



SERVICE NOTE

MITSUI ENGINEERING & SHIPBUILDING CO., LTD.
DIESEL TECHNICAL INVESTIGATION GROUP.

for MITSUI—MAN B&W engines, TCA Turbocharger Radial Gap Turbine blade/Shroud ring		No.195	
		APPROVED	Osako
		CHECKED	Harada
		PREPARED	Matsubara
ENGINE TYPE	MITSUI-MAN TCA Turbocharger	DATE	2016.6.10

Revised 1 : Adding of Radial gap with turbine blade addition. (2016-6-15)

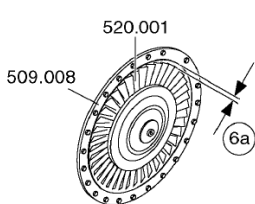
With regard to the maintenance for TCA turbocharger, Gaps and Clearances of each part are written on chapter C2 2 "Setting Data" of the Instruction Manual for Turbocharger which is included in the Instruction Manual "Volume 4 COMPORNT No.2"

Even though four kinds of radial gap are given on each turbocharger type according to the specification of turbocharger, only one specified radial gap between turbine blade and shroud ring has been written on the Instruction Manual.

In this connection, since four specified radial gaps for each turbocharger type are written in this Service Note, please check the radial gap, which corresponds to your engine, after confirming the specification of shroud ring on your turbocharger when turbocharger maintenance is carried out.

Since the specification of shroud ring is indistinguishable, please direct to the following address in order to confirm the specification of shroud ring and correct radial gap when turbocharger maintenance is carried out on engines manufactured before April 2016.

Present Instruction Manual (April 2016)
Radial Gap Turbine Blade / Shroud Ring

	Measuring Point	Type	Condition as Manufactured		Replace Parts	
			Min [mm]	Max [mm]	Min [mm]	Max [mm]
6a ¹⁾		TCA55	0.80	1.00	(0.70) ²⁾	1.20
		TCA66	0.95	1.15	(0.80) ²⁾	1.40
		TCA77	1.10	1.31	(0.90) ²⁾	1.50
		TCA88	1.30	1.52	(1.10) ²⁾	1.80

1) Setting specification for Shroud ring. See Work card [500.54]

2) The minimum value may not be fallen short of at any location on the circumference.

PRIORITY

IMMEDIATELY <input type="checkbox"/>	AT FIRST OPPORTUNITY <input type="checkbox"/>	WHEN CONVENIENT <input type="checkbox"/>	OTHERS <input checked="" type="checkbox"/>
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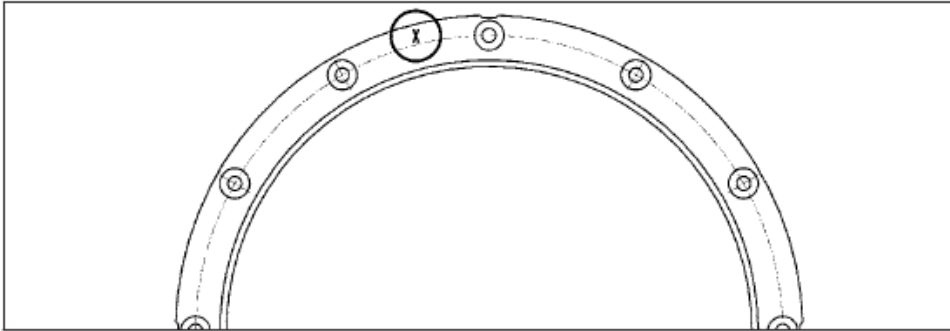
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TCA55 Radial Gap Turbine Blade/Shroud Ring

The valid gaps and clearance depend on combination of turbine blade type and shroud ring type.

