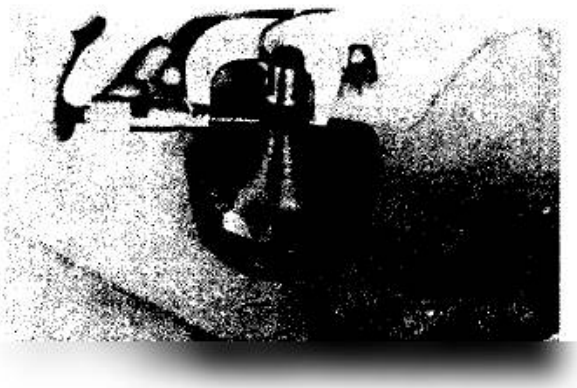
(4) Inspection



①Rotor

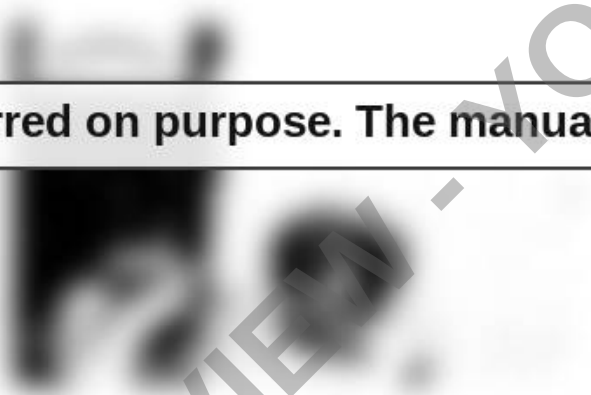
1. Measuring Outside Diameter

Gauge	Micrometer

- Measure the outside dia. of the rotor shaft at the area contacting the bearing.

Replace when the outside dia. is below 24.95



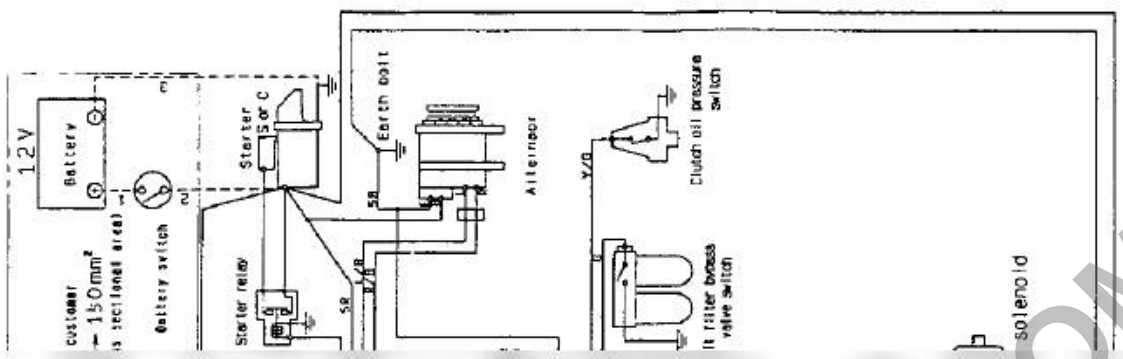




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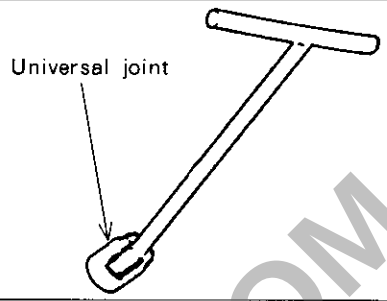
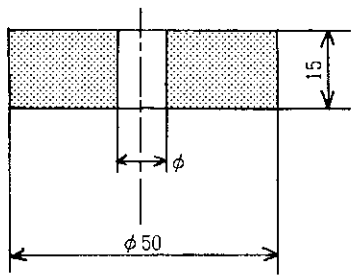
5. Service Standard

(mm)

