



**YANMAR**

PRODUCTS GUIDE

# MARINE AUXILIARY DIESEL ENGINES

GENERATOR CAPACITY : 10~450kW<sub>e</sub>



**YANMAR POWER TECHNOLOGY CO., LTD.**

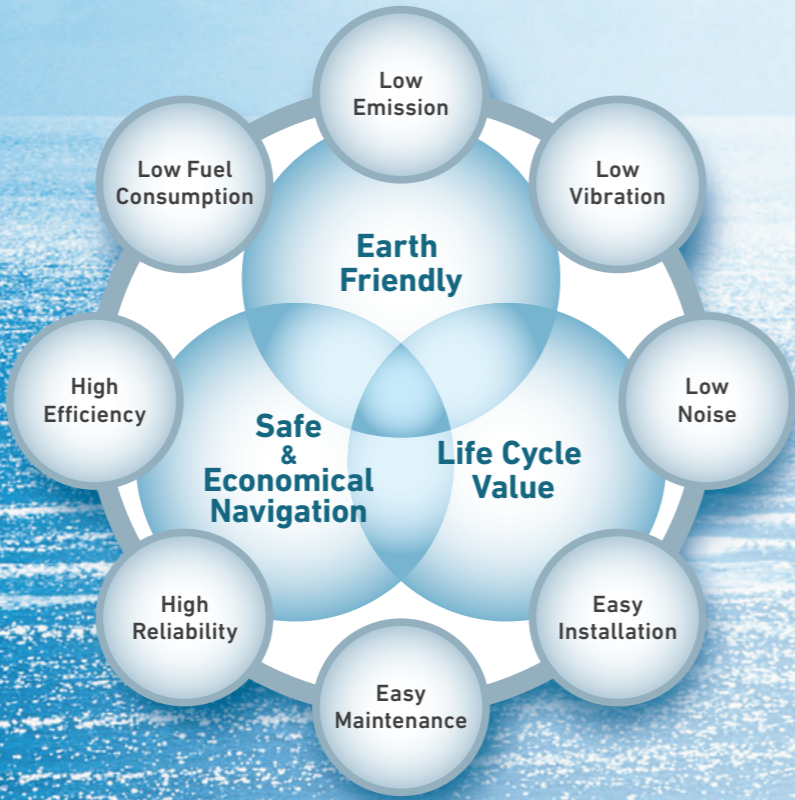
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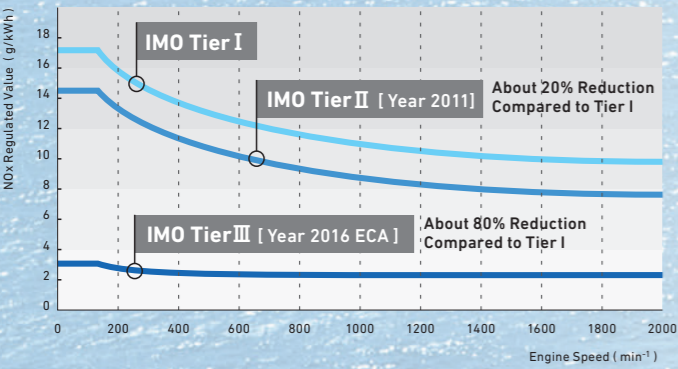
# YANMAR Power Solution contributes to work “ Life Cycle Value ” and “ Harmony with the environment ”

Nowadays, as atmospheric pollution damages the environment and global warming has begun to effect the ecosystem, protecting the environment has become a vital global issue. YANMAR has been dedicated to developing its own new technologies and products in pursuit of resource and energy efficiency since YANMAR was founded with the sprit of 'grateful to serve for a better world'. In order to realize that hope, we are developing engines in harmony with the environment by reducing NOx, CO2, SOx, and other emissions and reducing the use of environmentally damaging substances. Furthermore, YANMAR has pursued the continuous improvement of Life Cycle Value for the customer throughout a long product life by developing products that embody reliability, durability and low-cost operation. YANMAR Power Solution, it's all for your business and the world tomorrow.



