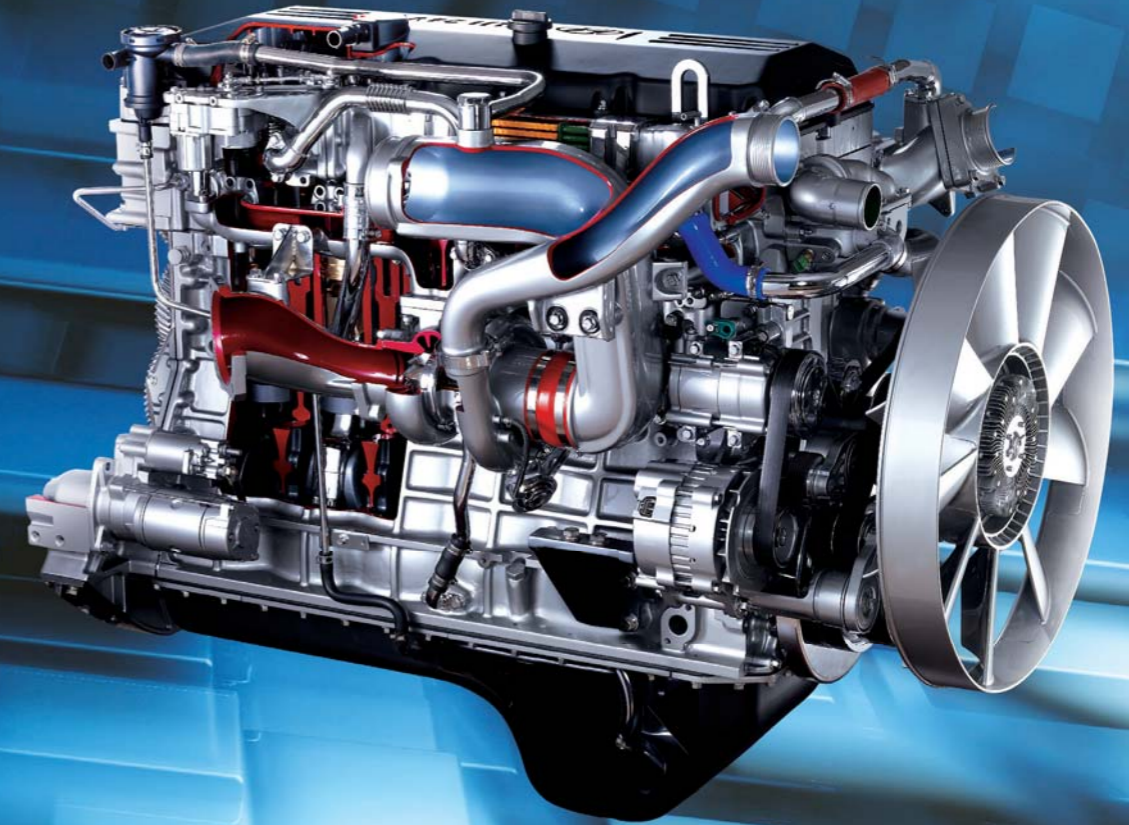


## NEW THINKING. NEW POSSIBILITIES.

People's expectation toward individual mobility requires more than just a convenient means of transportation. The old understanding of cars has become outdated. A car represents individuals' lifestyles, and it became an integral part of their lives. At the same time, the automobile industry has experienced seismic change. Hyundai Motor Company has grown rapidly to become one of the largest automakers, backed by world class production capability and superior quality. We have now reached a point where we need a qualitative approach to bring bigger ideas and relevant solutions to our customers. This is an opportunity to move forward and we have developed a new brand slogan that encapsulates our willingness to take a big leap. Led by our new slogan and the new thinking underlying it, we will become a company that keeps challenging itself to unlock new possibilities for people and the planet.

 **HYUNDAI** | NEW THINKING.  
NEW POSSIBILITIES.

# HYUNDAI ENGINE



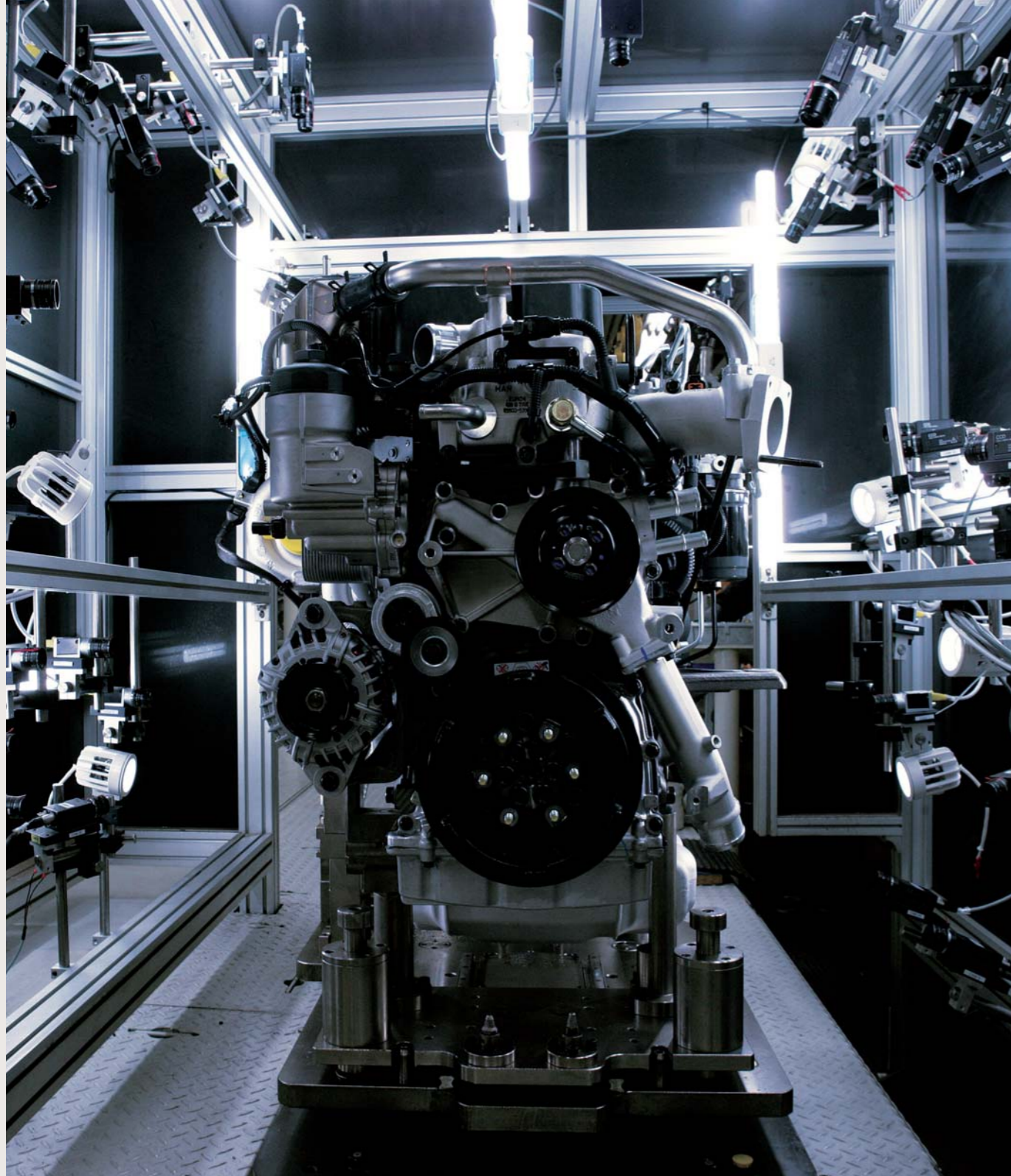
 **HYUNDAI** | NEW THINKING.  
NEW POSSIBILITIES.

