

MITSUBISHI DIESEL ENGINE TECHNICAL INFORMATION	ITEM No.	T0221-0008C (1/5)
	DATE	May, 2020

Specification Sheets of S16R2-A2PTAW-C Engine

Specification Sheets of S16R2-A2PTAW-C Engine are enclosed herein.

The specifications are subject to change without notice.

Revision	First Edition : May, 2020	Engine Engineering Department High Speed Engine Designing Section		
		Approved by	Checked by	Drawn by
		M.NAKAMURA	T.NISHIOKA	T.N

GENERAL ENGINE DATA

Type	4-Cycle, Water Cooled	
Aspiration	Turbo-Charged, Aircooler (Fresh Water)	
Cylinder Arrangement	60°V	
No. of Cylinders	16	
Bore mm(in.)	170	(6.69)
Stroke mm(in.)	220	(8.66)
Displacement liter(in ³)	79.90	(4876)
Compression Ratio	14.0:1	
Dry Weight - Engine only - kg(lb)	7750	(17089)
Wet Weight - Engine only - kg(lb)	8200	(18081)

PERFORMANCE DATA

Steady State Speed Stability Band at any Constant Load		
Electric Governor - %	±0.25 or better	
Maximum Overspeed Capacity - rpm	1750	
Moment of inertia of Rotating Components (S.I.) kg•m ² (lb•ft ²)	33.22	(788)
(Includes Std. Flywheel) (GD ²) kgf•m ² (lbf•ft ²)	132.88	(3154)
Cyclic Speed Variation with Flywheel at 1500rpm	1/205	

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Flywheel Housing - kgf•m(lbf•ft)	450	(3256)
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AIR INLET SYSTEM

Maximum Intake Air Restriction (Includes piping)		
With Clean Filter Element - mm H ₂ O (in. H ₂ O)	400	(15.7)
With Dirty Filter Element - mm H ₂ O (in. H ₂ O)	635	(25.0)

EXHAUST SYSTEM

Maximum Allowable Back Pressure - mm H ₂ O (in. H ₂ O)	600	(23.6)
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LUBRICATION SYSTEM

Oil Pressure at Idle - kgf/cm ² (psi)	2~3	(29~43)
at Rate Speed - kgf/cm ² (psi)	4.5~6	(64~86)
Maximum Oil Temperature of Oil pan - °C(°F)	105	(221)
Oil Capacity of Standard Oil Pan		
High - liter (U.S.gal)	260	(68.7)
Low - liter (U.S.gal)	200	(52.8)
Total System Capacity (Includes Oil Filter) - liter (U.S.gal)	290	(76.6)
Maximum Angle of Installation (Std. Pan)	Front Down	6°
(Engine Only)	Front Up	6°
	Side to Side	25°

COOLING SYSTEM

Coolant Capacity of Jacket (Engine Only) - liter (U.S.gal)	157	(41.5)
Coolant Capacity of Air Cooler (Engine Only) - liter (U.S.gal)	33	(8.7)
Maximum External Friction Head at Engine Outlet - kgf/cm ² (psi)	0.35	(5.0)
Maximum Static Head of Coolant above Crankshaft Center - m(ft)	10	(32.8)
Standard Thermostat (modulating) Range of Jacket- °C(°F)	71~85	(160~185)
Standard Thermostat (modulating) Range of Air cooler- °C(°F)	42~55	(108~131)
Maximum Coolant Temperature at Engine Inlet- °C(°F)	External oil cooler not used	75 (167)
Maximum Coolant Temperature at Engine Outlet- °C(°F)	External oil cooler not used	83 (181)
	External oil cooler used	98 (208)
Minimum Coolant Expansion Space - % of System Capacity	10	
Max. Coolant Temp. at Air cooler Inlet, PTAW type- °C(°F) (at ambient 25°C)	50	(122)

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FUEL SYSTEM

Fuel Injector	-----	Mitsubishi PS8 Type × 2
Maximum Suction Head of Feed Pump - mm Hg (in. Hg)	-----	75 (3.0)
Maximum Static Head of Return & Leak Pipe - mm Hg (in.Hg)	-----	150 (5.9)

STARTING SYSTEM

Battery Charging Alternator - V-Ah	-----	24-35
Starting Motor Capacity - V -kW	-----	24-7.5×2
Maximum Allowable Resistance of Cranking Circuit - m Ω	-----	1.5
Recommended Minimum Battery Capacity		
At 5°C(41°F) and above - Ah	-----	400
Below 5°C(41°F) through - 5°C(23°F)	-----	600

Emission Statement for MITSUBISHI EXHAUST EMISSION CONTROLLED ENGINE <EPA-Tier2 Comparable>
[Green-Oriented Engine Series]

1. We hereby declare that diesel engine for generator application made by MITSUBISHI HEAVY INDUSTRIES, LTD
【Green-Oriented Engine Series (G.O.E.S.)】 satisfy the internal Tier 2 standard (EPA-Tier2 comparable level)
in the prescribed test conditions.

This engine is permitted to be imported to Singapore based on Environmental Protection and Management
(Off-Road Diesel Engine Emissions) Regulations 2012, issued by National Environment Agency of Singapore.