## Harmony with the Environment — IMO Emission Limits —

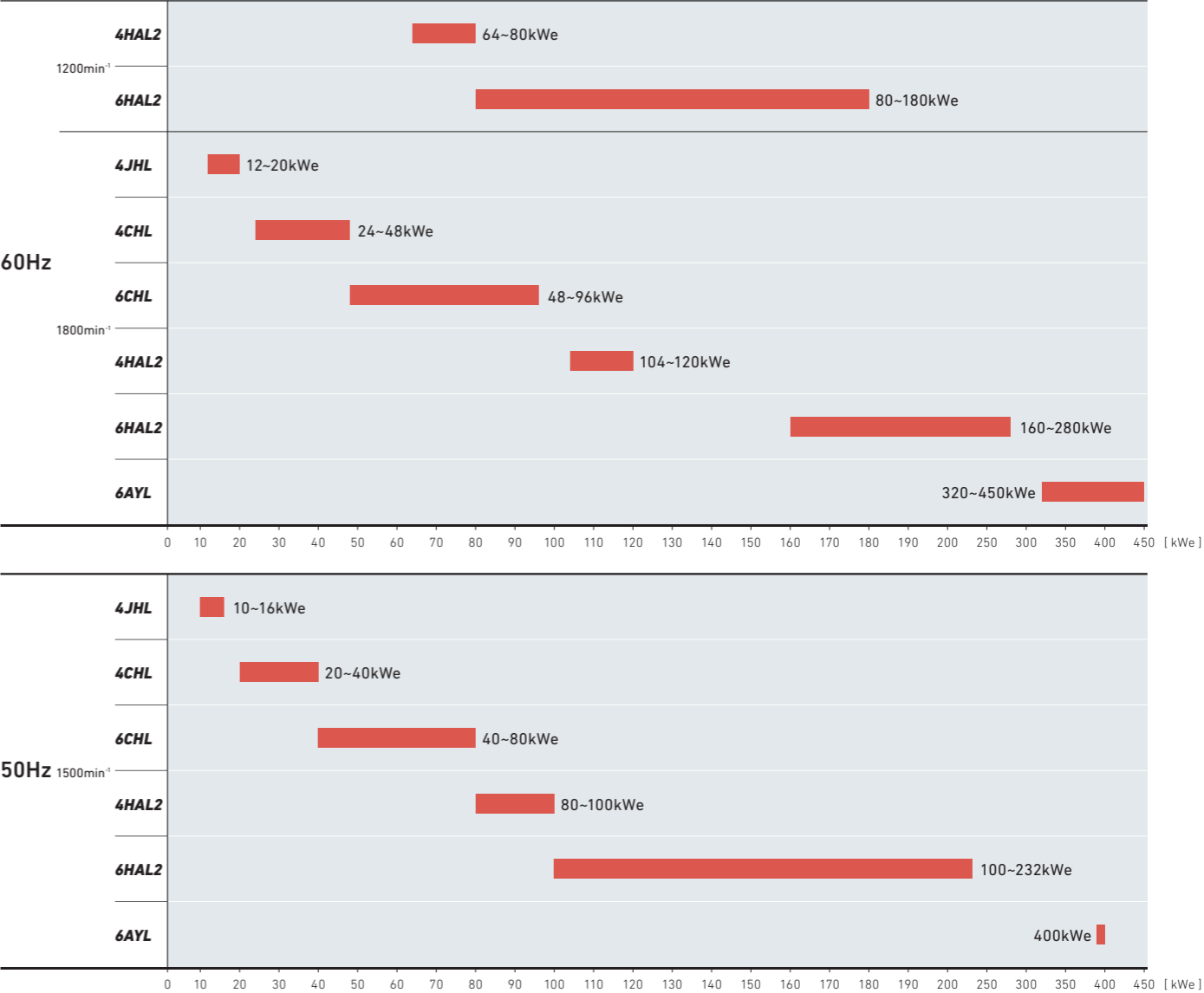
### IMO NOx Emission Limits



The pollution of the atmosphere by hazardous substances released from marine diesel engines has become a major global issue. The release of hazardous substances into the atmosphere by ships is regulated by the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78). Annex VI: Prevention of Air Pollution from Ships was later passed in September 1997. As a result, the regulation of NOx emission levels began for marine diesel engines with a power of above 130kW on vessels built on or after January 1,2000. A further amendment was passed in October, 2008 and engines mounted in vessels built on or after January 1,2011 face even stricter TierII regulations. Technological solutions have been developed to overcome these regulatory challenges including engine technologies, supplementary technologies and post processing technologies. Yanmar is addressing the stricter IMO TierII regulation NOx limits with improvements to combustion technologies of engine.

# MARINE AUXILIARY DIESEL ENGINE LINE-UP

## Generator Capacity



## Global Hub Factory for Marine Diesel Engines Tsukaguchi Plant

The Yanmar Marine Operations Division specializes in developing and producing small and medium-sized diesel engines mainly at the Tsukaguchi Plant. From processing of components for marine propulsion engines, marine auxiliary engines, land and industrial engines to assembly, rigging, and test runs, the Tsukaguchi Plant uses a consistent quality control system to produce a wide range of diesel engines. We deliver highly reliable products that thoroughly apply the technologies and expertise that we have fine-tuned over the years to markets in Japan and all over the world.

