

Rev.

0

**ENGINE SPECIFICATIONS**

Engine Model	Base Model :	4JJ1 (Turbocharger)
	Model No. :	AJ-4JJ1TYBW-02
Customer		EXPORT
Application		General power
Drawing No. ( 3D Data Code )		E3-1040-022-0

Symbol	Date	Revision Record	Issue No.
0	2008-9-3	For confirmation of prototype engine specifications.	
	:	:	:
	:	:	:
	:	:	:
	:	:	:
	:	:	:

ISUZU MOTORS LIMITED  
Powertrain Business Dept.

Manager : Nobuhiro Shimizu

Prepared : Koji Ogawa




## Engine Specifications

Model No. AJ-4JJ1TYBW-02

Rev. 0

Manufacturer	ISUZU MOTORS LIMITED	
Engine Model	Base Model: 4JJ1 (Turbocharger)	Model No.: AJ-4JJ1TYBW-02
Application	General power	
Emission regulation	EPA Tier-3 / EC Stage-III A	
Engine type	Four cycle, water cooled, overhead valve, vertical in-line, direct injection type	
No. of cylinders-bore x stroke	4 - 95.4 mm x 104.9 mm	
Total piston displacement	2.999 L	
Compression ratio	17.5 to 1	

Engine performance	Rating
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Test conditions	Standard atmospheric condition				
<table border="1"> <tr> <td>Conforming standard</td> </tr> <tr> <td>JPN;JIS D0006-1</td> </tr> <tr> <td>US;SAEJ1349</td> </tr> <tr> <td>EU;ISO15550</td> </tr> </table>	Conforming standard	JPN;JIS D0006-1	US;SAEJ1349	EU;ISO15550	Break-in time 30 hrs
	Conforming standard				
	JPN;JIS D0006-1				
	US;SAEJ1349				
	EU;ISO15550				
With AC generator, without cooling fan					
With air cleaner and exh. silencer					
* Intake restriction -2.45kPa or less					
* Exhaust restriction 13.3kPa or less					
Fuel : JPN: JIS-NO.2					

Rated Output	: 61.0±3% kW / 2500 min-1
Maximum Torque	: 280±5%Nm / approx. 1800 min-1
Fuel consumption at rated.	: 225±5% g/kw.h
No load max. speed	: 2500±10 min-1
Low idle speed	: 800±10 min-1

Type of fuel	Diesel fuel only ( JPN:JIS-NO.2, US:ASTM-2D, EU:EN590 )
Engine dry weight	Approx. 320 kg
Dimensions	L 953 x W 748 x H 846.6 ( With cooling fan )
Firing order	1 - 3 - 4 - 2
Rotating direction	Clockwise viewed from cooling fan
Valve device	Overhead valve

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**Supercharging device**

Supercharging system	With Exhaust turbocharger
Driving system	---
Lubricating system	Full forced pressure feed type (Oil cooled & water-cooled type)
Manufacturer	IHI LTD.
Name of type	RHF5 without waste gate

**Fuel device**

Injection pump	
Manufacturer	Denso corporation
Name of type	Common rail HP3 type
Plunger	2 - 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
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
Filtering system	Paper element type (With priming pump and water separator)
Manufacturer	WAKOU INDUSTRY 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

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**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

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 Dia. 550 mm - Suction type - 8 blades

Driving system Belt driven by crankshaft, speed ratio: 1.03

## 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 (water temp. sensor)  
#REF!

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**Air cleaner**

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 Cleaning system ---  
 Manufacturer ---

**Starting device**

Starting motor  
 Manufacturer Denso corporation  
 Name of type Reduction type  
 Voltage 12V  
 Output 2.5kW

**Engine stop device**

Fuel cut (Electronic controlled)

**Preheating device**

With Glow plug (QOS- II )

**Alternator**

Generating system A/C type  
 Manufacturer HITACHI Ltd.  
 Voltage 12V  
 Output 110A  
 Driving system Belt driven by crankshaft pulley

**Regulator**

Regulating system Built-in IC regulator  
 Manufacturer HITACHI Ltd.  
 Charging discharging indicating system: ---

**Hour meter**

Without  
 System ---  
 Manufacturer ---  
 Fitting position ---  
 Driving system ---  
 Speed ratio ---  
 Rated speed indicator ---

**Power Take Off**

With  
 Maximum torque 130Nm  
 Speed ratio 1 : 1  
 Rotation Counterclockwise(Viewed from Engine front)  
 Flange type SAE B type  
 Spline number of teeth 13  
 Diametric pitch 16/32  
 Pressure angle 30 degrees

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**Allowable inclination angle** 0.61 rad.(35deg) for all directions viewed from flywheel

**Capacity**

Lubrication oil MAX : approx. 15.0 L MIN : approx. 11.0 L (Oil pan only)  
 Air cleaner ---  
 Injection pump ---  
 Governor ---  
 Cooling water Approx 6.0 L (Engine only)  
 Others ---