**Hyundai Motor Company**  
12,Heolleung-ro, Seochogu, Seoul, Korea 06797, Special Vehicle Team  
Tel : 82-2-3464-3321~3324 | Fax : 82-2-3464-3502

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2016.12 CP / ENG





## The Strengths of HMC Industrial Engines

When it comes to the strengths of HMC's industrial engines, one can easily list the following three points. HMC has accomplished economies of scale with manufacturing capacity of over 5 million units per year. This allows stable supply of engines at competitive prices. HMC engines are of the best quality and performance. Behind the positive ratings of Hyundai Motors by JD Power,

AutoPacific and many other automotive rating organizations lie the high-quality engines. The strength of HMC engine is the diverse engine line-up ranging from gasoline engines (53~375hp), diesel engines (40~530 hp), to CNG engines that can easily meet our clients' various needs. In addition, HMC's engines are also eco-friendly and conform to all the international standards that are getting tougher and tougher.

## HYUNDAI ENGINE IS YOUR PARTNER TO SUCCESS



### World's largest scale commercial vehicle production plant-Jeonju Plant

The Jeonju Plant occupies a total of 400,000 pyong (317 acres) of land and has 4.3 million sq. ft. in production space. It specializes in producing mid to large-sized buses, trucks and specialty vehicles.

The Jeonju Plant is capable of producing 100,000 vehicles per year and in terms of the plant's scale, it is deemed to be the world's largest commercial vehicle production plant.

In order to facilitate the development of eco-friendly new products that can satisfy the demands of the international export markets in the 21st century and the development of environmentally-conscious management systems, the Jeonju Plant is making an all-out effort.



### The Ulsan Plant-the world's single largest automobile plant in the world

The mammoth-sized Ulsan complex sits on a 1,200 acres site and it is Hyundai's main production plant comprised of five independent plants capable of producing 1,392,000 vehicles per year. This plant has over 35,000 employees and its annual average production capacity is 1,392,000 vehicles. The plant also has its own port where up to three 50,000 ton ships can anchor at the same time. Being the world's largest in scale of its kind, the Ulsan plant is the birth place of the Korean automobile industry and is a self-contained facility that operates its own fire station, hospital and security vehicles. The Ulsan Plant is also equipped with cutting-edge facilities to protect the environment, such as a waste water and sewage treatment plant securing Hyundai's position as a green-minded company.



### A Facility of the Future Focusing on export strategy-Asan Plant

The Asan Plant, which mainly produces passenger vehicles for export, rests on a 440 acres site with a 4 million sq. ft. building that consists of production lines for machine press, auto frame, paint, assembly, engine and a materials plant. It is an entirely self contained independent automobile production complex that is capable of an output of 300,000 mid to large size passenger vehicles annually. The Asan plant was established with the grand proposition of creating a safety-first work environment which is people oriented all the while putting into practice our management philosophy of eco-friendliness.



# Tier-4 Diesel Engines

Hyundai's capacity for research and development has led to mass production of various engines since Hyundai produced its own automobile Alpha engine for the first time in Korea in 1991. Upon this foundation we launch the industrial engines of R 2.2 and F 3.9 which are eco-friendly and famous for their durability, reliability and economy.

Through the technology of performance-proven automobile engines, we have developed these two industrial engines of R 2.2 and F 3.9 which squeeze the maximum amount of energy out of each drop of fuel and provide fantastic pulling power across a wide rpm range. These engines satisfy Korea Tier-4 regulation applying common rail direct injection system, exhaust gas recycling device, three way catalytic convertor and NOx reduction technology.

Many customers are satisfied with the quality and the performance of Hyundai's Tier-4 diesel engines and we anticipate an increase in the demand for these engines.