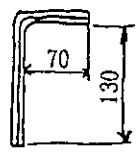
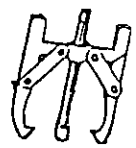
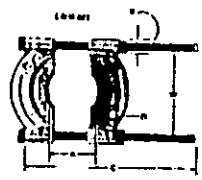
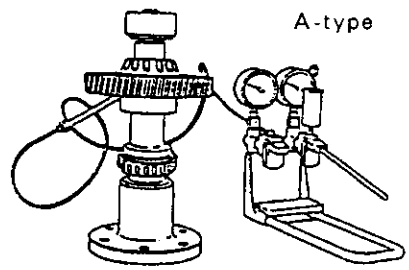
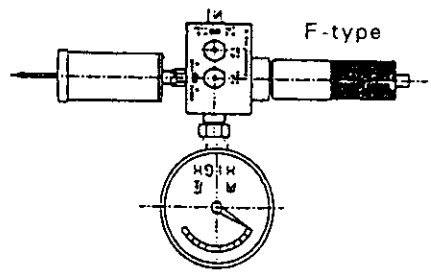
Names of Parts	Item			Nominal(standard) size / Tolerance		Standard clearance when assembled	Allowable max. clearance (repair limit)	Part service limit (to the standard size)
Cylinder Liner	Cyl. sleeve inside dia.		L	φ110	+0.030 +0.020	—	—	+0.15
			M		+0.020 +0.010			
			S		+0.010 0			
	Cyl. sleeve projection			—		0.03~0.09	—	—
	Sink of sleeve			—		—	—	—
	Roundness of sleeve			—		0~0.015	—	0.08
	Cylindricality of sleeve			—		0~0.020	—	0.08
Piston Pin	Piston Outside Dia.		L	φ110	−0.060 −0.070	—	—	109.75
			ML		−0.070 −0.075			
			MS		−0.075 −0.080			
			S		−0.080 −0.090			
	Clearance between piston and cyl. liner	(Matching I.D. marks)		—		0.080~0.100		—
				—				—
	Piston pin boss hole dia.			φ46		0~0.022	—	—
	Dia. of piston pin							45.95
Piston Rings	Clearance between piston ring and ring groove	No.1	Ring width	3	−0.01 −0.025	0.105~0.130	0.20	−0.1
			Groove width		+0.105 +0.95			+0.15
		No.2	Ring width	2.5	−0.01 −0.025	0.075~0.105	0.15	−0.1
			Groove width		+0.080 +0.065			+0.15
		No.3	Ring width	2.5	−0.01 −0.025	0.050~0.080	0.15	−0.1
			Groove width		+0.055 +0.040			+0.15
		Oil ring	Ring width	5	−0.01 −0.025	0.030~0.060	0.15	−0.1
			Groove width		+0.035 +0.020			+0.15
	Ring thickness	No.1 Piston ring		3.95		—	—	—
		No.2・3 Piston ring		4.6				—
		Oil ring		2.7 (Ring body) 3.8(Coil expander)				—
	End gaps	Piston ring		—		0.250~0.450	1.5	—
		Oil ring		—		0.250~0.450	1.5	—
Cylinder Head	Distortion of cyl. head installation face			0~0.05		—	—	0.15
	Sink of intake/exhaust valve		intake	—		$0.2^{\pm 0.1}$	—	0.9
			exhaust	—		$0.2^{\pm 0.1}$	—	0.9
	Seat width of intake/exhaust valve		intake	1.73		—	—	—
			exhaust	2.12		—	—	—
	Valve guide and cyl. head tightening margin			—		0.001~0.047	—	—

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Name of tool	Code No.	shape
Exhaust manifold puller		
Fuel valve puller tool 127616--92500		

Special tools for clutch

No.	Name of tool	Note	shape
1	Emergency bolt span	For tightening the emergency bolt on clutch failure	
2	Gear puller		
3	Bearing separator	For removing bearing; used together with the gear puller	
4	Hydraulic fitting tool	For disassembly of output shaft joint Output shaft joint and large gear	A-type  F-type 