Test mode: D2		
	Emission controlled <MHI Tier 2>	<Reference> EPA-Tier2 standard
NOx+HC	6.4g/kWh	6.4g/kWh
CO	3.5g/kWh	3.5g/kWh
PM	0.2g/kWh	0.2g/kWh

- (1) Test procedure: Pursuant to EPA CFR 40 Part 89 and ISO8178-1
! CAUTION (2) Emission test condition: Pursuant to EPA CFR 40 Part 89 except that JIS No.2 diesel fuel is used.
! CAUTION (3) Above emission results do not include Deterioration Factor (DF).
! CAUTION (4) These engines are not EPA Tier2 certified.
(5) Test report is issued by Vehicle Certification Agency (VCA) (Report/Job Number: JSP272698)
(6) This document proves that the following four engine models are manufactured and supplied under the supervision
of MHI quality assurance system and satisfy MHI internal Tier 2 emission standard.
! CAUTION (7) This document does not guarantee the same emissions performance when fuel or operating environment is different.

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[External Oil Cooler Not Used]

MITSUBISHI

S16R2-A2PTAW-C**SPECIFICATION SHEET****DIESEL ENGINES****ENGINE RATING**

All data represent net performance with standard accessories such as air cleaner, inlet /exhaust manifolds, fuel oil system, L.O. pump, etc. under the condition of 100kPa(29.6inHg) barometric pressure, 77°F(25°C) ambient temperature and 30% relative humidity.

ITEM	UNIT	STAND-BY POWER ※	PRIME POWER		
		50Hz	50Hz		
Engine Speed	rpm	1500	1500		
No. of Cylinders		16			
Bore	mm (in.)	170 (6.69)			
Stroke	mm (in.)	220 (8.66)			
Displacement	liter (in. ³)	79.9 (4876)			
Brake Horse power without Fan	HP (kW)	2905 (2167)	2627 (1960)		
Brake Mean Effective Pressure without Fan	kgf/cm ² (MPa) (psi)	22.1 (2.17) (314)	20.0 (1.96) (284)		
Mean Piston Speed	m/s (ft/min)	11.0 (2165)	11.0 (2165)		
Maximum Regenerative Power Absorption Capacity without Fan	HP (kW)	204 (152)	204 (152)		
Intake Air flow	m ³ /min (CFM)	208 (7344)	188 (6638)		
Exhaust Gas Flow	m ³ /min (CFM)	550 (19421)	498 (17584)		
Coolant Flow	liter/min (U.S. GPM)	1650 (436)	1650 (436)		
Coolant Flow to Aircooler (PTAW only)	liter/min (U.S. GPM)	920 (243)	920 (243)		
Allowable Fan Loss Horse Power	HP (kW)	82 (61)	82 (61)		
Radiated Heat to Ambient	kcal/hr (kJ/hr) (BTU/min)	157579 (659633) (10422)	142527 (596624) (9427)		
Heat Rejection to Coolant	kcal/hr (kJ/hr) (BTU/min)	735370 (3078292) (48636)	665125 (2784243) (43990)		
Heat Rejection to Air Cooler	kcal/hr (kJ/hr) (BTU/min)	604054 (2528597) (39951)	546353 (2287058) (36135)		
Heat Rejection to Exhaust	kcal/hr (kJ/hr) (BTU/min)	1892388 (7921621) (125160)	1711620 (7164918) (113204)		
Noise Level	dB(A)	TBD	TBD		

※ 2905HP of this engine is satisfied for Tier2 regulation (EPA-Tier2 comparable level) in Singapore.

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ENGINE RATING

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Brake Horse power without Fan	HP (kW)	2905 (2167)	2627 (1960)		
Brake Mean Effective Pressure without Fan	kgf/cm ² (MPa) (psi)	22.1 (2.17) (314)	20.0 (1.96) (284)		
Mean Piston Speed	m/s (ft/min)	11.0 (2165)	11.0 (2165)		
Maximum Regenerative Power Absorption Capacity without Fan	HP (kW)	204 (152)	204 (152)		
Intake Air flow	m ³ /min (CFM)	208 (7344)	188 (6638)		
Exhaust Gas Flow	m ³ /min (CFM)	550 (19421)	498 (17584)		
Coolant Flow	liter/min (U.S. GPM)	1650 (436)	1650 (436)		
Coolant Flow to Aircooler (PTAW only)	liter/min (U.S. GPM)	920 (243)	920 (243)		
Oil Flow to External Oil Cooler	liter/min (U.S. GPM)	70 (18)	70 (18)		
Allowable Fan Loss Horse Power	HP (kW)	82 (61)	82 (61)		
Radiated Heat to Ambient	kcal/hr (kJ/hr) (BTU/min)	157579 (659633) (10422)	142527 (596624) (9427)		
Heat Rejection to Coolant	kcal/hr (kJ/hr) (BTU/min)	682844 (2858415) (45162)	617616 (2585368) (40848)		
Heat Rejection to Air Cooler	kcal/hr (kJ/hr) (BTU/min)	604054 (2528597) (39951)	546353 (2287058) (36135)		
Heat Rejection to External Oil Cooler	kcal/hr (kJ/hr) (BTU/min)	78790 (329818) (5211)	71263 (298310) (4713)		
Heat Rejection to Exhaust	kcal/hr (kJ/hr) (BTU/min)	1866125 (7811682) (123423)	1687865 (7065478) (111633)		
Noise Level	dB(A)	TBD	TBD		

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