Rev.
0

ENGINE SPECIFICATIONS

Engine Model	Base Model :	AH-6HK1X (Intercooler turbo)
	Model No. :	AH-6HK1XYBW-03
Customer	EXPORT	
Application	General power	
Drawing No. (3D Data Code)	E3-1032-045-0	

Symbol	Date	Revision Record	Issue No.
0	22 Sep. 2008	For confirmation of prototype specification	

ISUZU MOTORS LIMITED Powertrain Business Dept.	Approval	Check	Issue
	S.Nogami	H.Harada	K.Ogawa
	S.Nogami Group Leader	H.Harada Manager	K.Ogawa

Engine Specifications

Model No. AH-6HK1XYBW-03

Rev. 0

Manufacturer	ISUZU MOTORS LIMITED
Engine Model	Base Model: 6HK1X Intercooler Turbo Model No. AH-6HK1XYBW-03
Application	General power
Emission regulation	EPA Tier-3 / EC Stage-IIIA
Engine type	Four cycle, water cooled, overhead camshaft, vertical in-line, direct injection type, with turbocharger
No. of cylinders - bore x stroke	6 - 115.0 mm x 125.0 mm
Total piston displacement	7.790 L
Compression ratio	17.5 to 1

Engine performance	Rating
Test conditions	Standard atmospheric condition
Conforming standard JPN;JIS D0006-1 US;SAEJ1349 EU;ISO15550	Break-in time 30 hrs With AC generator and Without cooling fan With air cleaner and exh. silencer Fuel : JPN: JIS-NO.2

Rated Output	: 212 ± 4 kW / 2000 min-1
Droop point	: 183.1 ± 8.7 kW / 2050 min-1
Maximum Torque	: 1125 ± 60 Nm / 1500 min-1
Fuel consumption at rated.	: 214 ± 13.6 g/kw.h
No load max. speed	: 2050 ± 20 min-1
Low idle speed	: 900 ± 20 min-1

Type of fuel	Diesel fuel only (JPN:JIS-NO.2, US:ASTM-2D, EU:EN590)
Engine dry weight	Approx. 640 kg
Dimensions	L 1362 x W 864.8 x H 1074.3 (with cooling fan)
Firing order	1 - 5 - 3 - 6 - 2 - 4
Rotating direction	Clockwise viewed from cooling fan
Valve device	Overhead camshaft

Engine Specifications Model No. AH-6HK1XYBW-03

Rev. 0

Supercharging device	With
Supercharging system	Exhaust turbocharger
Driving system	---
Lubricating system	Full forced pressure feed type（Oil-cooled)
Manufacturer	ISIKAWAJIMA HARIMA HEAVY INDUSTRIES, LTD.
Name of type	RHG6 without waist gate

Fuel device	
Injection pump	
Manufacturer	Denso corporation
Name of type	Common rail HP4 type
Plunger	3 - Diameter 8.5 mm x Stroke 8.8 mm (Lubricated by fuel oil)
Injection nozzle	
Manufacturer	Denso corporation
Name of type	Electrical multi-hole type (G2 type)
Fuel injection time regulator	Electrical controlled
Manufacturer	---
Name of type	---
Fuel feed pump	With
Manufacturer	Denso corporation
Name of type	Rotary type (Lubricated by fuel oil)
Fuel filter	With (Loose part)
Filtering system	Paper element type (With priming pump and water separator)
Manufacturer	WAKO INDUSTRIAL CO.,LTD
Name of type	Cartridge type
Governor	
Speed control system	Electrical variable speed control
Lubricating system	---
Manufacturer	TRANSTRON Inc.
Name of type	Electrical control type

Engine Specifications Model No. AH-6HK1XYBW-03

Rev. 0

Lubricating device

Lubricating system	Full forced pressure feed type
Lubricating pump	
Type of pump	Gear pump
Driving system	Crank gear driven
Oil pressure regulating device	Piston - spring type
Oil pressure indicating device	With engine oil pressure sensor
Oil filter	
Filtering system	Full flow paper element (Spin-on, without drain plug)
Manufacturer	Nippon Donaldson,Ltd
Oil cooler	
Cooling system	Water cooled type (Built-in Engine)
Manufacturer	TOKYO ROKI CO.,LTD

Cooling device

Cooling system	Pressurized water forced circulation type
Cooling fan	
Type of fan	Without
Driving system	---
Water pump	
Type of pump	Impeller type
Driving system	Belt driven by crankshaft pulley
Thermostat	
Regulating system	Wax-pellet type
Manufacturer	Fuji Bellows Co., Ltd.
Water temperature indicating device	With engine coolant water temperature sensor