**Maintenance data**

Valve clearance and adjustment	Valve	Valve clearance	Valve timing: open	Valve timing: close
Inlet	0.15 mm at cold	0.23 rad(13deg) BTDC	0.72 rad(41deg) ABDC	
Exhaust	0.15 mm at cold	0.91 rad(52deg) BBDC	0.10 rad(5.7deg) ATDC	

Injection timing Electrical control  
 Initial injection pressure ---  
 Compressive pressure 3.0 MPa (At engine speed 200 min<sup>-1</sup>)

**Reference data**

Thermostat Initial opening temperature at atmospheric pressure: 85.0 degrees C  
 Temperature at valve lift of 10.0 mm and over: 92.0 °C

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**

API Grade CD, CE, CF, CF-4 or ACEA Grade B2/B3, E2/E3  
 \* Please refer to "Engine Instruction Manual" for details.

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## Dress Level

No.	Item	Description
1	HOUSING ; FLYWHEEL	SAE#3
2	FLYWHEEL	SAE 11.5 & 10 Combined type
3	OIL LEVEL GAUGE	Engine RH attached
4	AC GENERATOR	HITACHI A/C 12V-110A
5	STARTER	Denso corporation 12V-2.5kW
6	FUEL FILTER	With (remote type)
7	OIL FILTER	With (Engine RH attached)
8	WATER INLET PIPE	Right hand (Viewed from Flywheel)
9	WATER OUTLET PIPE	Left hand (Viewed from Flywheel)
10	COOLING FAN	dia.550-8 blades-Suction
11	POWER TAKE OFF	With

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## Loose parts

No.	Parts No.	Item	Qty	Remarks
1	582550-0290	RELAY	1	
2	894248-1610	RELAY;STARTER	1	
3	582550-0290	RELAY;STARTER CUT	1	
4	897011-9490	RELAY;GLOW PLUG	1	
5	812146-8300	SENSOR;TEMP, INLET PIPE	1	
6	898103-3420	CONTROL UNIT;ENGINE	1	
7	897383-4270	PIPE ASM;FUEL	4	
8	109675-0951	BOLT;EYE,FUEL PIPE	4	
9	109630-0860	PACKING;FUEL PIPE	8	
10	898074-2911	FILTER ASM;FUEL	1	
11	898075-8551	FILTER;PRE,FUEL	1	
12	898068-2750	FEED PUMP ASM;ELECTRIC	1	
13	582550-0290	RELAY;FUEL PUMP	1	
14	897217-7780	SENSOR;MAP	1	
15	894402-5000	SWITCH ASM;STARTER	1	
16	894369-0210	Gasket;Exhaust	1	



Specifications sheet No.