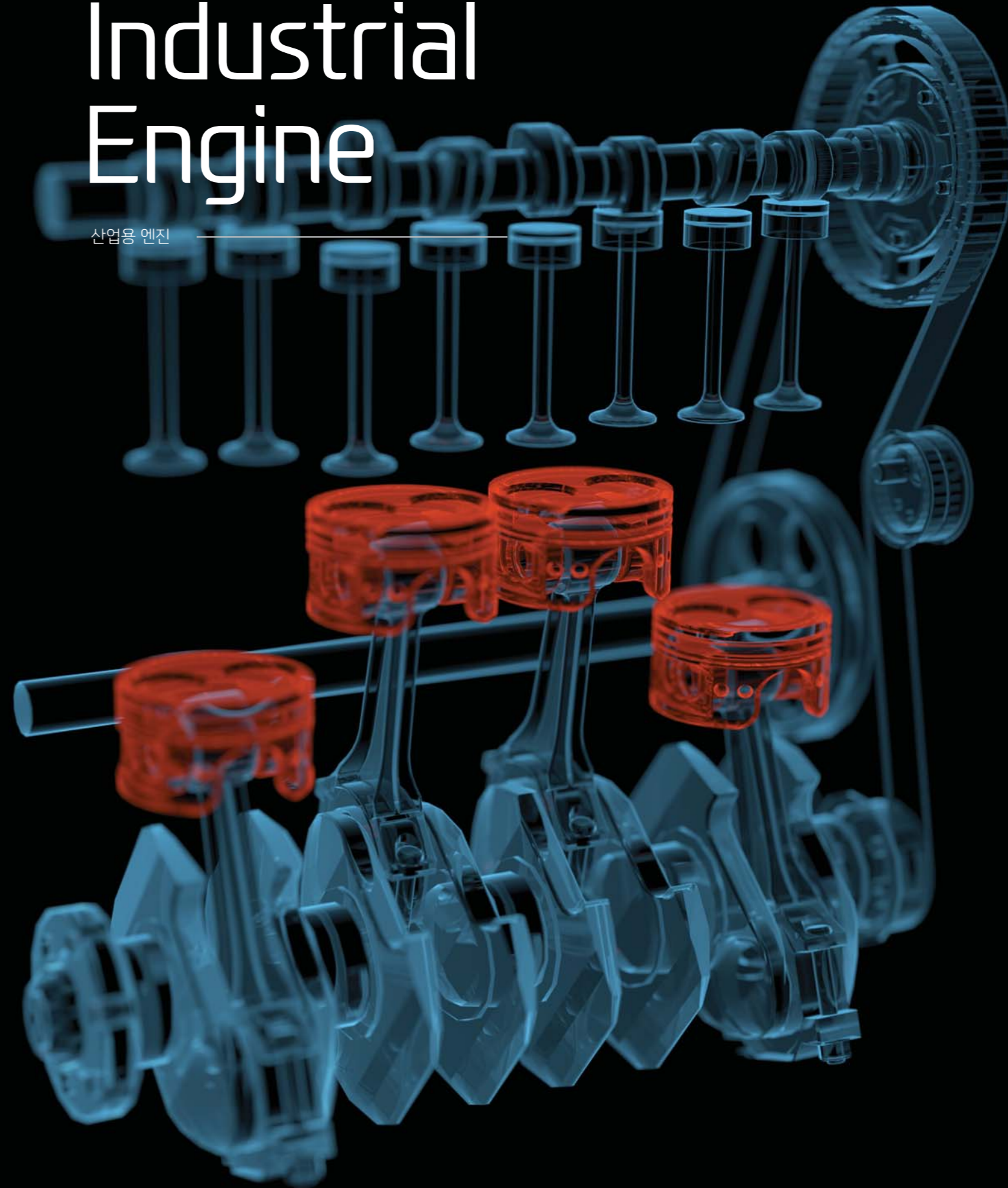
**NEW** R 2.2  
**D4HB-C1**  
65PS/24.1kg·m



**NEW** F 3.9  
**D4GB-C1**  
110PS/42kg·m

# Industrial Engine

산업용 엔진





# D4BB-C4

53PS/16.8kg.m

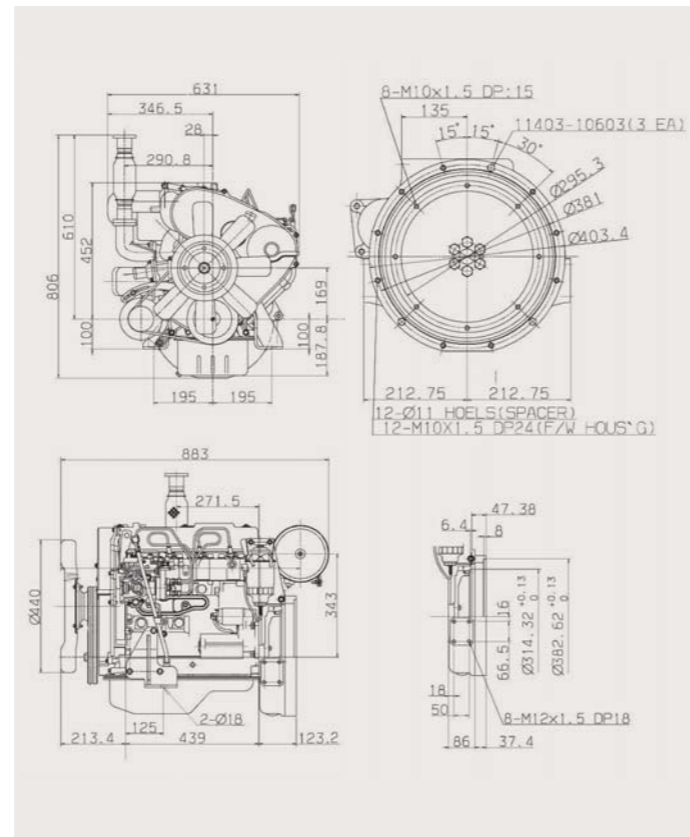
Industrial Engine



## Specifications

Engine model		D4BB-C4(AG35)
Engine type		4 Cycle, water cooled
Injection type		Indirect injection
No. of cyl. And configuration		4-in line
Aspiration		Π.A
Displacement (cc)		2,607
Bore × Stroke (mm)		91.1 × 100
Compression ratio		22 : 1
Dry weight (kg)		200
Dimension	Length (mm)	883
	Width (mm)	631
	Height (mm)	806
Max power	PS/rpm	53/2,500
Max torque	kg.m/rpm	16.8/1,600
Governor		-
Alternator		12V - 65A
Starting motor		12V - 2.2kW
Certification		EC Stage-3A / China Tier-2
Application		Construction equipment Agricultural machinery

## General View of Engine



# D4BB-C8

64PS/19.2kg.m

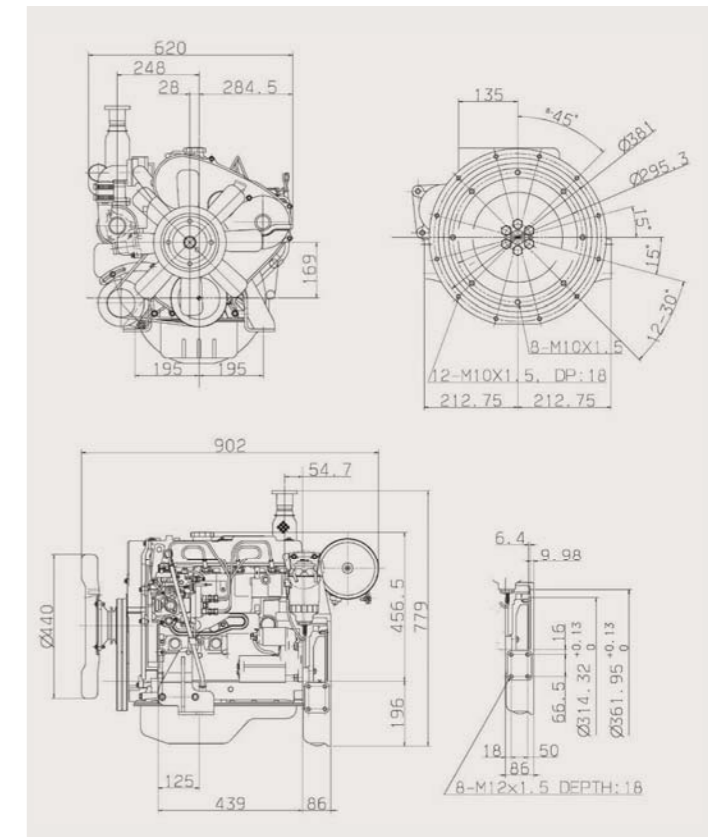
Industrial Engine



## Specifications

Engine model		D4BB-C8(AG50)
Engine type		4 Cycle, water cooled
Injection type		Indirect injection
No. of cyl. And configuration		4-in line
Aspiration		T.C
Displacement (cc)		2,607
Bore × Stroke (mm)		91.1 × 100
Compression ratio		22 : 1
Dry weight (kg)		215
Dimension	Length (mm)	902
	Width (mm)	620
	Height (mm)	779
Max power	PS/rpm	64/2,500
Max torque	kg.m/rpm	19.9/2,000
Governor		-
Alternator		12V - 65A
Starting motor		12V - 2.2kW
Certification		-
Application		Construction equipment Agricultural machinery