Engine Specifications Model No. AH-6HK1XYBW-03

Rev. 0

Air cleaner	---
Cleaning system	---
Manufacturer	---
Starting device	
Starting motor	
Manufacturer	Denso corporation
Name of type	Reduction type
Voltage	12 V
Output	3.0 kW
Engine stop device	Fuel cut (Electronic controlled)
Preheating device	QOS-Ⅱ
Alternator	
Generating system	A/C type
Manufacturer	Denso corporation
Voltage	12V
Output	110A
Driving system	Belt driven by crankshaft pulley
Regulator	
Regulating system	Built-in IC regulator
Manufacturer	Denso corporation
Charging discharging indicating system: ---	
Hour meter	Without
System	---
Manufacturer	---
Fitting position	---
Driving system	---
Speed ratio	---
Rated speed indicator	---
Power Take Off	With
Maximum torque	98Nm
Speed ratio	ENG : PTO = 1 : 1.13
Rotation	Clockwise (Viewed from front)
Flange type	SAE B
Spline number of teeth	13
Diametric pitch	16/32
Pressure angle	30 deg

Engine Specifications Model No. AH-6HK1XYBW-03

Rev. 0

Allowable inclination angle 0.52 rad. for all directions viewed from flywheel

Capacity

Lubrication oil	MAX: approx. 38.0 L MIN: approx. 28.0 L (Oil pan only)
Air cleaner	---
Injection pump	---
Governor	---
Cooling water	14.5 L (Engine only)
Others	---

Maintenance data

Valve clearance and adjustment

Valve	Valve clearance	Valve timing: open	Valve timing: close
Inlet	0.4 mm at cold	0.30 rad BTDC	0.73 rad ABDC
Exhaust	0.4 mm at cold	0.84 rad BBDC	0.24 rad ATDC

Injection timing	Electrical control
Initial injection pressure	---
Compressive pressure	3.04 MPa (31 kgf/cm2） (At engine speed 200 min-1)

Reference data

Thermostat	Initial opening temperature at atmospheric pressure: 82.0℃ Temperature at valve lift of 10.0 mm and over: 95.0℃
Painting color	Clear, except for cooling fan, electrical part connectors, and labels
Lubricating oil at delivery	There is no engine oil when engine deliver from Isuzu factory.
Recommended lubrication oil	API Grade CD, CE, CF, CF-4 or ACEA Grade B2/B3, E2/E3 *Please refer to "Engine Instruction Manual" for details.

Engine Specifications

Model No. AH-6HK1XYBW-03

Rev. 0

Dress Level

No.	Item	Description
1	HOUSING ; FLYWHEEL	SAE J617c #2 short length type
2	FLYWHEEL	SAE J620 11.5"
3	OIL PAN	Center sump
4	COOLING FAN	Without
5	AC GENERATOR	12V-110A
6	STARTER	12V-3kW
7	FUEL FILTER	Loose parts (Remote type)
8	WATER SEDIMENTER	With (Integrated with fuel filter)
9	OIL FILTER	Spin-on, Co
10	FAN BELT	POC=1240
11	FUEL FEED PUMP;Elc.	Loose parts (Remote type)
12	POWER TAKE OFF	With
13	FUEL FILTER ASM;PRE.	Loose parts (Remote type)

Engine Specifications

Model No. AH-6HK1XYBW-03

Rev. 0

Loose parts

No.	Parts No.	Item	Qty	Remarks
1	582553-0444	RELAY;STARTER	1	
2	898077-2481	ECM	1	
3	812146-8300	SENSOR; Inlet air temp.	1	
4	897324-3861	OIL FILTER ASM	1	
5	898013-9863	FUEL FILTER ASM	1	
6	897383-4270	PIPE; JOINT, FUEL	4	
7	109630-0860	PACKING;FUEL PIPE	8	
8	109675-0951	BOLT; EYE, FUEL	4	
9	897217-7780	SENSOR;Barometric press.	1	
10	114145-1920	GASKET;TURBO EXH	1	
11	582550-0290	RELAY;MAIN	1	
12	898075-8551	FUEL FILTER ASM;PRE.	1	
13	898068-2750	FUEL FEED PUMP;Electric	1	
14	897173-9510	RELAY;GLOW	1	
15	582550-0290	RELAY;FUEL FEED PUMP	1	
16	582550-0290	RELAY;STARTER CUT	1	

