

## 2-5. 3JH2-series

### Engine Specifications

Model		3JH2E		3JH2-TE	
Class		3JH2E	3JH2BE	3JH2-TE	3JH2-TBE
Configuration		Vertical 4-cycle water cooled diesel engine			
Combustion system		Direct injection			
Aspiration		Natural Aspiration		Turbocharger	
Number of cylinders		3			
Bore X stroke		mm 82 X 86			
Displacement		ℓ 1.363			
Continuous rating output	at crankshaft	kW(hp)/rpm	25.7 (34.9) / 3400		31.6 (43.0) / 3400
	Brake mean effective pressure	kgf/cm <sup>2</sup>	6.80		8.35
	Piston speed	m/sec.	9.75		9.75
Maximum output	at crankshaft	kW(hp)/rpm	28.5 (38.7) / 3600		35.0 (47.6) / 3600
	Brake mean effective pressure	kgf/cm <sup>2</sup>	6.97		8.62
	Piston speed	m/sec.	10.3		10.3
High idling speed		rpm	3900-3950	←	3975-4025 ←
Idling speed		rpm	775-825	←	775-825 ←
Firing order		240° 240° 240° 1 - 3 - 2 - 1			
Starting system	Starter motor	V-kW	DC 12V, 1.4 kW (Model: S114-257G)		
	Alternator	V-A	12V, 55A (LR155-20)		
Cooling system		Fresh water cooling by centrifugal pump and rubber impeller sea-water pump			
Cooling water capacity	Engine tank	ℓ	4.7		
	Sub tank	ℓ	0.8		
Lubrication system		Forced lubrication with trochoid pump			
Lube oil capacity		ℓ	4.4		
<b>Reduction and reversing gear (Marine gear)</b>					
Model		KBW10E	KM3A	KBW10E	KM3A
Type		Constant mesh gear with multiple friction disc clutch	Constant mesh gear with servo-cone clutch, 7° angle	Constant mesh gear with multiple friction disc clutch	Constant mesh gear with servo-cone clutch, 7° angle
Reduction ratio	Ahead	2.14/2.45/2.83	2.33/2.64/3.21	2.14/2.45	2.33/2.64
	Astern	2.50/2.50/2.50	3.04/3.04/3.04	2.50/2.50	3.04/3.04
Propeller speed (Ahead) at cont. rating		rpm 1589/1388/1200	1459/1288/1059	1589/1388	1459/1288
Lube oil capacity		ℓ 0.7	0.45	0.7	0.45
Direction of rotation	Crankshaft	Counter-clockwise viewed from stern			
	Propeller shaft	Clockwise viewed from stern			
Dry weight, included marine gear		kg 183	178	192	187

[Note]1: Rating Condition, ISO 3046-1

[Note]2: hp=0.7355 kW

## Considerations for Engine Installation

Model			3JH2E		3JH2-TE	
Class			3JH2E	3JH2BE	3JH2-TE	3JH2-TBE
Maximum output		kW(hp)/rpm	28.5(38.7)/3600	28.5(38.7)/3600	35.0(47.6)/3600	35.0(47.6)/3600
<b>Marine gear Model</b>			KBW10E	KM3A	KBW10E	KM3A
Shift lever force at engine 1000rpm., lever length 170 mm	Engaging	kg	8~9	4~5	8~9	4~5
	Disengaging	kg	10~11	5~6	10~11	5~6
Reduction ratio			2.14/2.45/2.83	2.33/2.64/3.21	2.14/2.45	2.33/2.64
Recommended propeller shaft dia. (SUS304)		φ mm	28/30/32	28/30/32	30/32	30/32
<b>Installation</b>						
Engine installation angle of crankshaft center to waterline	Recommended	Degree	8			
	Max.	Degree	15			
Applicable flexible engine mount		I.D.# X Qty	100 X 2, 150 X 2			
Type of flexible engine mount			Fixed-1			
Installed position of Flexible engine mount		Position I.D. No.	(A), (B), (C), (D) 100, 150, 100, 150			
Value of static distortion for flexible engine mount		Approx. mm	4			
Recommended battery capacity, Min.		V-AH	12-100			
<b>Fuel System</b>			Injection pump type: YPES-CL			
Max. suction head of fuel feed pump		m	1.0			
Max. discharge volume of fuel feed pump		ℓ/min.	9.2 at camshaft speed 1500 rpm., engine speed 3000 rpm.			
Max. discharge pressure of fuel feed pump		kg/cm <sup>2</sup>	0.13 at camshaft speed 1500 rpm., engine speed 3000 rpm.			
Fuel inlet pipe connector outer dia.		φ mm	8			
Fuel return pipe connector outer dia.		φ mm	8			
Fuel consumption at cont. rating output		ℓ/hp-hr.	5.5		6.9	
<b>Cooling System</b>						
Max. suction head of sea-water pump		m	0.5			
Inlet outer dia. of sea-water pump		φ mm	26			
Operating temp. for thermostat		°C	Opening: 76.5, Full open: 90			
Installed position of sub-tank			Same height as the filler cap			
Max. overflow pipe length of sub-tank to filler cap and connector outer dia.	Length, m		1.0			
	Dia., mm		9			
Thread size of water heater tank connecto	Size		PT3/8			
	Position		Outlet: Inlet of fresh water pump Return: Outlet of fresh water pump			
<b>Intake and Exhaust System</b>						
Connection outer dia. of exhaust pipe		φ mm	64			
Min. ventilator capacity of engine room		m <sup>3</sup> /min.	4.5		7.0	
Max. back pressure, measured within 250mm of exhaust manifold		mm/Aq.	1200		1000	
Max. exhaust temperature at max. output		°C	580		600	
Max. boost pressure of turbocharger		kg/cm <sup>2</sup>	—		0.86 0.86	
Max. engine room temperature		°C	60			
<b>Alarm System</b>						
Operating temp. of alarm switch for coolant water		°C	ON: 97~103 OFF: 90~97			
Operating pressure of alarm switch for engine lubrication		kg/cm <sup>2</sup>	0.1~0.3			