## General View of Engine





# D4BB-P1

40PS/15kg.m

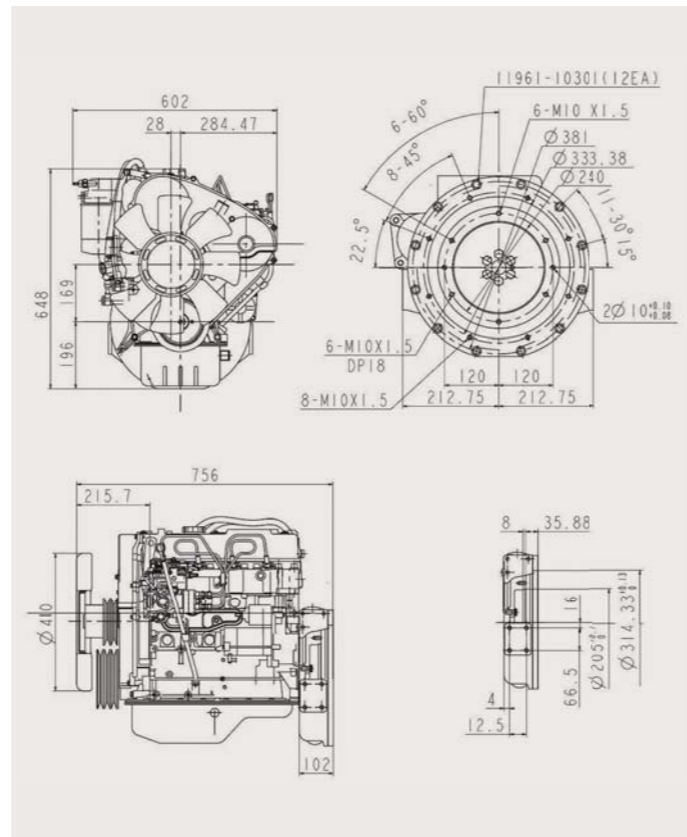
Industrial Engine



## Specifications

Engine model		D4BB-P1(AG32)
Engine type		4 Cycle, water cooled
Injection type		Indirect injection
No. of cyl. And configuration		4-in line
Aspiration		Π.A
Displacement (cc)		2,607
Bore × Stroke (mm)		91.1 × 100
Compression ratio		22 : 1
Dry weight (kg)		200
Dimension	Length (mm)	756
	Width (mm)	602
	Height (mm)	648
Max power	PS/rpm	40/2,000
Max torque	kg.m/rpm	15/1,500
Governor		-
Alternator		-
Starting motor		24V - 5.0kW
Certification		-
Application		Bus cooler

## General View of Engine



# G4FC-F1

55PS/13.9kg.m

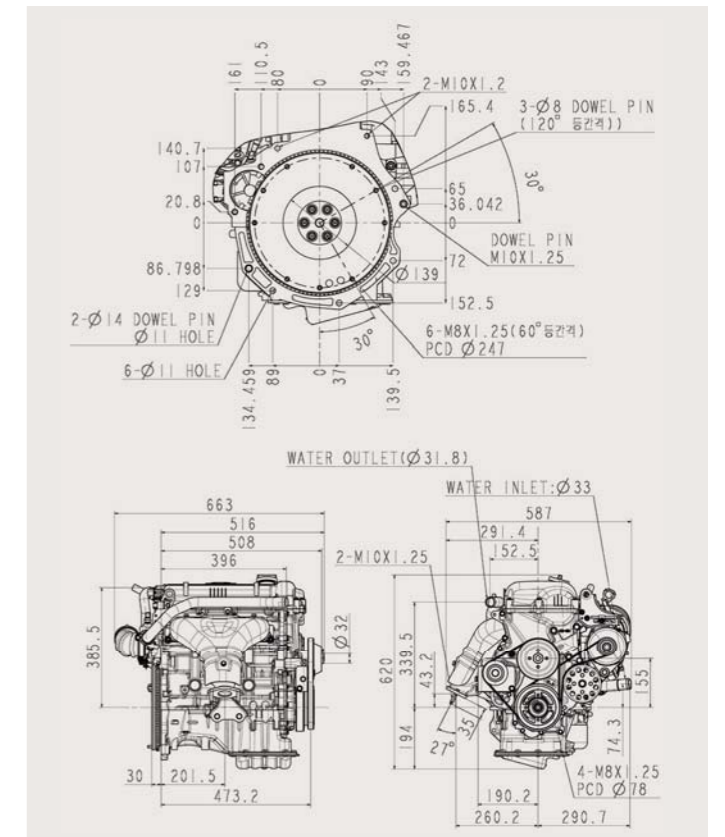
Industrial Engine



## Specifications

Engine model		G4FC-F1(NG97)
Engine type		4 Cycle, water cooled
Injection type		MPI
No. of cyl. And configuration		4-in line
Aspiration		Π.A
Displacement (cc)		1,591
Bore × Stroke (mm)		77.0 × 85.44
Compression ratio		10.5 : 1
Dry weight (kg)		95
Dimension	Length (mm)	663
	Width (mm)	587
	Height (mm)	620
Max power	PS/rpm	55/2,800
Max torque	kg.m/rpm	13.9/2,800
Governor		-
Alternator		13.5V - 90A
Starting motor		12V - 0.9kW
Certification		-
Application		Speed sprayer