IS-08-137-0

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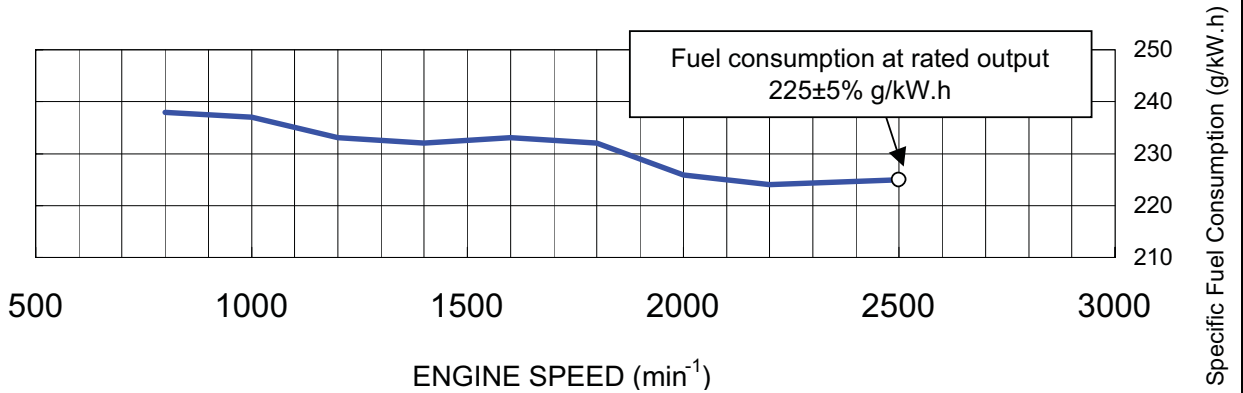
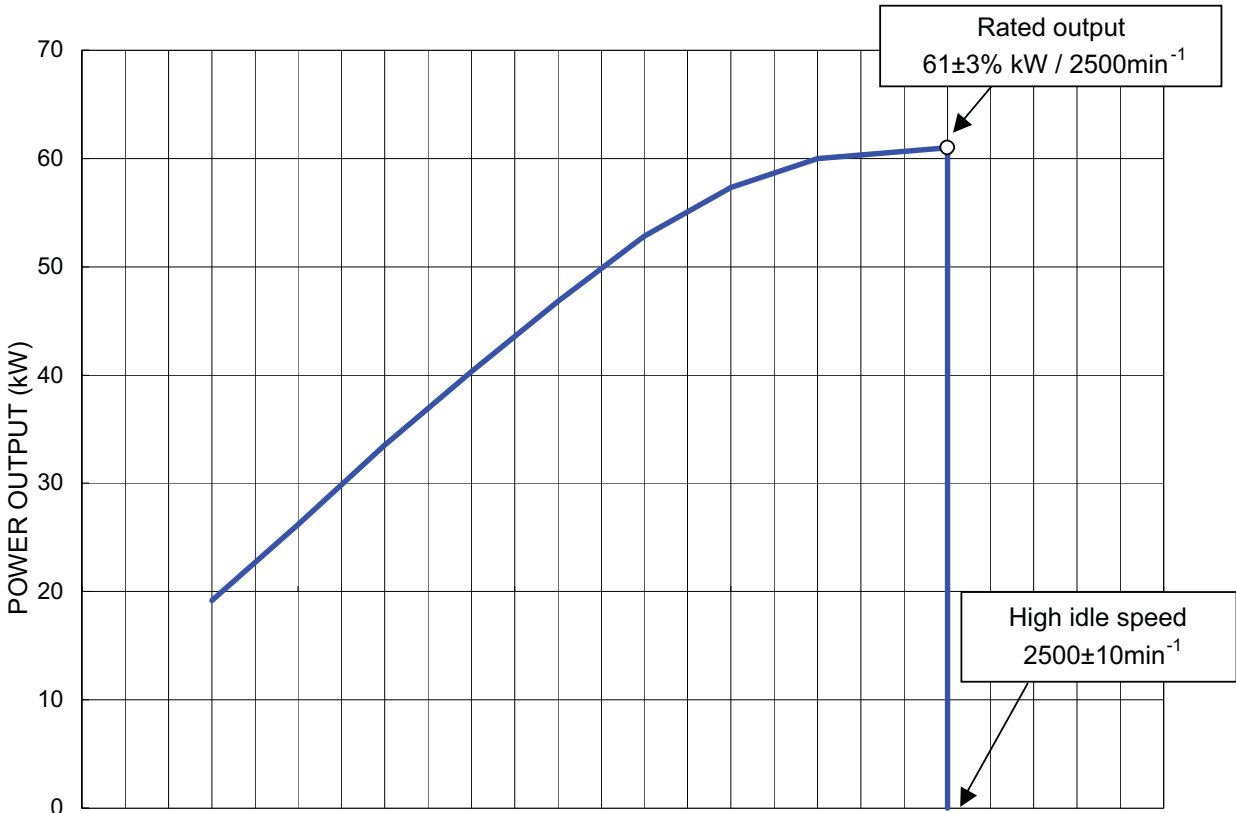
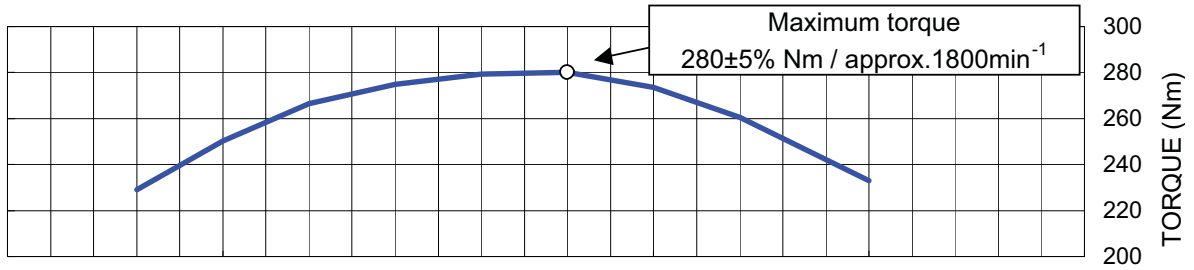
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**ISUZU**

Preliminary

**AJ-4JJ1TYBW-01 & 02 Target performance curve  
FOR GENERAL POWER**

conditions	JIS D0006 / SAE J1349 / ISO15550
atmospheric condition	standard
braking time	30Hr
Pulley Ratio	-
Cooling Fan	without
Air Cleaner	with (2.45kPa)
Alternator	with (Noload)
EXH. Silencer	with (13.3kPa)



### Engine specifications Revision chart

Customer : EXPORT

Engine Model : AJ-4JJ1TYBW-02      Application : General power

Rev. No.	IS No.	Date	Page	Item	Previous	Current	Description (Reason of change)
0	IS-08-137-0	3.Sep.08		For confirmation of prototype engine specifications			