**Certified by the six major classification societies.**  
The Tsukaguchi Plant has been certified by world's six most authoritative shipping classification associations, LRS(Lloy'ds Resister of Shipping), ABS (American Bureau of Shipping), NK(Nippon Kaiji Kyokai), BV(Bureau Veritas), RINA(Registro Italiano Navale) and KR(Korea Resister of Shipping).

**LRS** [ Lloy'ds Register of Shipping ]   **BV** [ Bureau Veritas ]  
**ABS** [ American Bureau of Shipping ]   **RINA** [ Registro Italiano Navale ]  
**NK** [ Nippon Kaiji Kyokai ]   **KR** [ Korean Register of Shipping ]

The Certifications of shipping classification societies vary with the model of engine. For more information, please contact us.



Certifications of 6 major shipping classification societies



Assembly Process [ Cell ]

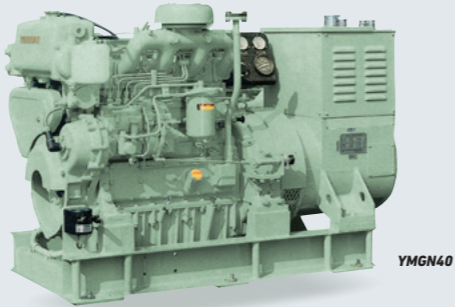


Tsukaguchi Plant

Marine Diesel Generator Set

**YMGN series**

Generator Capacity  
12~32kWe[60Hz]

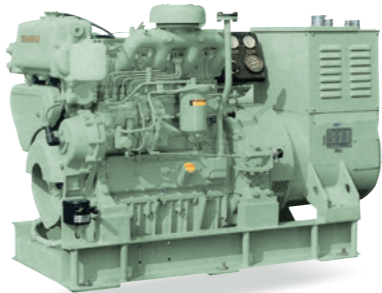


YMGN40

Set Model		YMGN15B	YMGN20B	YMGN25B	YMGN30B	YMGN40B
Generator	Type	Brushless AC Generator [ Taiyo Electric Co., Ltd. ]				
	No. of Phases	3 ø 4wire				
	Frequency [Hz]	60				
	Generator Capacity [kWe (kVA)]	12 (15)	16 (20)	20 (25)	24 (30)	32 (40)
	Voltage [V]	225 / 130				
	Current [A]	38.5	51.3	64.2	77	102.6
Engine	Type	Vertical, Water-cooled, 4-stroke Diesel				
	Model	4JHL-N	4JHL-TN	4JHL-HTN	4CHL-N	
	Continuous Rated Output [kW (PS)]	14.7 ( 20 )	19.1 (26)	23.5 (32)	36.8 (50)	
	Engine Speed [min <sup>-1</sup> ]	1800				
	Combustion Method	Direct Injection				
Set	Total Weight ( Gen. Set ) [kg]	455	460	485	940	990