## General View of Engine

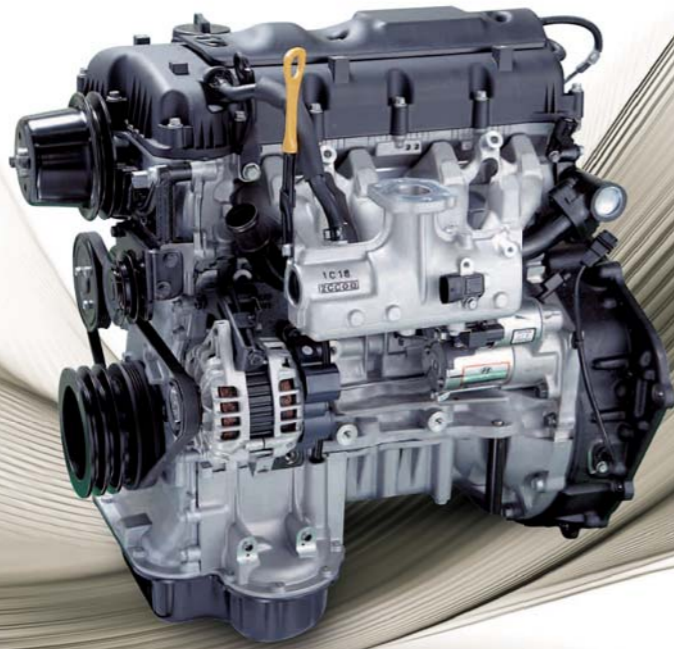




# L4KB-C1

65PS/18.5kg.m

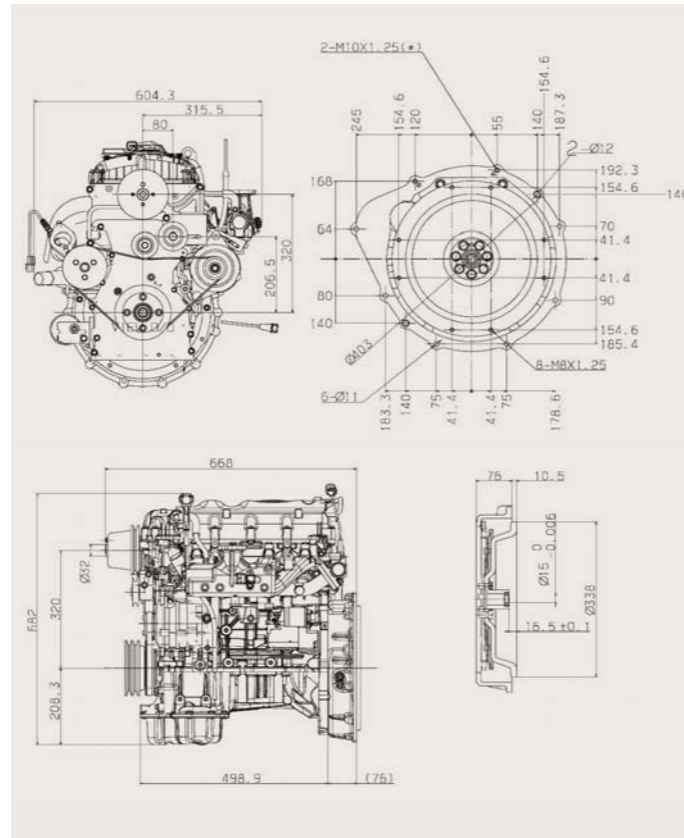
Industrial Engine



## Specifications

Engine model	L4KB-C1(CF11)	
Engine type	4 Cycle, water cooled	
Injection type	-	
No. of cyl. And configuration	4-in line	
Aspiration	N.A	
Displacement (cc)	2,359	
Bore × Stroke (mm)	88.0 × 97.0	
Compression ratio	10.5 : 1	
Dry weight (kg)	153	
Dimension	Length (mm)	668
	Width (mm)	604
	Height (mm)	682
Max power	PS/rpm	65/2,500
Max torque	kg.m/rpm	18.5/1,600
Governor	-	
Alternator	13.5V - 90A	
Starting motor	12V - 1.4kW	
Certification	EPA Tier-4	
Application	Forklift truck	

## General View of Engine



# D4HB-C1

65PS/24.1kg.m

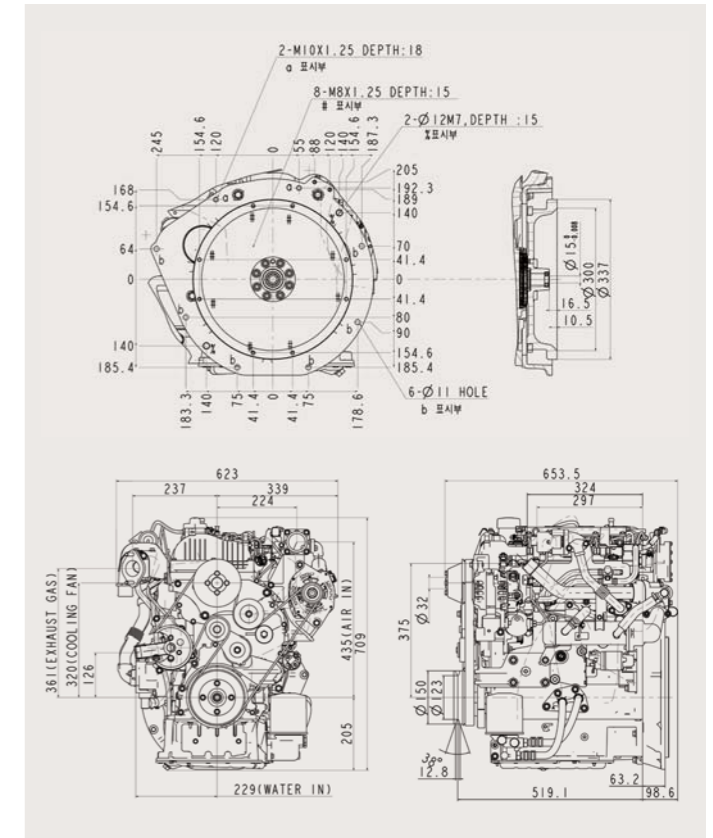
Industrial Engine



## Specifications

Engine model	D4HB-C1(KS95)	
Engine type	4 Cycle, water cooled	
Injection type	CRDi	
No. of cyl. And configuration	4-in line	
Aspiration	TCl	
Displacement (cc)	2,199	
Bore × Stroke (mm)	85.4 × 96.0	
Compression ratio	16:01	
Dry weight (kg)	210	
Dimension	Length (mm)	654
	Width (mm)	623
	Height (mm)	709
Max power	PS/rpm	65.0/2,300
Max torque	kg.m/rpm	24.1/1,600
Governor	ECU	
Alternator	13.5V - 90A	
Starting motor	12V - 2.0kW	
Certification	DOM Tier-4	
Application	Forklift truck	