1. Check whether the shroud ring is marked with an identification "X" or not



2. Measure rotor diameter to check either long turbine blades or short turbine blades are installed.

	Long turbine blades:	Rotor diameter Φ511.4mm
	Short turbine blades:	Rotor diameter Φ485.9mm

3. Refer to the table below for combination (A to D)

	Shroud ring	Without identification	with identification "X"
Turbine blade			
Long turbine blades		A	B
Short turbine blades		C	D

4. Take measurement of gap at 4 locations of the circumference with a feeler gauge (*and compare the measured values with the gaps stated in the table below*)

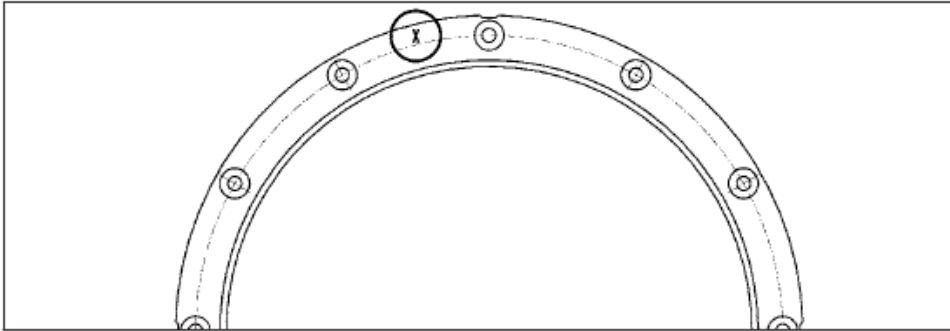
※The minimum value may not be fallen short of at any location on circumference.

Gaps and Clearance	Combination	Measuring Point	Condition as Manufactured		Replace Parts		Work Card
			Min. [mm]	Max. [mm]	Min. [mm]	Max. [mm]	
	A	6a ¹⁾ *	0.80	1.00	(0.70) ²⁾	1.15	500.54
	B		1.20	1.40	(1.10) ²⁾	1.55	
	C		0.70	0.90	(0.60) ²⁾	1.05	
	D		1.20	1.40	(1.10) ²⁾	1.55	

TCA66 Radial Gap Turbine Blade/Shroud Ring

The valid gaps and clearance depend on combination of turbine blade type and shroud ring type.

1. Check whether the shroud ring is marked with an identification "X" or not



2. Measure rotor diameter to check either long turbine blades or short turbine blades are installed.

	Long turbine blades:	Rotor diameter Φ607.7mm
	Short turbine blades:	Rotor diameter Φ577.4mm

3. Refer to the table below for combination (A to D)

	Shroud ring	Without identification	with identification "X"
Turbine blade			
Long turbine blades		A	B
Short turbine blades		C	D

4. Take measurement of gap at 4 locations of the circumference with a feeler gauge (*and compare the measured values with the gaps stated in the table below*)

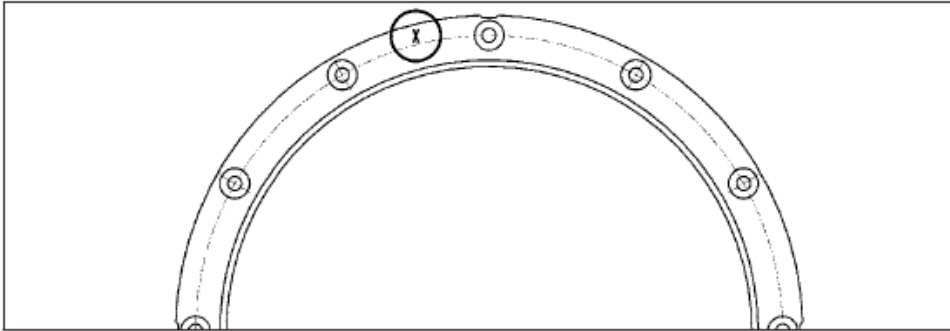
※The minimum value may not be fallen short of at any location on circumference.

