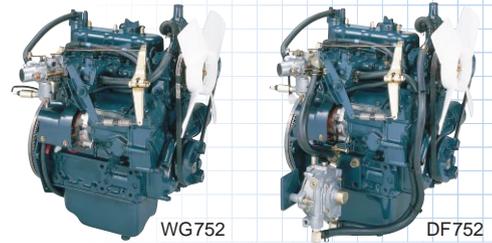
Model		WG752	DF752	WG972	DF972
Type		Vertical, Liquid-Cooled 4-cycle Gasoline engine	Vertical, Liquid-Cooled 4-cycle engine		Vertical, Liquid-Cooled 4-cycle Gasoline engine
			Gasoline use	LPG use	
Cylinders		3			
Bore x Stroke		68(2.68) x 68(2.68)		74.5(2.93) x 73.6(2.90)	
Displacement		0.740(45.2)		0.962(58.7)	
Speed		3600			
Output	Gross intermittent	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 x W x H)		421.0 x 392.0 x 540.0 (16.57 x 15.44 x 21.26)		442.6 x 402.0 x 503.1 (17.40 x 15.80 x 19.80)	
Dry Weight		61.7(136.0)		72.0(159.0)	

Note: \*Specifications are subject to change without notice.

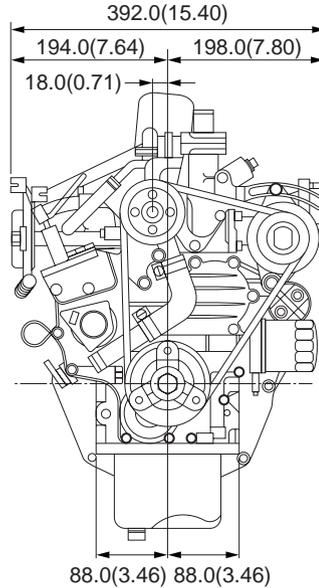
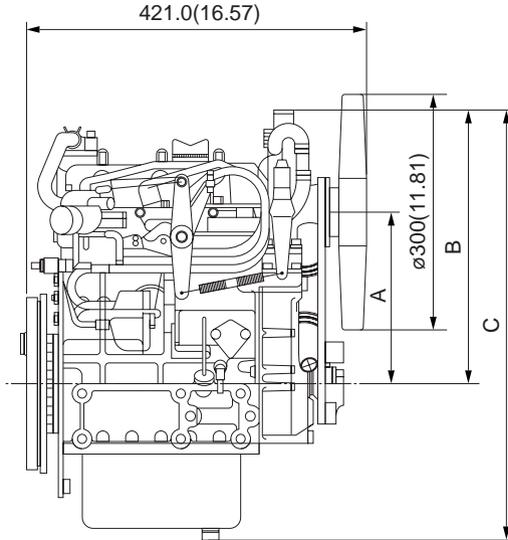
\*Dry weight is according to Kubota's standard specification. When specification varies, the weight will vary accordingly.



# 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.

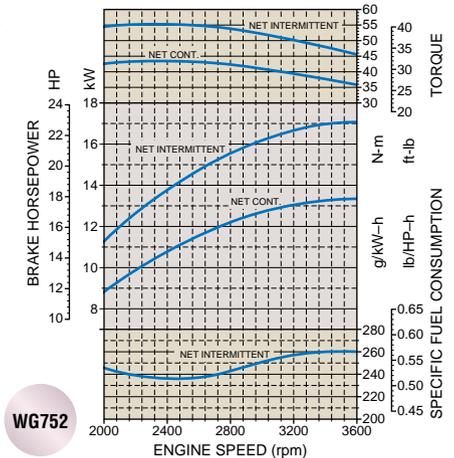
## Specifications

Model		WG752	DF752
Type	mm (in.)	Vertical, Liquid-Cooled	Vertical, Liquid-Cooled
	L (cu. in.)	4-cycle Gasoline engine	4-cycle engine
Cylinders		3	
Bore x Stroke	mm (in.)	68 x 68 (2.68 x 2.68)	
Displacement	L (cu. in.)	0.740 (45.2)	
Output	Gross intermittent	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	rpm	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 x W x H)	High Fan Position	421.0 x 392.0 x 540.0 (16.57 x 15.44 x 21.26)	
	Low Fan Position	421.0 x 392.0 x 501.0 (16.57 x 15.44 x 19.72)	
Direction of Rotation		Counterclockwise (viewed from the flywheel side)	

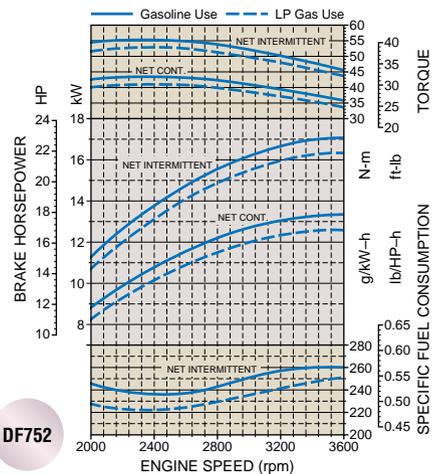
Note: \*LPG regulator with vaporizer operates on a liquid withdrawal type system.