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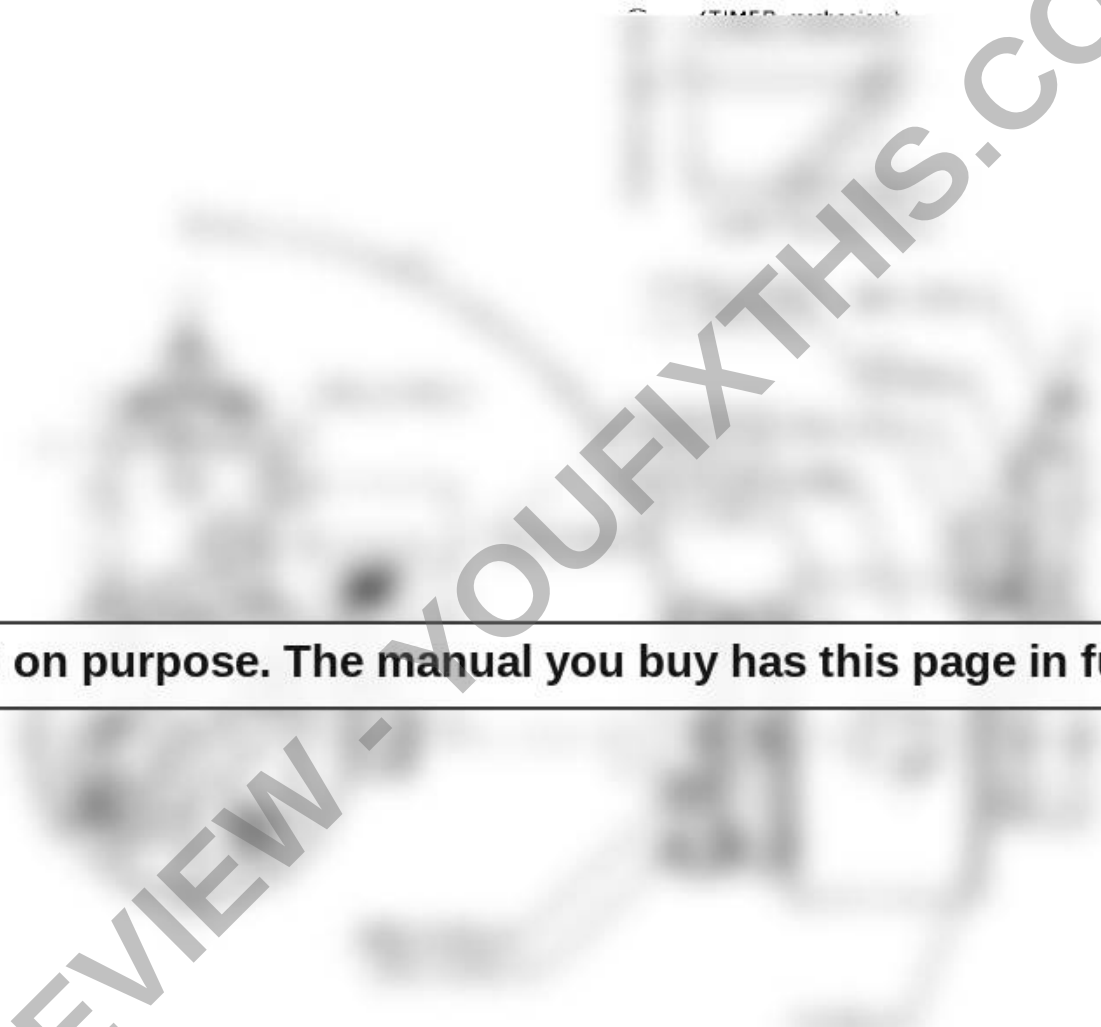
3-11-7 Timer and Drive Shaft Joint

(1)Timer

①Cautions for Reassembly

1. Use new oil seals and O−rings.
2. Check the spring for rust, flaws and degeneration.
3. Check the roller and bush for wear and cracks.
4. Tighten the bolts according to the following diagram.

Time type	SE (CX-3EA)
Max. advance angle	3 degrees
	500～1000
Oil supply to timer	450cc



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1. Specifications

1-1. Major Specification

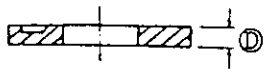
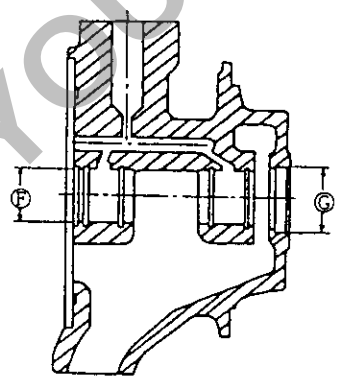
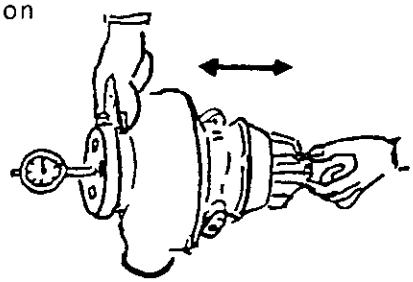
(Without marine gear)

ENGINE MODEL		UNIT	6CX-ETE
Type			Vertical, water-cooling, 4-cycle diesel engine
Combustion system			Direct injection
Aspiration			Turbocharger with air cooler
No. of cyl. - bore × Stroke		mm	6 – 110 × 125
Displacement		ℓ	7.127
Continuous	Output/Crankshaft speed	HP/rpm	375/2600

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Part	Procedure	Limit of use
⑥Thrust collar	1. No wear or flaws on the contact surface with the thrust bearing. 2. No wear or flaws on the contact surface with the back plate 3. No wear or flaws in the piston ring grooves	
⑦Thrust bearing	1. No wear or flaws on the contact surface with the thrust collar 2. No thermal discolortation 	• Thickness of the contact surface with the thrust collar (Standard value) Ⓓ = 4. 36mm
⑧Center housing (assembly)	1. No wear or flaws in the hole for fitting the bearing 2. No cracks or breakage 3. No foreign matters in the oil gallery 	• Inside diameter of center housing (Standard value) Ⓔ = 20. 18mm • Piston ring inside diameter of center housing (Standard value) Ⓕ = 20. 90mm
⑨Measurement of the play to the axial direction of the shaft wheel assembly	1. Move the shaft end of the shaft wheel assembly left and right and measure the play to the axial direction 	• Play to the axial direction (Standard value) 0. 025~0. 076mm • If the value deviates from the standard value, reassemble. • Turn the shaft end lightly and check for the abnormal sounds.