Gaps and Clearance	Combination	Measuring Point	Condition as Manufactured		Replace Parts		Work Card
			Min. [mm]	Max. [mm]	Min. [mm]	Max. [mm]	
	A	6a ¹⁾ *	0.95	1.15	(0.80) ²⁾	1.35	500.54
	B		1.35	1.55	(1.20) ²⁾	1.75	
	C		0.85	1.05	(0.70) ²⁾	1.25	
	D		1.35	1.55	(1.20) ²⁾	1.75	

TCA77 Radial Gap Turbine Blade/Shroud Ring

The valid gaps and clearance depend on combination of turbine blade type and shroud ring type.

1. Check whether the shroud ring is marked with an identification "X" or not



2. Measure rotor diameter to check either long turbine blades or short turbine blades are installed.

	Long turbine blades:	Rotor diameter Φ722.0mm
	Short turbine blades:	Rotor diameter Φ686.0mm

3. Refer to the table below for combination (A to D)

	Shroud ring	Without identification	with identification "X"
Turbine blade			
Long turbine blades		A	B
Short turbine blades		C	D

4. Take measurement of gap at 4 locations of the circumference with a feeler gauge (*and compare the measured values with the gaps stated in the table below*)

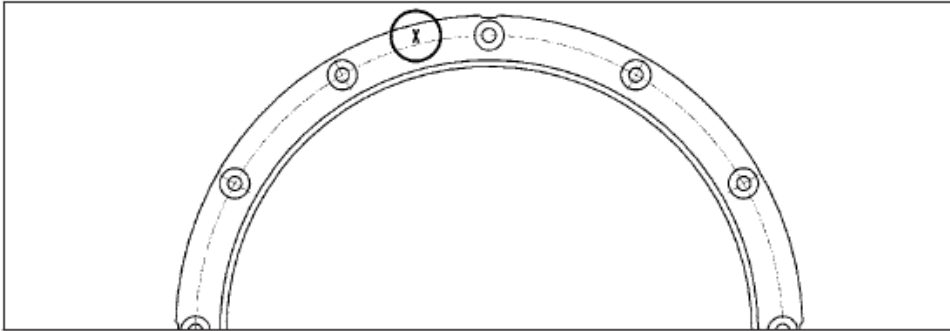
※The minimum value may not be fallen short of at any location on circumference.

Gaps and Clearance	Combination	Measuring Point	Condition as Manufactured		Replace Parts		Work Card
			Min. [mm]	Max. [mm]	Min. [mm]	Max. [mm]	
	A	6a ¹⁾ *	1.10	1.30	(0.90) ²⁾	1.55	500.54
	B		1.50	1.70	(1.30) ²⁾	1.95	
	C		1.00	1.20	(0.80) ²⁾	1.45	
	D		1.50	1.70	(1.30) ²⁾	1.95	

TCA88 Radial Gap Turbine Blade/Shroud Ring

The valid gaps and clearance depend on combination of turbine blade type and shroud ring type.

1. Check whether the shroud ring is marked with an identification "X" or not



2. Measure rotor diameter to check either long turbine blades or short turbine blades are installed.

	Long turbine blades:	Rotor diameter Φ857.5mm
	Short turbine blades:	Rotor diameter Φ814.6mm

3. Refer to the table below for combination (A to D)

	Shroud ring	Without identification	with identification "X"
Turbine blade			
Long turbine blades		A	B
Short turbine blades		C	D

4. Take measurement of gap at 4 locations of the circumference with a feeler gauge (*and compare the measured values with the gaps stated in the table below*)

※The minimum value may not be fallen short of at any location on circumference.

Gaps and Clearance	Combination	Measuring Point	Condition as Manufactured		Replace Parts		Work Card
			Min. [mm]	Max. [mm]	Min. [mm]	Max. [mm]	
	A	6a ¹⁾ *	1.30	1.50	(1.10) ²⁾	1.80	500.54
	B		1.70	1.90	(1.50) ²⁾	2.20	
	C		1.20	1.40	(1.00) ²⁾	1.70	
	D		1.70	1.90	(1.50) ²⁾	2.20	

Contact Address

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