Specifications sheet No.	IS-08-0148-0	Rev.	0

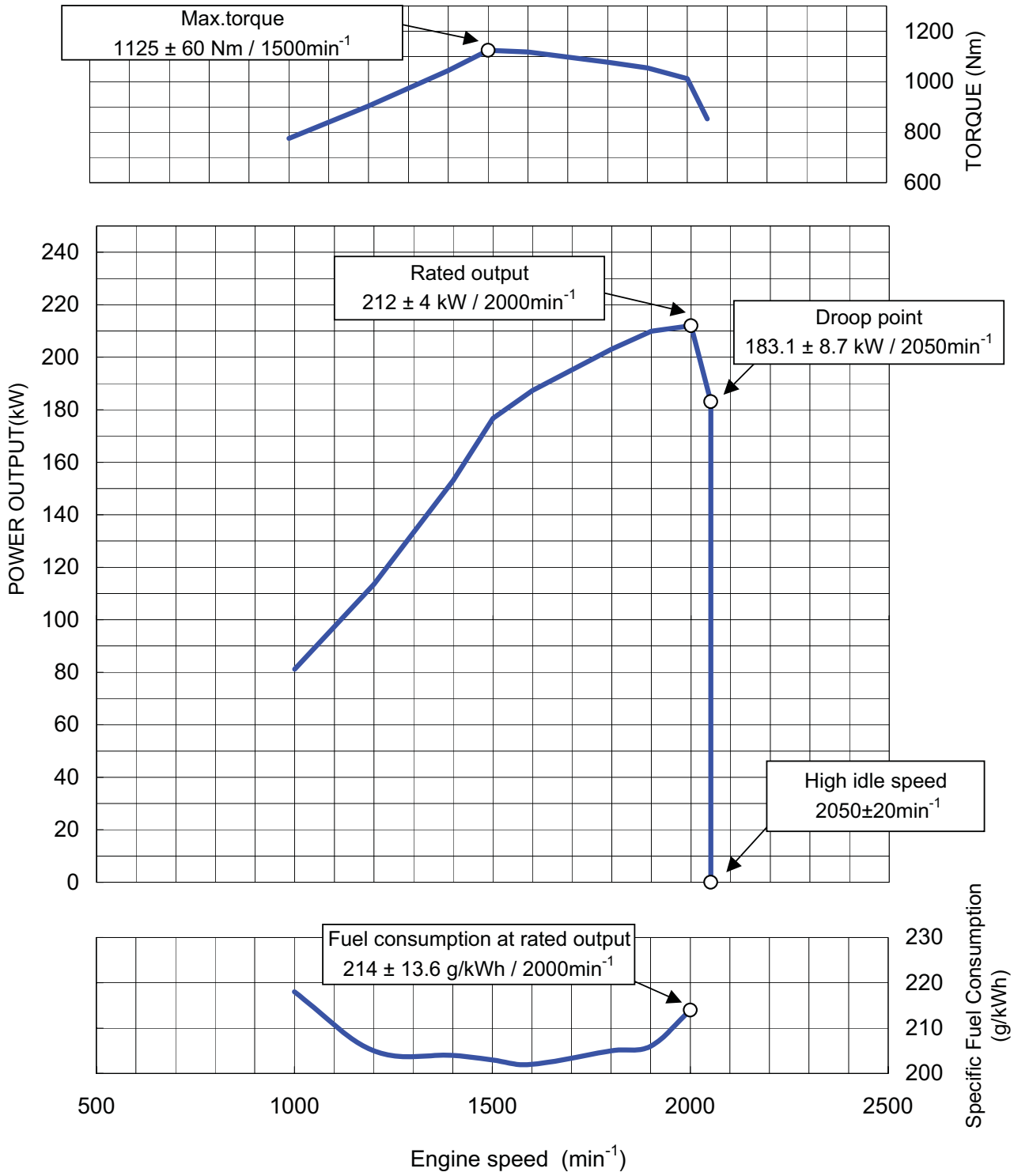
ISUZU

ENGINE PERFORMANCE CURVE

AH-6HK1XYBW-03

For General power

Condition	JIS D0006 / SAE J1349 / ISO15550
Ambient temp.	25 deg.C
Test hour	30Hr
Cooling fan	Without (Fan disengaged)
Air cleaner	With (Intake restriction 3.4kPa)
Exh.silencer	With (Exhust restriction13.3kPa)
Generator	With (No load)



Engine specifications Revision chart

Customer : EXPORT

Engine Model : AH-6HK1XYBW-03 Application : General power

Rev. No.	IS No.	Date	Page	Item	Previous	Current	Description (Reason of change)
0	IS-08-148-0	22.Sep.08	For confirmation of prototype engine specifications				