## General View of Engine





# D4AK-P

85PS/25.5kg.m

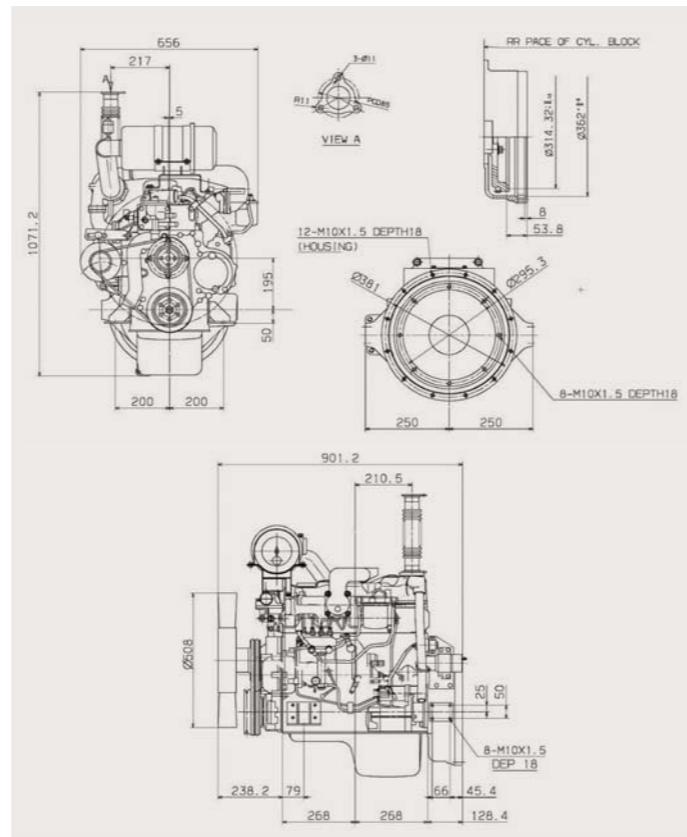
Industrial Engine



## Specifications

Engine model		D4AK-P(EM2B)
Engine type		4 Cycle, water cooled
Injection type		Direct injection
No. of cyl. And configuration		4-in line
Aspiration		T.C
Displacement (cc)		3,298
Bore × Stroke (mm)		100 × 105
Compression ratio		16 : 1
Dry weight (kg)		334
Dimension	Length (mm)	901
	Width (mm)	656
	Height (mm)	1,071
Max power	PS/rpm	85/2,400
Max torque	kg.m/rpm	25.5/1,800
Governor		Bosch RSV type
Alternator		24V - 50A
Starting motor		24V - 5.0kW
Certification		-
Application		Pump, General power use

## General View of Engine



# D4DA-P

100PS/37kg.m

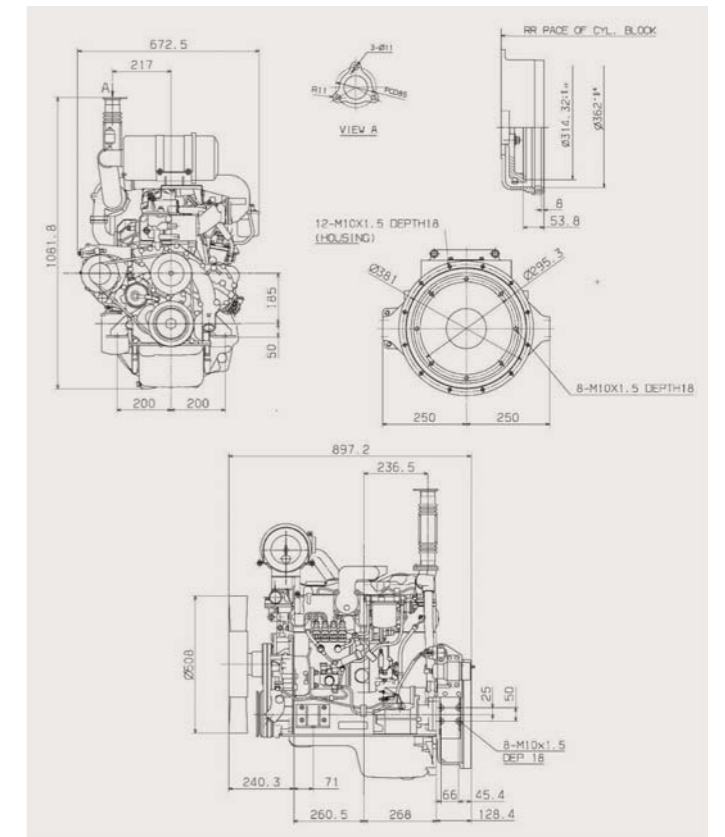
Industrial Engine



## Specifications

Engine model		D4DA-P(EM1P)
Engine type		4 Cycle, water cooled
Injection type		Direct injection
No. of cyl. And configuration		4-in line
Aspiration		T.C
Displacement (cc)		3,907
Bore × Stroke (mm)		104 × 115
Compression ratio		16.5 : 1
Dry weight (kg)		350
Dimension	Length (mm)	897
	Width (mm)	673
	Height (mm)	1,082
Max power	PS/rpm	100/2,000
Max torque	kg.m/rpm	37/1,700
Governor		Bosch RSV type
Alternator		24V - 40A
Starting motor		24V - 5.0kW
Certification		-
Application		Pump, General power use