- \* 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

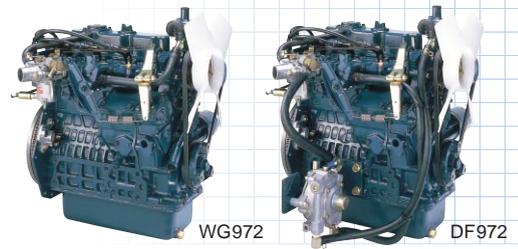


WG752

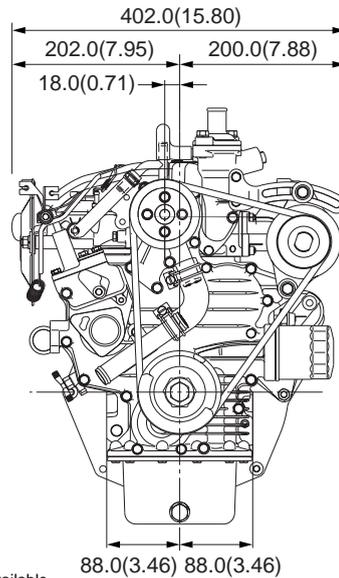
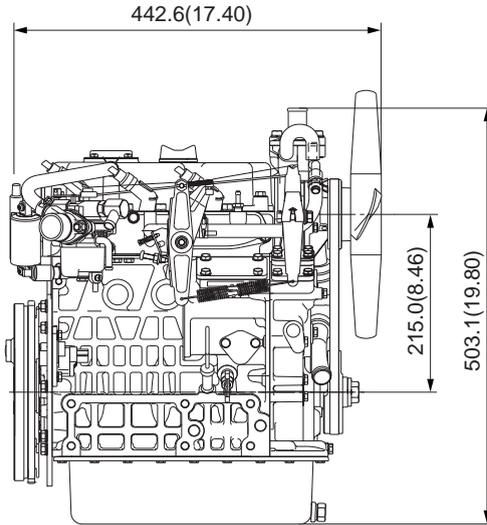


DF752

# WG/DF972



## 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.)	Vertical, Liquid-Cooled 4-cycle Gasoline engine	Vertical, Liquid-Cooled 4-cycle engine
	L (cu.in.)		Gasoline use   LPG use
Cylinders		3	
Bore x Stroke		74.5x73.6(2.93x2.90)	
Displacement		0.962(58.7)	
Output	Gross intermittent	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		3850	
No Load Low Idling Speed		1500	
Max. Torque	N-m(lbs ft)	73.5(52.9)/2400	69.6(50.0) /2400
	/rpm		
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 x W x H)		442.6x402.0x503.1 (17.40x15.80x19.80)	
Direction of Rotation		Counterclockwise(viewed from the flywheel side)	

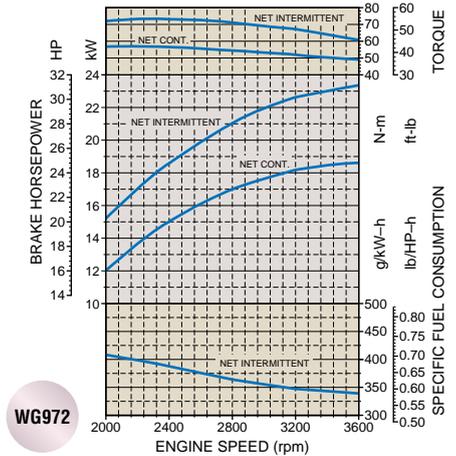
Note: \*LPG regulator with vaporizer operates on a liquid withdrawal type system.

\* Specifications are subject to change without notice.

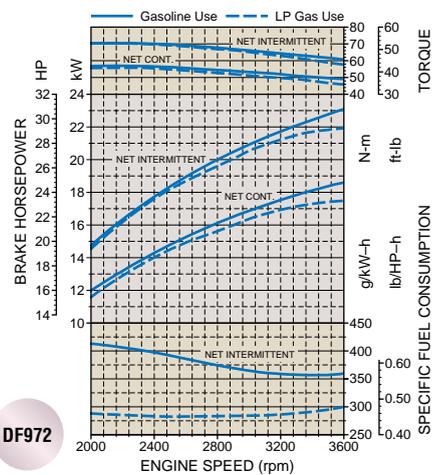
\* Dry weight is according to Kubota's standard specification.

When specification varies, the weight will vary accordingly.

## Performance Curve



WG972



DF972