**4CHL**

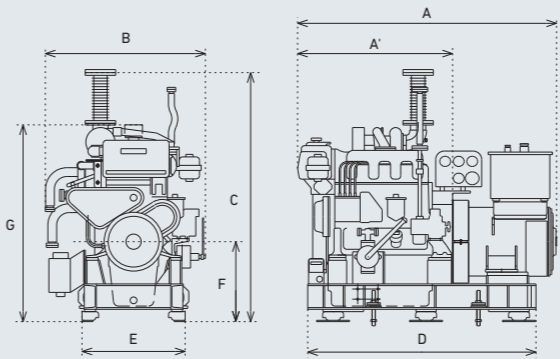
Generator Capacity 20~48kWe



Specifications

Engine Model	4CHL-N				4CHL-TN		4CHL-TNA	
Type	Vertical, Water-cooled, 4-stroke Diesel							
No. of Cylinders	In-line 4							
Cylinder Bore×Stroke [mm]	105×125							
Continuous Rated Output [kW (PS)]	27.9 (38)		36.8 (50)		36.8 (50)	45.6 (62)	45.6 (62)	54.4 (74)
Generator Capacity [kWe (kVA)]	20 (25)	24 (30)	24 (30)	32 (40)	32 (40)	40 (50)	40 (50)	48 (60)
Engine Speed [min-1]	1500		1800		1500	1800	1500	1800
Combustion system	Direct injection							
Starting system	Electric Starting or Air-motor starting							
Dry Weight [kg]	500				520			
Total Weight ( Gen.Set ) [kg]	940		990		1040		1090	

The engine dry weight may differ depending upon the specifications and attached accessories.  
Above generator capacity will vary according to actual generator efficiency.  
• In case of 4CHL-TNA, continuous load operation shall be 80% or below of rated power, and 100% load operation shall be within 2 hours per 12 hours.



G : Minimum Height for Removing Piston ( Not included the dimension for bolt fitting to piston remove. )

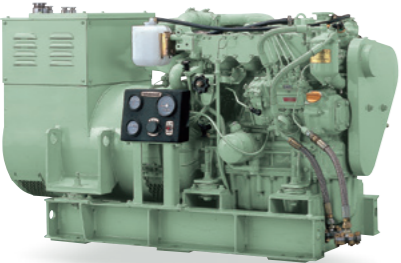
Dimensions [mm]

Models	4CHL-N	4CHL-TN	4CHL-TNA
A	1552	1532	1572
A'	917	917	917
B	947	947	947
C	1350.5	1473	1473
D	1350	1350	1420
E	610	610	610
F	473	473	473
G	1164	1164	1164

Depending on the specifications or options that have been chosen, your model may differ slightly from the one in the photograph and outline.

**4JHL**

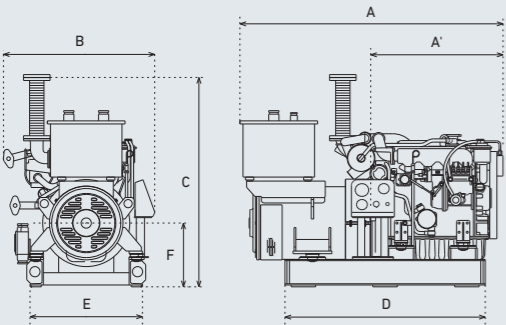
Generator Capacity 10~20kWe



Specifications

Engine Model	4JHL-N		4JHL-TN		4JHL-HTN	
Type	Vertical, Water-cooled, 4-stroke Diesel					
No. of Cylinders	In-line 4					
Cylinder Bore×Stroke [mm]	78×86					
Continuous Rated Output [kW (PS)]	12.1 (16.5)	14.7 (20)	14.7 (20)	19.1 (26)	19.1 (26)	23.5 (32)
Generator Capacity [kWe (kVA)]	10 (12.5)	12 (15)	12 (15)	16 (20)	16 (20)	20 (25)
Engine Speed [min-1]	1500	1800	1500	1800	1500	1800
Combustion system	Direct injection					
Starting system	Electric Starting					
Dry Weight [kg]	205		210		215	
Total Weight ( Gen.Set ) [kg]	455		460		485	

The engine dry weight may differ depending upon the specifications and attached accessories.  
Above generator capacity will vary according to actual generator efficiency.