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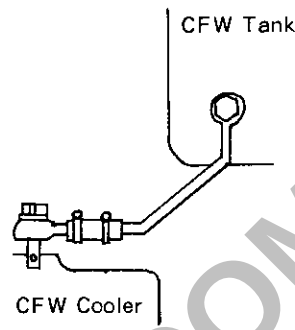
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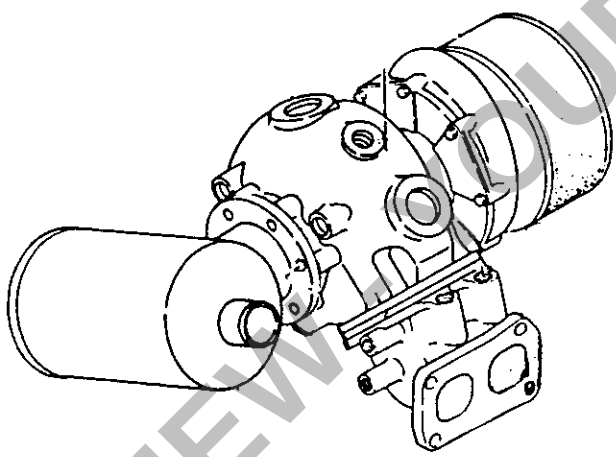
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No.	Item	Procedure	Tool& Caution	Illustration
44	Fresh water air venting pipe	Install the fresh water air venting pipe.		
45	Exhaust manifold, Exhaust bend and Turbocharger	Install the turbocharger mount to the exhaust manifold. Install the turbocharger. (Installing the turbochager body) Install the turbocharger cover. (Installing the insulator) Install the lube oil pipe to the turbocharger. (Inlet pipe, Outlet pipe) Install the cooling water pipe. Install the exhaust bend.		 Install the turbocharger  Install the turbocharger cover  Install the lube oil pipe



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②Wear Plate

- Remove the wear plate to check. If step-wear is noted on the side face, reverse the wear plate to re-use it.

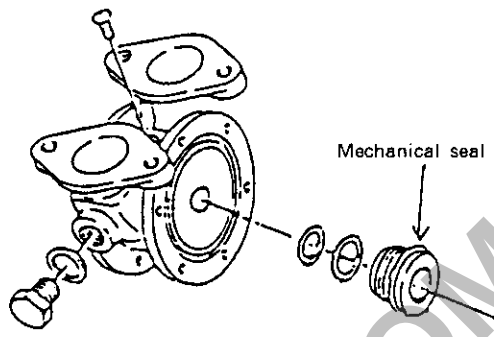
③Pump Housing

- If the wear or damage of the housing interior or impeller's moving face is excessive, replace.

④Mechanical Seal

- If water leakage from the drain pipe increases, replace the mechanical seal.

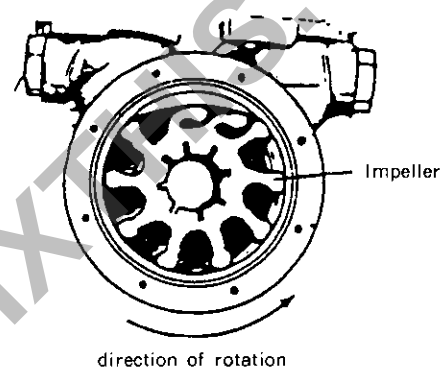
Part code No.	128620-42060



(Mechanical seal)

⑤Reassembly of Sea water Pump

- Before assembly, apply oil to the shaft spline, both ends of impeller and impeller exterior surface and grease to the seal lip and bearing.
- Ensure the correct impeller blade direction when assembling the impeller to the body. (Impeller installation direction)
- Replace the O-ring on the joint surface.
- Apply seal agent (equivalent to THREEBOND No.4) to the whole area of the packing surface.



(Ensure the correct impeller blade direction)

(2)Anti-Corrosion Zinc

The anti-corrosion zinc is installed to the seawater cooling system to prevent corrosion. Check the zinc on a periodic basis. Replace every 500 hrs. or when more than half is corroded.

(Caution):
To check the zinc, remove corrosion with a wire brush.

Anti-corrosion zinc fitting positions	
Lube oil cooler	1 each for inlet and outlet
Fresh water cooler	2 each for inlet and outlet
Air cooler	6 pcs

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