## General View of Engine





# D4GB-C1

110PS/42kg.m

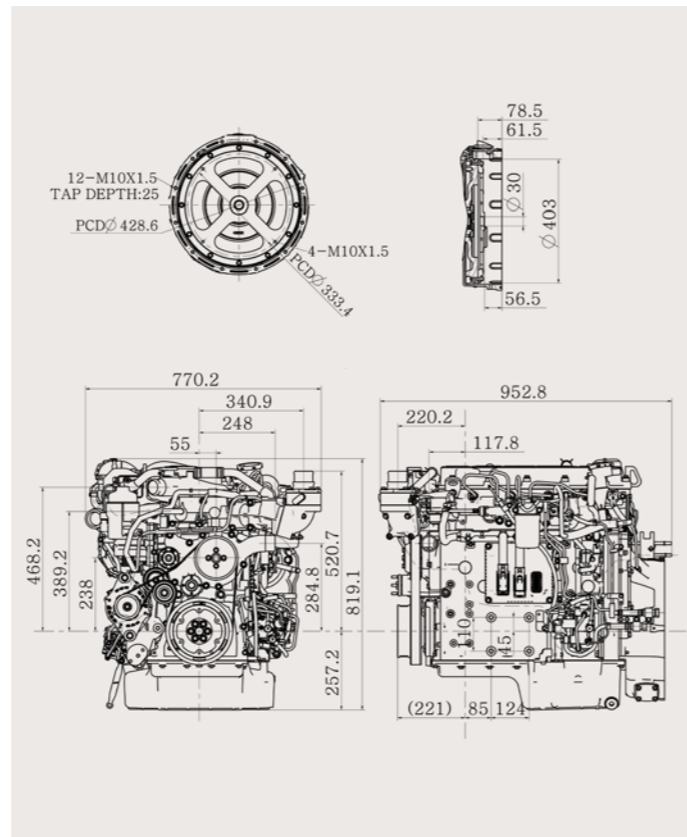
Industrial Engine



## Specifications

Engine model		D4GB-C1(QF99)
Engine type		4 Cycle, water cooled
Injection type		CRDi
No. of cyl. And configuration		4-in line
Aspiration		T.CI
Displacement (cc)		3,933
Bore × Stroke (mm)		103 × 118
Compression ratio		17.1 : 1
Dry weight (kg)		430
Dimension	Length (mm)	953
	Width (mm)	770
	Height (mm)	819
Max power	PS/rpm	110/2,250
Max torque	kg.m/rpm	42/1,600
Governor		ECU
Alternator		24V - 70A
Starting motor		24V - 5.5Kw
Certification		KOR Tier-4
Application		Forklift