Piston cannot be removed unless rotate engine.

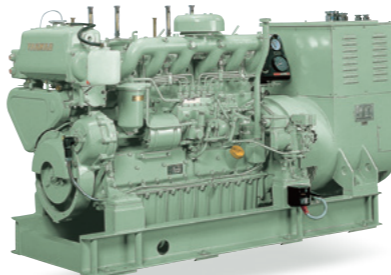
Dimensions [mm]

Models	4JHL-N	4JHL-TN	4JHL-HTN
A	1258	1258	1288
A'	648	648	648
B	708	708	740
C	1050	1025	1025
D	980	980	980
E	550	550	550
F	312	312	312
G	-	-	-

Depending on the specifications or options that have been chosen, your model may differ slightly from the one in the photograph and outline.

**6CHL**

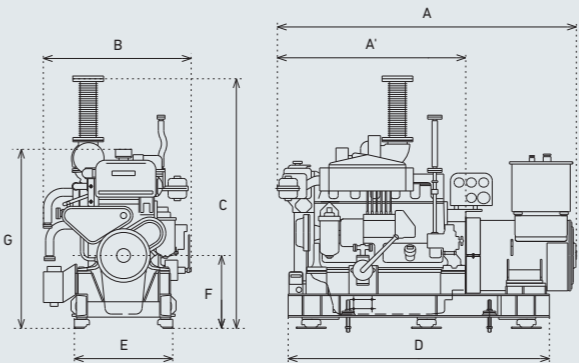
Generator Capacity 40~96kWe



Specifications

Engine Model	6CHL-N		6CHL-TN		6CHL-TNA		6CHL-HTN		6CHL-HTNA	
Type	Vertical, Water-cooled, 4-stroke Diesel									
No. of Cylinders	In-line 6									
Cylinder Bore×Stroke [mm]	105×125									
Continuous Rated Output [kW (PS)]	45.6 (62)	54.4 (74)	54.4 (74)	73.6 (100)	67.7 (92)	89.7 (122)	73.6 (100)	88.3 (120)	91.9 (125)	107 (145)
Generator Capacity [kWe (kVA)]	40 (50)	48 (60)	48 (60)	64 (80)	60 (75)	80 (100)	64 (80)	80 (100)	80 (100)	96 (120)
Engine Speed [min-1]	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800
Combustion system	Direct injection									
Starting system	Electric Starting or Air-motor starting									
Dry Weight [kg]	625		645		645		675		675	
Total Weight ( Gen.Set ) [kg]	1220		1350		1350		1380		1540	

The engine dry weight may differ depending upon the specifications and attached accessories.  
Above generator capacity will vary according to actual generator efficiency.  
• In case of 6CHL-TNA / 6CHL-HTNA, continuous load operation shall be 80% or below of rated power, and 100% load operation shall be within 2 hours per 12 hours.



G : Minimum Height for Removing Piston ( Not included the dimension for bolt fitting to piston remove. )

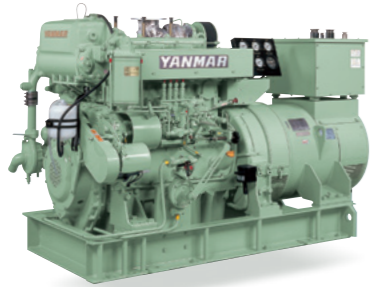
Dimensions [mm]

Models	6CHL-N	6CHL-TN	6CHL-TNA	6CHL-HTN	6CHL-HTNA
A	1861	1926	1926	1946	2051
A'	1206	1206	1206	1256	1256
B	962	962	962	962	962
C	1382	1624	1624	1624	1634
D	1650	1700	1700	1700	1900
E	640	640	640	640	640
F	474	474	474	474	484
G	1165	1165	1165	1165	1175

Depending on the specifications or options that have been chosen, your model may differ slightly from the one in the photograph and outline.

# 4HAL2

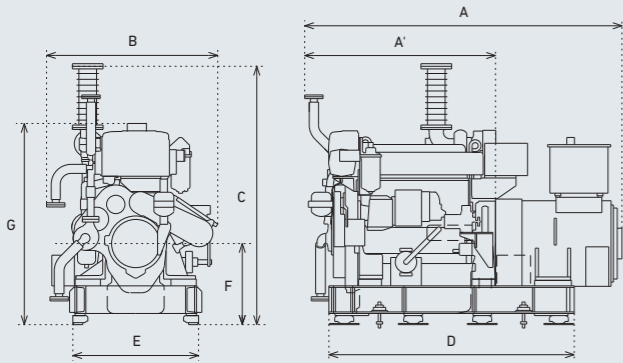
Generator Capacity 64~120kWe



### Specifications

Engine Model	4HAL2-TN1			4HAL2-TN		4HAL2-WT
Type	Vertical, Water-cooled, 4-stroke Diesel					
No. of Cylinders	In-line 4					
Cylinder Bore×Stroke [mm]	130×165					
Continuous Rated Output [kW (PS)]	72 (98)	89 (121)	116 (157)	90 (122)	115 (156)	135 (183)
Generator Capacity [kWe (kVA)]	64 (80)	80 (100)	104 (130)	80 (100)	100 (125)	120 (150)
Engine Speed [min-1]	1200	1500	1800	1200	1500	1800
Combustion system	Direct injection					
Starting system	Electric Starting or Air-motor starting					
Dry Weight [kg]	1030					
Total Weight ( Gen.Set ) [kg]	1855					

The engine dry weight may differ depending upon the specifications and attached accessories.  
Above generator capacity will vary according to actual generator efficiency.



G : Minimum Height for Removing Piston ( Not included the dimension for bolt fitting to piston remove. )

### Dimensions [mm]

Models	4HAL2-TN1	4HAL2-TN	4HAL2-WT
A	2070	2070	2070
A'	1245	1245	1245
B	1117	1117	1117
C	1685	1685	1685
D	1600	1600	1600
E	820	820	820
F	529	529	529
G	1312	1312	1312

Depending on the specifications or options that have been chosen, your model may differ slightly from the one in the photograph and outline.

# 6AYL [ IMO TierⅢ ]

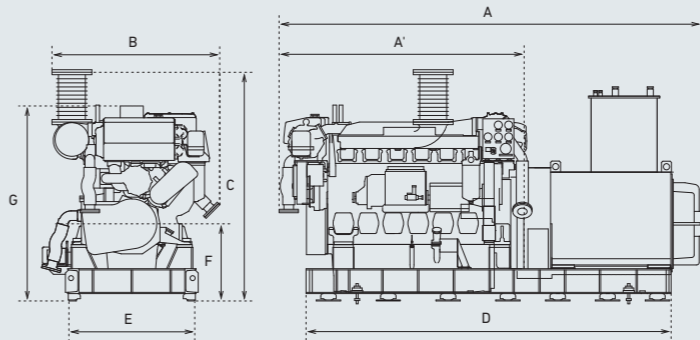
Generator Capacity 320~450kWe



### Specifications

Engine Model	6AYL-WST		6AYL-WET
Type	Vertical, Water-cooled, 4-stroke Diesel		
No. of Cylinders	In-line 6		
Cylinder Bore×Stroke [mm]	155×180		
Continuous Rated Output [kW (PS)]	353 (480)	438 (596)	491 (668)
Generator Capacity [kWe (kVA)]	320 (400)	400 (500)	450 (562.5)
Engine Speed [min-1]	1800	1500	1800
Combustion system	Direct injection		
Starting system	Electric Starting or Air-motor starting		
Dry Weight [kg]	2475	2475	
Total Weight ( Gen.Set ) [kg]	4600	4750	

The engine dry weight may differ depending upon the specifications and attached accessories.  
Above generator capacity will vary according to actual generator efficiency.