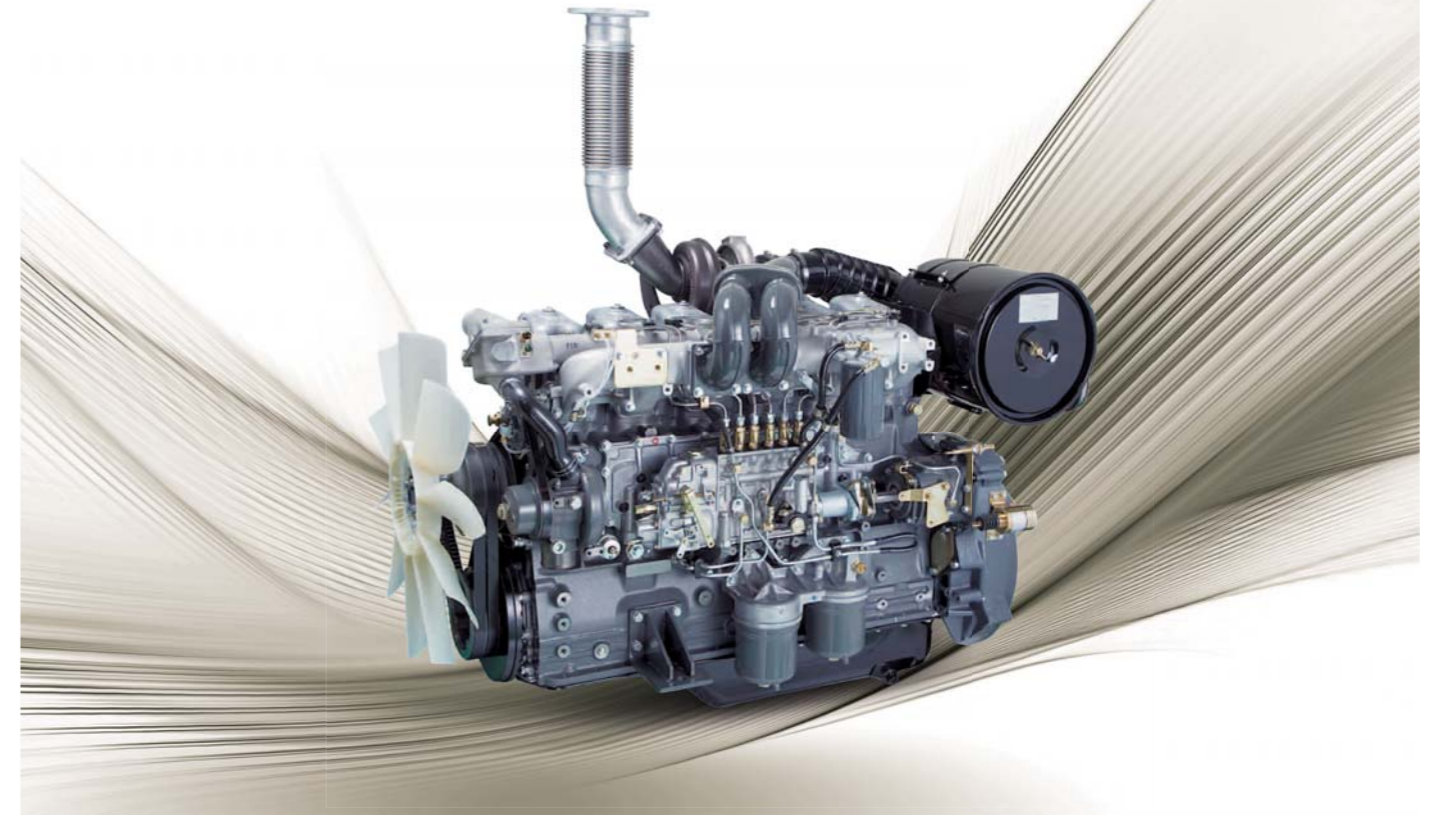
## General View of Engine



# D6AZ-P

280PS/115kg.m

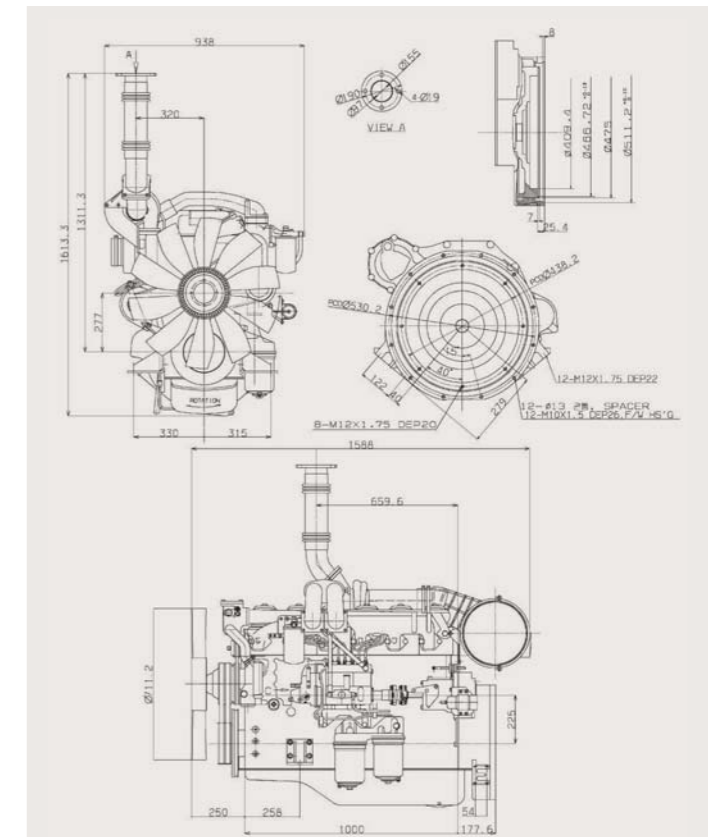
Industrial Engine



## Specifications

Engine model		D6AZ-P(EH3P)
Engine type		4 Cycle, water cooled
Injection type		Direct injection
No. of cyl. And configuration		6-in line
Aspiration		T.C
Displacement (cc)		11,149
Bore × Stroke (mm)		130 × 140
Compression ratio		16.5 : 1
Dry weight (kg)		1,010
Dimension	Length (mm)	1,588
	Width (mm)	938
	Height (mm)	1,613
Max power	PS/rpm	280/2,100
Max torque	kg.m/rpm	115/1,400
Governor		Bosch RSV type
Alternator		24V - 70A
Starting motor		24V - 5.5kW
Certification		-
Application		Pump, General power use

## General View of Engine





# Industrial Engine

Engine model	D4BB-C1	D4BB-C2	D4BB-C4	D4BB-C8	D4BB-C5	D4BB-C7	D4BB-M	D4BB-P1	D4BB-G6	D4BB-P9
Engine code	AG90	AG89	AG35	AG50	AG43	AG45	AG36	AG32	AH23	AH24

## General

Fuel	Diesel										
Injection type	Indirect injection										
No. of cyl. And configuration	4-in line										
Aspiration	N.A			T.C	N.A			T.C(N.A)	T.C		
Displacement (cc)	2,607										
Bore x Stroke (mm)	91.1 x 100										
Compression ratio	22 : 1										
Dry weight (kg)	200	200	200	215	200	200	190	200	200	207	
Dimension (mm)	Length	669	756	883	902	683	655	615	756	780	738
	Width	602	602	631	620	611	602	597	602	604	604
	Height	648	648	806	779	659	660	633	648	844	844

## Performance

Max power (PS/rpm)	53/2,500	47/2,400	53/2,500	64/2,500	53/2,500	53/2,500	80/4,000	40/2,000	64/2,500	38.6/1,600
Max torque (kg.m/rpm)	16.8/1,600	14.3/2,300	16.8/1,600	19.9/2,000	16.8/1,600	16.8/1,600	17/2,200	15/1,500	19.9/2,000	17.3/1,600

## Specifications

Cooling water capacity (ℓ)	3.9									
Oil capacity (ℓ)	5.4									
Governor	-									
Alternator	12V - 65A			13.5V-70A	12V-65A	-		12V-65A	-	
Starting motor	12V - 2.2kW						12V - 2.0kW	24V - 5.0kW	12V - 2.2kW	
rpm	2,500	2,400	2,500	2,500	2,500	2,500	4,000	2,000	2,500	1,600
Fuel consumption (g/ps.h)	182.0	177.0	182.0	180.0	182.0	182.0	220.0	177.1	180.0	187.9

## Performance

Certification	EC Stage-3A	-	EC Stage-3A	-	EC Stage-3A	-	-	-	-	-
	China Tier-2	-	China Tier-2	-	China Tier-2	-	-	-	-	-
Application	Speed sprayer	Construction equipment Agricultural machinery			Forklift truck	Marine	Bus cooler	General Power	Fire pump	

Engine model	G4FC-F1	L4KB-C1	D4HB-C1	D4AK-P	D4DA-P	D4DD-C	D4GB-C1	D6AZ-P	D6AC-C	D6CC-P
Engine code	PG97	CF11	KS95	EM2B	EM1P	EM2G	QF99	EH3P	EH3Π	EH5G

## General

Fuel	Gasoline	LPG	Diesel	Diesel			Diesel	Diesel		Diesel	
Injection type	MPI	-	CRDi	Direct injection			Direct injection	Direct injection		Direct injection	
No. of cyl. And configuration	4-in line	4-in line	4-in line	4-in line			4-in line	6-in line		6-in line	
Aspiration	N.A	N.A	T.C.I	T.C		T.C.I	T.C.I	T.C	T.C.I	T.C.I	
Displacement (cc)	1,591	2,359	2,199	3,298	3,907	3,907	3,933	11,149		12,344	
Bore x Stroke (mm)	77.0 x 85.44	88.0 x 97.0	85.4 x 96.0	100 x 105	104 x 115	104 x 115	103 x 118	130 x 140		130 x 155	
Compression ratio	10.5 : 1	10.5 : 1	16 : 1	16 : 1	16.5 : 1	17.5 : 1	17.1 : 1	16.5 : 1		17.2 : 1	
Dry weight (kg)	95	153	210	334	350	345	430	1,010	1,050	1,148	
Dimension (mm)	Length	663	668	654	901	897	834	953	1,588	1,415	1,600
	Width	587	604	623	656	673	663	770	938	926	897
	Height	620	682	709	1,071	1,082	800	819	1,613	1,226	1,105

## Performance

Max power (PS/rpm)	55/2,800	65/2,500	65/2,300	85/2,400	100/2,000	100/2,300	110/2,250	280/2,100	280/1,900	440/2,000
Max torque (kg.m/rpm)	13.9/2,800	18.5/1,600	24.1/1,600	25.5/1,800	37/1,700	38/1,600	42/1,600	115/1,400	120/1,400	216/1,200

## Specifications

Cooling water capacity (ℓ)	3.0	2.2	5.0	8.3			8.1	22.0	22.0	42.0
Oil capacity (ℓ)	3.3	5.1	6.3	8.5			14.0	24.0	27.3	28.0
Governor	-	-	ECU	Bosch RSV type		ECU	ECU	Bosch RSV type		ECU
Alternator	13.5V - 90A	13.5V - 90A	13.5V - 90A	24V - 50A	24V - 40A	24V - 50A	24V-70A	24V - 70A		24V - 80A
Starting motor	12V - 0.9kW	12V - 1.4kW	12V - 2.0kW	24V - 5.0kW			24V-5.5kW	24V - 5.5kW		24V - 6.0kW
rpm	2,800	-	2,450	2,400	2,300	1,700	2,250	2,100	1,400	2,000
Fuel consumption (g/ps.h)	207.4	-	161.0	171.0	157.0	139.2	159.0	162.0	143.0	158

## Performance

Certification	-	EPA Tier-4	KOR Tier-4	-	-	EC Stage-3A	KOR Tier-4	-	-	-
	-	-	-	-	-	EPA Tier-3	-	-	-	-
Application	Speed sprayer	Forklift truck	Forklift truck	Pump, General power use		Forklift truck	Forklift truck	Pump	Excavator	Transporter