G : Minimum Height for Removing Piston ( Not included the dimension for bolt fitting to piston remove. )

### Dimensions [mm]

Models	6AYL-WST	6AYL-WET
A	2970	3040
A'	1860	1860
B	1445	1445
C	1836	1836
D	2540	2600
E	1030	1030
F	619	619
G	1565	1565

Depending on the specifications or options that have been chosen, your model may differ slightly from the one in the photograph and outline.

# 6HAL2

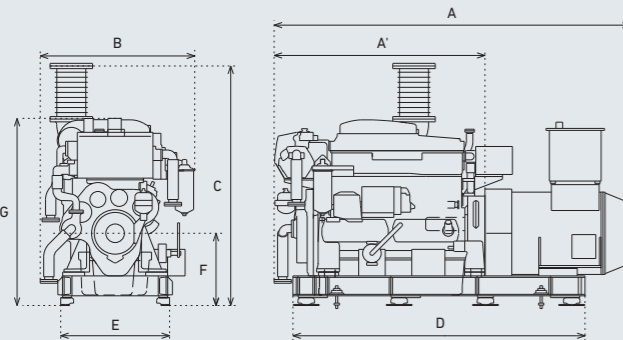
Generator Capacity 80~280kWe



### Specifications

Engine Model	6HAL2-N		6HAL2-TN		6HAL2-WT		6HAL2-WHT		6HAL2-WDT		
Type	Vertical, Water-cooled, 4-stroke Diesel										
No. of Cylinders	In-line 6										
Cylinder Bore×Stroke [mm]	130×165										
Continuous Rated Output [kW (PS)]	90 (122)	115 (156)	120 (163)	150 (204)	180 (244)	160 (217)	220 (299)	265 (360)	200 (271)	255 (346)	305 (414)
Generator Capacity [kWe (kVA)]	80 (100)	100 (125)	104 (130)	136 (170)	160 (200)	144 (180)	200 (250)	240 (300)	180 (225)	232 (290)	280 (350)
Engine Speed [min-1]	1200	1500	1200	1500	1800	1200	1500	1800	1200	1500	1800
Combustion system	Direct injection										
Starting system	Electric Starting or Air-motor starting										
Dry Weight [kg]	1380		1422		1437		1447				
Total Weight ( Gen.Set ) [kg]	2360		2410		2750		2850				

The engine dry weight may differ depending upon the specifications and attached accessories.  
Above generator capacity will vary according to actual generator efficiency.



G : Minimum Height for Removing Piston ( Not included the dimension for bolt fitting to piston remove. )

### Dimensions [mm]

Models	6HAL2-N	6HAL2-TN	6HAL2-WT	6HAL2-WHT	6HAL2-WDT
A	2499	2499	2499	2574	2684
A'	1589	1589	1589	1589	1589
B	1164	1164	1164	1164	1164
C	1654	1774	1774	1804	1804
D	2100	2100	2100	2200	2200
E	820	820	820	820	820
F	544	544	544	544	544
G	1327	1327	1327	1327	1327

Depending on the specifications or options that have been chosen, your model may differ slightly from the one in the photograph and outline.

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• Before using, be sure to read the handling instructions carefully and use correctly. • Be sure to conduct periodic inspection to preventing trouble and accidents. • Do not cut the seal and operate the engine forcibly. This will shorten the engine's life and may lead to trouble or accidents. • Use the fuel and lube oils, fresh water, etc. recommended in our operation manual. Use of non-specified items can cause trouble or accidents.

• Specifications in this catalogue are subject to change without notice in order to incorporate improvements, etc.  
• Product colors in this catalogue may differ slightly from those of actual products. • Photograph may show optional equipment.